An abstract graphic featuring a thick, blue, wavy ribbon that curves across the page. Scattered around and on the ribbon are various letters and symbols in different colors (red, green, blue, black, orange, pink). The letters are in various fonts and sizes, some appearing to be part of a larger word or phrase. The background is white with some faint, light blue lines.

Lenguaje use and knowledge construction in CLIL group work

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TESIS DOCTORAL

**LANGUAGE USE AND KNOWLEDGE
CONSTRUCTION IN CLIL GROUP WORK
ACTIVITIES**

**UNDERPINNING CONTENT AND LANGUAGE
INTEGRATION**

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Abstract

The present thesis contributes to the growing body of research on Content and Language Integrated Learning (CLIL), and provides research and analysis that address the *integrative* aspect in CLIL. It focuses on the integration of language and content in group-work sessions in CLIL and L1 primary classroom settings and investigates the connection that takes place between language, content and cognition. In the pursuit of operationalising this research, it puts forward a multi-layered analytical model that could be proven useful to further investigate these grounds. In addition, this study expands existing research on group-work interaction, in primary classroom learning and L2 and L1 comparisons—three areas that have been under-researched in the CLIL context. This thesis is also innovative, as it fills in a research gap by combining discourse analysis and results on the implementation of a pedagogical model. Moreover, the present research has significant implications for CLIL pedagogy, as it operationalises content and language integration into concrete levels of research that can inform educational practice (Nikula et al., 2016). In this study, pedagogical practices were applied in the classroom to improve students' communication and reasoning skills during small group work. The '*Thinking Together*' (TT) intervention programme (Mercer et al., 1999)—aimed at improving the quality of classroom talk, reasoning skills and collaborative learning—has here been adapted to the specificities of the L1 and CLIL contexts under study, applied in primary classrooms and evaluated. It is expected that, in future, this program will result in a tailored resource for both L1 and CLIL teachers to use in the classroom.

The data used in this research forms part of a bigger corpus collected by the researcher in 2015 in four grade 4 (age 9-10) primary classrooms (two CLIL and two L1 classes) in two primary schools in the northeast area of Madrid, Spain. The data from two CLIL classes (CLIL dataset) were collected in a private bilingual primary school and the data from the two Spanish L1 classes (L1 dataset) were collected in a subsidized school. The corpus consists of a total of 64 sessions (230,257 words) out of which 34 sessions (120,000 words) were used in this thesis. From each dataset, one class followed the TT intervention program, thus

constituting experimental groups (CLILA and L1A) and the other two classes served as control groups (CLILB and L1B). All classes performed two types of small group discussion activities: (a) a science topic discussion activity (STA) and (b) a problem-solving activity (PSA). The data was examined using the multi-layered analytical model designed in the present study that comprises a discourse, a knowledge and an interactional layer. The discourse layer is based on Systemic Functional Linguistics and uses an adaptation of Eggins and Slade's (1997) speech functions. The knowledge layer uses Christie's classroom registers (2002) and a version of Dalton-Puffer's cognitive discourse functions (2013). Finally, the interactional layer is based a Sociocultural perspective and uses Storch's (2002) interactional patterns. This thesis provides, to our knowledge, the first investigation that combines an interactional analysis with a discourse and cognitive research framework.

The results show that, in the discourse and knowledge layers, both CLIL and L1 students favour the use of *facts* and *evaluations* when producing *initiating* turns and try to reach a final agreement when ending them. However, they differ in that L1 students are more concerned with the state of the communication and CLIL students with the understanding. With regards to registers, CLIL students favour the *instructional* register more than L1 students. Within group interaction, CLIL groups have been found unequally distributed and following an expert/novice pattern and L1 groups following a dominant/passive pattern. The comparison across groups described the CLIL group as more focused on the correct understanding of the message and the L1 group as more concerned with the state of the communicative channel. The comparison of the STA and PSA proved that differences across activities are found in all analysed layers. In relation to the TT intervention program and its effect on group-work interaction and students' reasoning skills, results align with those obtained in previous studies (Mercer et al., 1999; Rojas Drummod et al., 2003). Findings show an improvement, specially in the CLIL group, of the punctuation obtained in an abstract joint reasoning test (Ravens Test of Progressive Matrices, RTPM) and an increase in the use of key linguistic features characteristic of *Exploratory talk*. *Exploratory talk* (Mercer, 1995) is defined as critical but constructive engagement of participants with each other's ideas and it is seen as the only type of talk that promotes actual learning since it makes reasoning visible and

accountable through effective and sound communication. However, even after the intervention, results confirmed that the interactional patterns in both CLIL and L1 groups remained unequally distributed. In addition, the present research proves the efficiency of the TT intervention program— originally designed for the L1—also for the L2 setting. In light of these results, it is concluded that targeting *Exploratory talk* as a culture of talk in small group work environments, can help create a collaborative and enriching talking community in the CLIL classroom.

Key words: Classroom interaction, co-construction of knowledge, Content and Language Integrated Learning (CLIL), *Exploratory Talk*, primary level, group work, systemic-functional linguistics, speech functions, cognitive discourse functions, interactional patterns.

Resumen

La presente tesis contribuye al creciente cuerpo de investigación sobre el aprendizaje integrado de contenidos y lenguas (AICLE o CLIL, *Content and Language Integrated Learning*, usando el término en Inglés), y aborda el reciente interés en la investigación del aspecto integrador de contenidos y lenguas en CLIL. Este estudio investiga la conexión que tiene lugar entre la lengua, el contenido y la cognición dentro del trabajo en grupo y en el contexto tanto de CLIL como de Ciencias Naturales impartidas en la lengua materna (L1 de ahora en adelante). La tesis se centra en la integración de lengua y contenido dentro de un contexto de aprendizaje (tanto en la L1 como en la L2). En un intento de facilitar la compleja labor propuesta por esta investigación, la presente tesis presenta un modelo analítico compuesto por tres niveles fundamentales. Este modelo podría ser útil para investigar la integración de contenidos y lenguas no solo en CLIL, sino en cualquier escena educativa. Además, este estudio amplía la investigación actual sobre la interacción de alumnos en grupos, sobre el aprendizaje en el aula de primaria y además contribuye a ampliar la investigación en el campo de los estudios comparativos entre una primera (L1) y segunda lengua (L2). Las investigaciones en estas tres áreas son escasas en el contexto CLIL. Esta tesis es también innovadora, ya que aporta una gran novedad al combinar el análisis de discurso con el diseño, implementación y evaluación de un modelo de intervención pedagógica. Además, tiene implicaciones significativas para la pedagogía de CLIL, ya que versa sobre la integración de lengua y contenido y busca aportar aplicaciones concretas para la investigación y práctica educativa (Nikula et al., 2016). En definitiva, la presente tesis ha desarrollado prácticas pedagógicas específicas en el aula para mejorar las habilidades de comunicación y razonamiento de los estudiantes mientras ejecutan dos tipos de actividades en grupo. El programa de intervención *Thinking Together* (TT, Pensando Juntos) (Mercer et al., 1999), que se diseñó con el objetivo de mejorar la calidad del lenguaje en el aula, el razonamiento y el aprendizaje colaborativo, ha sido adaptado a las características específicas de los contextos de L1 y CLIL. Uno de los objetivos a largo plazo es que este programa se convierta en un recurso que los maestros de L1 y CLIL puedan usar en el aula.

Los datos utilizados en esta investigación forman parte de un corpus más extenso recopilado por la investigadora durante el 2015 en cuatro aulas de 4º de primaria (9 a 10 años de edad). Dos de estas clases eran de CLIL y las otras dos de L1 en dos escuelas primarias del noreste de Madrid. Los datos de dos clases CLIL fueron recogidos en colegio privado y bilingüe y los datos de las dos clases de L1 fueron recogidos en un colegio concertado. El corpus consta de un total de 64 sesiones (230.257 palabras) de las cuales se utilizaron 34 sesiones (120.000 palabras) en esta tesis. Dos clases de cada colegio participaron en este estudio (dos de CLIL y dos de L1). De cada colegio, una clase siguió el programa de intervención TT, constituyendo así el grupo experimental (CLILA y L1A) y la otra no lo siguieron, sirviendo así como grupos de control (CLILB y L1B). Todas las clases realizaron dos tipos de actividades de discusión en grupos pequeños: (a) una actividad de discusión de un tema de ciencias naturales (abreviado STA en inglés) y (b) una actividad de resolución de problemas (abreviado PSA en inglés). Los datos fueron examinados utilizando un modelo analítico compuesto por tres niveles y diseñado por la investigadora. Los tres niveles son: el nivel discursivo, el nivel cognitivo y el nivel interactivo. El nivel discursivo se basa en la teoría de Lingüística Funcional Sistémica y utiliza la adaptación de las funciones del habla de Eggins y Slade (1997). El nivel cognitivo se basa en la clasificación de los registros del aula de Christie (2002) y además añade una adaptación de las funciones del discurso cognitivo (CDFs en inglés) de Dalton-Puffer (2013). Finalmente, el nivel interactivo se basa en una perspectiva sociocultural y utiliza los patrones de interacción de Storch (2002). Este modelo analítico multifuncional, hace de esta tesis un trabajo innovador, ya que es la primera investigación que combina el nivel interactivo con niveles discursivos y cognitivos.

En los niveles discursivo y cognitivo, los resultados muestran que tanto los alumnos de CLIL como los de L1 tienden a usar más hechos y evaluaciones al iniciar la conversación y al terminar, tratan de llegar a un acuerdo. Sin embargo, ambos difieren en que los estudiantes de L1 están más preocupados por el estado de la comunicación y a los estudiantes de CLIL les preocupa más la comprensión. En cuanto a los registros, los estudiantes de CLIL usan más frecuentemente que los estudiantes de L1 el registro de instrucción. En el nivel interactivo, los grupos CLIL

trabajan con una gran desigualdad en la participación de sus miembros y siguen un patrón experto / novato. Los grupos L1 siguen un patrón dominante / pasivo. La comparación entre grupos intensificó la diferencia de CLIL en la preocupación por la correcta comprensión del mensaje comparado con el grupo de L1. Sin embargo, también intensificó la diferencia del grupo L1 el estado del canal comunicativo. La comparación entre las dos actividades (STA y PSA) demostró que las diferencias entre las actividades se encuentran en los tres niveles analizados. En relación con el programa de intervención TT y su efecto en la interacción de trabajo en grupo y en el razonamiento de los estudiantes, los resultados se alinean con los obtenidos en estudios previos (Mercer et al., 1999; Rojas Drummod et al., 2003). Los hallazgos muestran una mejora de la puntuación obtenida en la prueba abstracta de razonamiento conjunto (Ravens Test of Progressive Matrices, RTPM) y un aumento en el uso de los elementos lingüísticos clave que caracterizan el tipo de habla llamada “conversación exploratoria” (*Exploratory talk* en inglés), especialmente en el grupo CLIL. La conversación exploratoria (Mercer, 1995) se define como el compromiso crítico pero constructivo de los participantes con las ideas de los demás y es considerado el único tipo de conversación que promueve el aprendizaje real, ya que hace que el razonamiento sea visible y responsable.

Sin embargo, incluso después de la intervención, los resultados confirmaron que los patrones de interacción en los grupos CLIL y L1 siguieron mostrando desigualdad participativa entre sus miembros. Además, esta investigación demuestra la eficacia del programa de intervención TT, que fue diseñado originalmente para el contexto de L1, y que ha demostrado también ser valioso en el contexto de L2. A la luz de los resultados de esta tesis, se concluye que tener como objetivo establecer la conversación exploratoria como cultura del aula, especialmente durante el trabajo en grupos, podría ayudar a crear una comunidad comunicativa, colaboradora y enriquecedora en el aula CLIL.

Palabras Clave: Interacción en el aula, construcción conjunta del conocimiento, Aprendizaje Integrado de Contenidos y Lenguaje (AICLE o CLIL), Conversación Exploratoria, Primaria, trabajo en grupo, lingüística sistémico-funcional, funciones del habla, funciones del discurso cognitivo (CDF), patrones de interacción.

A Ricardo

tu recuerdo renace
en mis quehaceres

dudas,
y sudores...

Agradecer es un gesto abocado a llegar con retraso.

Torpe. Minúsculo filo de un espacio muy hondo... Inmenso y lleno.

Y aparece a destiempo,

gritando un silencio que ha crecido en él poco a poco.

Siete letras

que siempre son pequeñas, mudas,

Siete letras injustas

para decir

el poema que son.

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Abbreviations

AICLE	Aprendizaje Integrado de Contenido y Lenguas Extranjeras
CDF	Cognitive Discourse Functions
CLIL	Content and Language Integrated Learning
CLILA	CLIL experimental group
CLILB	CLIL control group
EFL	English as a Foreign Language
ET	Exploratory Talk
FL	Foreign Language
L1	First Language
L2	Second Language
L1A	L1 experimental group
L1B	L1 control group
NF	Not Finished
NR	Not Representative
NV	Not Valid
O1; O2	Objective 1 and Objective 2
PSA	Problem Solving Activity
RQ	Research Question
SCT	Sociocultural Theory
SFL	Systemic Functional Linguistics
SLA	Second Language Acquisition
STA	Science Topic Activity
RTPM	Raven's Test of Progressive Matrices
TBL	Task based Learning
TBLL	Task Based Language Learning
TBT	Task Based teaching
TT	Thinking Together
T1	First time data was collected
T2	Second time data was collected

Presentación y conclusiones de la tesis

1. Presentación

1.1 Antecedentes y motivación del estudio

1.1.1 Aprendizaje Integrado de Contenidos y Lenguas (CLIL)

La globalización y la internacionalización del mundo actual ha dado lugar a un contexto educativo muy exigente en el que los métodos e instrumentos de enseñanza innovadores están en constante debate. Algunos autores han llamado a esta era la 'Edad de la Información'. Fink (2013) enumera las características del aprendizaje en esta 'Era de la Información': sistemas de aprendizaje fusionados; aprendizaje siempre al día; sistemas abiertos integrales e integrados, aprendizajes ilimitados y sinergias tecnológicas (Fink, 2013: 13). En el contexto europeo, las instituciones siempre están buscando instrumentos para mejorar la educación y la adquisición de conocimiento.

El aprendizaje integrado de lenguas y contenidos (CLIL en inglés y AICLE en castellano) es un ejemplo que persigue alcanzar el objetivo de construir una Europa multilingüe (Pérez-Vidal, 2009). Además, como afirma Devos (2016), el surgimiento del CLIL como modelo motivacional y contemporáneo para la enseñanza satisface las necesidades de la generación cibernética (nacida después de 2001), cuya idea de aprendizaje es "aprende mientras usas, usa mientras aprendes" (Mehisto et al., 2008: 11). En otras palabras, CLIL proporciona a los estudiantes un contexto en el que pueden poner en práctica sus conocimientos lingüísticos y comunicativos, de una manera similar, hasta cierto punto, a aprender un idioma en 'la calle'. Los estudiantes ya no quieren aprender idiomas aisladamente antes de tener la oportunidad de usarlos. En su lugar, prefieren aprender y utilizar los idiomas simultáneamente y en contextos que les resulten significativos.

Además, CLIL posee tres características que lo convierten en un enfoque educativo muy atractivo para la sociedad de la información. Es eficaz, eficiente y global (Devos, 2016: 23): eficaz, como se refleja en los excelentes resultados obtenidos por los estudiantes de CLIL en su segundo idioma (L2 en lo sucesivo); eficiente, porque

combina dos asignaturas escolares en una; y global, debido a su enfoque integrador del aprendizaje. Como señala Dalton-Puffer, Nikula y Smit (2010), aunque el doble objetivo de CLIL es conocido, este aspecto no ha sido suficientemente investigado: "la teoría sobre CLIL ha tratado el tema como una olla caliente: gran parte de la investigación existente sobre CLIL ha tendido a centrarse en su los aspectos de lengua extranjera o en sus aspectos de contenido, prestando mucha menos atención a su interfaz, es decir, a la integración del lengua y el contenido "(2010: 288). El presente estudio tiene como objetivo contribuir a esta creciente necesidad investigadora de centrarse en la integración de contenidos y lengua en CLIL.

1.1.2 La perspectiva integradora en CLIL

El elemento central y distintivo de CLIL es su doble enfoque educativo, que busca fusionar objetivos de contenido y aprendizaje de idiomas (Coyle, Hood y Marsh, 2010). En esta línea, muchos investigadores están llamando a traer la fusión de contenido y lengua extranjera a la enseñanza y la investigación en CLIL. Como Dalton-Puffer et al. Escribe: " o bien desde la lingüística aplicada o desde la pedagogía, la comprensión del aspecto integrador de CLIL requiere una fusión entre las distintas perspectivas para llevar a cabo una investigación fusionada "(2010: 289).

Otros investigadores también han defendido esta fusión de lenguaje y contenido en la investigación, la enseñanza y el aprendizaje. Dos volúmenes sobre CLIL (Llinares, Morton y Whittaker, 2012, Nikula, Dafouz, Moore y Smit, 2016) han puesto de relieve la integración como el principal aspecto a tratar en el CLIL. Muchos investigadores han exigido más trabajo desde enfoques basados varias teorías fusionadas y que tengan como objeto investigar el aprendizaje integrado de l contenidos y lenguas extranjeras (por ejemplo, Cenoz et al., 2014, Dalton-Puffer et al., 2010; Gajo, 2007). Hace una década, Leung (2005) propuso integrar dos cuestiones pedagógicas que todavía se veían de manera separada: el aprendizaje del contenido curricular y el aprendizaje de idiomas en la investigación bilingüe en el aula (2005: 240). Específicamente en CLIL, un estudio pionero fue el de Llinares , et al. (2012) sobre los diferentes roles la lengua en CLIL. En este libro, los autores exponen la necesidad de unir temas de contenido y lengua y usan los roles de interacción en el aula y el trabajo sobre géneros y registros para lograr este

propósito. Dos estudios recientes han propuesto un marco conceptual para el análisis y la implementación de CLIL (Llinares, 2015; Meyer et al., 2015). El presente estudio se basa en la afirmación que Llinares et al. (2012: 10) hacen cuando escriben: "La teoría necesita mostrar, con principios, cómo, , las actividades sociales como la educación modelan el uso del lenguaje y el lenguaje construye el conocimiento simultáneamente". Sin embargo, en las palabras de Nikula et al (2016: 2), "la operatividad de estas consideraciones al nivel concreto de la investigación y la práctica educativa sigue siendo un desafío".

Este estudio intenta hacer que estas consideraciones sean operativas proponiendo un modelo analítico con varios niveles que aborda de una manera fusionada tanto los aspectos de la lengua como los elementos del contenido presentes en varias actividades de discusión en grupo entre los alumnos de CLIL. Además, para ahondar más en el aspecto integrador del CLIL, hay que tratar el proceso entrelazado del lenguaje construyendo conocimientos y el de la educación dándole forma al lenguaje. Dalton-Puffer et al. (2010) "proponen que la investigación se base en el aspecto 'fusionado' de CLIL, y esto presupone un constructo inter e incluso transdisciplinar para usar en la investigación" (2010:289). El presente estudia recoge esta idea y propone una herramienta de análisis basada tanto en la perspectiva sociocultural del aprendizaje como en una perspectiva sistémica del lenguaje.

1.1.3 *Estudios comparativos entre L1 y CLIL*

Según Llinares (2015), la investigación centrada en la integración de contenidos y lenguas puede aportar ideas interesantes no sólo cuando se trata de una lengua extranjera, sino también en contextos de primera lengua. Más concretamente, "la investigación en CLIL sobre la integración de contenidos y lenguas podría servir de catalizador para aumentar la conciencia del papel del lenguaje en el aprendizaje de cualquier disciplina en cualquier idioma (primera, segunda o tercera lengua extranjera)" (2015: 70). Es en esta dirección que es necesaria una mayor investigación que compare el aprendizaje en los contextos CLIL y L1 y así poder "observar similitudes y diferencias e identificar qué características pueden ser transferidas de un idioma a otro" (Llinares, 2015: 70).

Sin embargo, la mayoría de los estudios comparativos se centran en el logro de lenguas extranjeras comparando CLIL y EFL (véase, por ejemplo, Hüttner y Rieder, 2010, Maillat, 2010; Nikula, 2008; Ruiz de Zarobe, 2007 y 2010). Pocos estudios han comparado el aprendizaje del contenido en los contextos CLIL y L1. Algunos de estos estudios, realizados por investigadores de la adquisición de la segunda lengua e investigadores en el campo de la lingüística aplicada, se han centrado en el aprendizaje de idiomas (Llinares y Whittaker, 2010, Vollmer, 2008). Por otro lado, hay también otros estudios (Airey, 2010; Wellington y Osborne, 2001;) realizados por investigadores especializados en didáctica de las ciencias y su enfoque es en el aprendizaje del contenido. En el campo de la lingüística aplicada o de la adquisición de la segunda lengua, los investigadores han prestado especial atención a la la al área de escritura académica (Llinares y Whittaker, 2010; Vollmer., 2008). Así, Llinares y Whittaker (2010) compararon la producción de los estudiantes de secundaria de Historia CLIL (enseñada en inglés) con la de sus compañeros que estudian también Historia pero en su L1, en castellano. Estos autores descubrieron que los estudiantes enseñados en la L1 eran más competentes en ciertas características del lenguaje académico como el uso de frases preposicionales para expresar circunstancias (tiempo, lugar y causa) y el uso de abstracciones, mientras que los estudiantes de CLIL usaban a menudo oraciones complejas, y poseían un registro más rico a nivel oral que a nivel de escritura académica. Además, Vollmer (2008), en su estudio comparativo de los estudiantes de CLIL y no CLIL, puso de manifiesto como muchos de los estudiantes de CLIL que observó mostraron malas habilidades de escritura académica en su uso del lenguaje académico. Vollmer (2008) demostró cómo los estudiantes a menudo fallaron en articular los conceptos y temas específicos de la materia adecuadamente usando el lenguaje académico apropiado tanto en L2 como en L1.

El campo de la enseñanza de las ciencias ha manifestado siempre interés por investigar la forma en que se aprende el contenido (ciencia) en el contexto de CLIL y en el contexto de la lengua materna L1 (Airey, 2010; Wellington y Osborne, 2001) Wellington y Osborne (2001) manifestaron en su libro la importancia de aprender el lenguaje de la ciencia en la las materias de ciencias.. Airey (2010) comparó la competencia oral de los estudiantes universitarios en su L1 (sueco) y en su L2 (inglés) al describir conceptos de física que ya habían aprendido antes. La

competencia oral se midió mediante la fluidez, el cambio de código y el discurso académico. Airey descubrió que los estudiantes hablaban con más fluidez en su L1 que en su L2 y además tendían a cambiar a su L1 cuando describían de los conceptos de física en L2. Sin embargo, también hayó que los estudiantes de alto rendimiento utilizaban tanto su L1 como su L2 por igual y postuló que la enseñanza de ciencias en L1 y L2 podría tener un impacto positivo en las descripciones de conceptos académicos de los estudiantes en ambos idiomas.

Es evidente, por lo tanto, que los estudios comparativos sobre los contextos de CLIL y L1 han sido impulsados hacia un factor más lingüístico o de contenido del proceso de aprendizaje, en lugar de tratar de centrarse en el aspecto integrador del lenguaje y contenido que tiene lugar en el proceso de aprendizaje. Por lo tanto, actualmente es muy necesario realizar estudios comparativos que examinen el elemento integrador del proceso de aprendizaje.

1.1.4 La educación primaria

En los años noventa, y en respuesta a las políticas lingüísticas europeas destinadas a promover el plurilingüismo entre los ciudadanos europeos (Consejo de Europa, 1992 y 2008, Eurydice, 2005), los Estados miembros desarrollaron diferentes programas destinados a favorecer la educación bilingüe en sus países. En España, la educación bilingüe en lengua extranjera y CLIL han experimentado un crecimiento muy rápido en la última década y "se está consolidando como tendencia en los sistemas educativos autónomos" (Lasagabaster y Ruiz de Zarobe, 2010: xi). En la Comunidad de Madrid, aunque CLIL es bastante reciente, su implementación ha sido extensa y rápida (Llinares y Dafouz, 2010) y en el año escolar 2015-2016, 492 colegios públicos participaban en el programa bilingüe (353 en la enseñanza primaria Y 139 en el nivel secundario). Aunque la investigación sobre el CLIL en Madrid se ha llevado a cabo en diferentes niveles educativos, a saber, primaria (Halbach, 2008; Basse, 2016; Pascual, 2017), secundaria (Llinares and Morton, 2010; Llinares and Whittaker, 2006, 2009, 2010; Llinares et al.2012; Morton, 2010; Whittaker, Llinares and McCabe, 2011) y la educación universitaria (Dafouz and Llinares, 2010, Dafouz, Núñez, Sancho, and Foran., 2007, Maíz-Arévalo and

Domínguez-Romero, 2013). Debido al rápido crecimiento de estos programas, se necesita más investigación con una clara aplicación pedagógica.

La mayoría de las investigaciones sobre el CLIL se han centrado en la educación secundaria, ya que este es el nivel en el que la mayoría de los programas de CLIL han comenzado y se han aplicado de manera más amplia (Lasagabaster y Sierra, 2010). En un estudio a gran escala de las escuelas secundarias austríacas, Dalton-Puffer (2007) analizó los patrones de uso del lenguaje y las formas lingüísticas, y comparó el patrón IRF en las clases de CLIL y EFL en las escuelas finlandesas, y Llinares y Whittaker (2009) examinaron el idioma oral y escrito de los estudiantes españoles en Madrid. Otros estudios han analizado el contexto de CLIL secundario europeo: Gassner y Maillat (2006) en Suiza; Jakonen y Morton (2015) en Finlandia; Mariotti (2006) en Italia y Sylvén (2006) en Suecia.

En primaria, la aplicación de CLIL en Europa crece cada día. Sin embargo, de acuerdo con Nikula, Dalton-Puffer y Llinares, 2013, la investigación CLIL en este nivel educativo está todavía en su infancia y es muy escasa. Entre los pocos estudios existentes, se encuentra el análisis de Buchholz (2007) sobre la participación de los estudiantes austriacos en la interacción en el aula, el trabajo de Massler (2012) sobre las opiniones de los niños, padres y maestros sobre el CLIL en Alemania, el estudio longitudinal de Serra (2007) que evaluaba el aprendizaje integrado y bilingüe implementado a través CLIL en tres colegios de primarias suizos y otros estudios comparativos como los de Llinares y Lyster (2014) comparando el uso y el efecto del feedback correctivo en las clases de inmersión y CLIL en España y Canadá, así como el trabajo de Llinares y Pastrana (2013) que compara la producción oral de estudiantes de primaria y secundaria en España.

Aunque la investigación a nivel primario en otros contextos de educación bilingüe, como la inmersión, es más abundante y es definitivamente relevante para CLIL, necesitamos más estudios contextualizados en entornos donde el colegio representa el único contacto que los estudiantes tienen con el idioma extranjero (Dalton Puffer et al., 2010). Esta es una diferencia importante con los contextos de inmersión donde las posibilidades de los estudiantes de tener contacto con la L2 son mucho más elevados (para extender el tema ver por ejemplo Lasagabaster y Sierra,

2010). La presente tesis aborda la laguna de investigación existente en el contexto de la educación primaria en CLIL

1.1.5 Interacción de grupo

La escuela se ha definido como un lugar donde la comunicación es particularmente relevante, un lugar que está allí "solamente para hablar" (Barnes, 1976: 14). Hasta hace poco tiempo, el tipo de comunicación predominante en el aula era el que existía entre el profesor y el resto de la clase. Sin embargo, ha habido un creciente interés en otras posibles formas de interacción en el aula, como el trabajo en grupo, y estas tendencias, ahora constituyen un terreno de interés en las tendencias pedagógicas actuales. Así, los métodos de aprendizaje cooperativo (por ejemplo, Sharan, 1990, Slavin, 1990), aprendizaje basado en tareas (por ejemplo, Nunan, 1989) y modelos pedagógicos basados en proyectos (por ejemplo, Blumenfeld et al., 1991) son metodologías que se basan en la Interacción entre los estudiantes. En estos métodos, los alumnos llevan a cabo actividades colaborativas en parejas o pequeños grupos en el aula. Este interés es compartido por los investigadores de la adquisición de un segundo idioma (SLA), especialmente por aquellos que trabajan dentro del modelo interaccionista. Dentro de este enfoque, uno de los primeros focos de investigación han sido las oportunidades de interacción que surgen entre parejas trabajando en el aula y cómo éstos negocian significados (Long, 1983). Recientemente, se ha incrementado el interés en los análisis del aprendizaje que versan sobre la interacción entre compañeros de clase y se centran especialmente en cómo se negocia la estructura de participación y el poder de cada miembro del grupo (por ejemplo, Ballinger, Guerrero y Villamil, 1994, Storch, 2002). En línea con esta investigación, el presente estudio aborda esta cuestión en un contexto que apenas se ha explorado: el aula CLIL.

Como Nikula et al. (2013) observan, la mayoría de los estudios sobre el discurso del aula CLIL han examinado la interacción de toda la clase con el profesor.. Muchos se han centrado en la secuencia prototípica de tres partes: Iniciación-Respuesta-Retroalimentación o secuencia IRF (Synclair y Coulthard, 1975), también conocida como secuencia Iniciación-Respuesta-Evaluación (IRE) (Mehan, 1979). Algunos autores han argumentado que este patrón a menudo restringe las posibilidades de

participación de los estudiantes en la construcción del conocimiento, ya que es principalmente el profesor el que selecciona el tema y el principal orador, impidiendo a menudo que los estudiantes manifiesten sus propias ideas e interpretaciones (Barnes, 1976, Cazden, 2001). Sin embargo, basándose en sus hallazgos y refiriéndose a contexto CLIL, Llinares et al. (2012) afirmó que la efectividad de este patrón no está determinada por la naturaleza del patrón mismo, sino por la actividad realizada, su propósito y los roles de los participantes que en ella actúan.

Algunos estudios ya han investigado la interacción entre parejas o en grupos en actividades en CLIL (por ejemplo, Devos, 2016, Llinares y Pastrana, 2013; Llinares y Morton, 2012; Pastrana, 2010; Morton y Evnitskaya, próximamente). Ellos han demostrado que este tipo de interacción permite a los estudiantes participar en los tres movimientos de la IRF, convirtiéndose así en participantes activos de su aprendizaje. No sólo son "animadores" del aprendizaje, sino también "directores" o generadores de conocimiento nuevo (Goffman, 1981; véase también Llinares y Morton, 2012). Aunque algunos estudios sobre CLIL han demostrado las ventajas de las actividades de grupo en comparación con las actividades de toda la clase (por ejemplo, Buchholz, 2007, Llinares y Pastrana, 2013; Nikula, 2005; Pastrana, 2010), un examen más profundo del tipo de lenguaje que los estudiantes de CLIL utilizan en tales actividades es necesario: "todavía sabemos poco sobre cómo los diferentes contextos de clase y entornos de actividad limitan el uso del lenguaje" (Nikula, 2005: 29). Para profundizar en la investigación de este tema, el presente estudio se centra en la interacción de grupos pequeños en contextos CLIL.

1.1.6 Aplicaciones en pedagógicas

Los estudios de investigación que se desarrollan en contextos educativos suelen reducir las aplicaciones pedagógicas a posibles implicaciones. En otras palabras, tienden a terminar con una larga lista de posibilidades y deseos, que, al final, a menudo, no terminan en las aulas. Esta es la razón por la que la presente tesis combina la investigación sobre la interacción grupal en las aulas de primaria con la formación de maestros y la implementación de un programa pedagógico específico

que puede mejorar el contenido integrado y el aprendizaje de idiomas en el trabajo grupal en CLIL y L1.

1.2 Objetivos y alcance del presente estudio

El objetivo de este estudio es obtener una comprensión más profunda de la relación entre el lenguaje y la construcción del conocimiento en las sesiones de trabajo en grupo en las aulas CLIL y L1.

Además, el investigador cree firmemente que las prácticas pedagógicas logran mejorar la calidad de comunicativa del aula (discurso), las habilidades de razonamiento (construcción del conocimiento) y el aprendizaje colaborativo (interacción) (Mercer et al., 1999; Dawes et al., 2004). Estas prácticas podrían ayudar a los estudiantes, tanto en contextos L1 como CLIL, a mejorar sus habilidades de comunicación, razonamiento y trabajo grupal. Por lo tanto, este estudio, mediante el diseño e implementación de un programa pedagógico específico, es decir, un programa de intervención que se explicará en el capítulo 3 de teoría, concretamente en la sección 3.3.3 y en el capítulo 4 de metodología, concretamente en la sección 4.4.3. Este estudio también busca encontrar un recurso pedagógico adaptado que los maestros de L1 y CLIL puedan utilizar en el aula y que les ayude a mejorar la calidad del trabajo en grupos pequeños en los tres niveles.

En resumen, el presente estudio tiene dos objetivos generales:

1. O1: Desarrollar una comprensión profunda de las oportunidades de aprendizaje en la interacción de trabajo en grupo en las aulas primarias, centrándose en la integración de la lengua y el contenido.
2. O2: Evaluar la efectividad de un programa de intervención dirigido a mejorar la discusión y el razonamiento en pequeños grupos en la clase y en tres niveles: discurso, conocimiento e interacción.

Para lograr estos objetivos generales, éstos se concretaron a través de objetivos específicos:

- I. Diseñar un modelo analítico en varios niveles que permita hacer la investigación del aspecto integrador en CLIL operativa.

II. Diseñar, implementar y evaluar los resultados de un programa de intervención que ayuda a los estudiantes tanto en CLIL como en L1 a mejorar sus habilidades de trabajo en grupos pequeños.

1.3 Metodología y preguntas de investigación

El presente estudio se organizó y estableció para ayudar a alcanzar en primer lugar los dos objetivos específicos (I y II) y, en segundo lugar, los dos objetivos generales (O1 y O2). En esta sección la investigación realizada en la presente tesis se situará dentro de su contexto para terminar presentando las preguntas de investigación que lo han impulsado.

1.3.1 Participantes y contexto de investigación

En este estudio participaron cuatro clases, dos de CLIL y dos de L1, de dos colegios de primaria. Los datos de dos clases CLIL (grupo CLIL) fueron recogidos en un colegio privado bilingüe situado en el noreste de Madrid. Los datos de las otras dos clases (grupo L1) fueron recogidos en colegio concertado también situado en el noreste de Madrid. Ambos colegios están situados en zonas socioeconómicamente similares. Los alumnos que participaron en este estudio estaban 4^º de primaria (9-10 años), y cada clase tenía entre 23 y 27 estudiantes.

De las cuatro clases totales, dos clases CLIL y dos de L1, se seleccionaron al azar dos clases (una de cada grupo) para seguir el programa de intervención, constituyendo así los grupos experimentales (CLILA y L1A). Las otras dos clases sirvieron como grupos de control (CLILB y L1B) y continuaron con sus clases habituales pero también fueron grabados. Ambas profesoras de los grupos experimentales realizaron una formación sobre el programa de intervención e impartida por el investigador antes de poner en práctica el programa. El programa de intervención elegido fue el programa Thinking Together desarrollado por Neil Mercer y sus colegas en la Facultad de Educación de la Universidad de Cambridge en el año 2004 (Dawes, Mercer y Wegerif, 2004). Este programa fue diseñado para mejorar la calidad de la comunicación en clase y el razonamiento en grupo en las aulas de L1

británicas. Esto lo lograban fomentando un tipo de habla llamada al suscitar un tipo de charla llamada conversación exploratoria (Barnes, 1975, ver sección 3.3.2 en el capítulo 3 para más detalles). El programa Thinking Together ya se había llevado a cabo en el contexto L1 en el Reino Unido y México. Los estudios realizados sobre la implementación y los resultados del programa en estos dos países (Mercer, Wegerif y Dawes, 1999, Rojas-Drummod, Pérez, Vélez, Gómez y Mendoza, 2003) mostraron cómo los estudiantes de las clases experimentales mejoraron sus habilidades de resolución de problemas.

Para el presente estudio, el programa original fue adaptado para satisfacer las características lingüísticas de los estudiantes de L1 y CLIL españoles y adaptarlo también al currículo español. Para medir las habilidades de resolución de problemas de los estudiantes, se utilizó la prueba de Ravens de matrices progresivas, como a su vez habían usado los estudios mencionados en el Reino Unido y México. Esta prueba se explica más detalladamente en el capítulo 4, sección 4.3.2.2. En los cuatro grupos, tanto experimentales como de control, se realizaron dos sesiones grupales: una actividad de discusión de un tema de ciencias naturales (STA en inglés) y una actividad de resolución de problemas (PSA en inglés). Para evaluar los resultados del programa de intervención, los cuatro grupos y las dos actividades fueron grabadas en video y audio en dos momentos: antes y después de la intervención (febrero de 2015, pre-test y junio de 2015, Post-test). Los datos recogidos constituyeron el corpus de los datos del aula. Para esta tesis, del total de 8-9 grupos pequeños que realizaron ambas actividades en cada clase, sólo 4 fueron seleccionados aleatoriamente para el análisis, formando así un total de 16 grupos y 32 grabaciones (aproximadamente 21h grabadas) La descripción de los datos se hará con más detalle en el capítulo 4, sección 4.3. Todos los datos fueron transcritos por el investigador y un colega utilizando las convenciones de la Universidad de California en Santa Bárbara (Du Bois et al., 1993; Du Bois, 2003).

1.3.2 Preguntas de investigación

Para lograr alcanzar los dos objetivos generales establecidos para este estudio, esta investigación se divide en dos partes. La primera parte describe y compara el proceso de co-construcción de conocimiento (O1) en la interacción de grupos

pequeños en los cuatro grupos analizados (dos CLIL y dos grupos L1 paralelos) a través de dos actividades (STA y PSA). Las preguntas de investigación (RQ) para esta parte del estudio son las siguientes:

PARTE 1

RQ1. ¿Cómo se co-construye el conocimiento en las actividades de trabajo en grupo CLIL y L1?

RQ1.1 ¿Qué tipo de funciones de lenguaje producen los estudiantes de CLIL y L1?

RQ1.2 ¿Qué tipo de conocimiento se muestra en el uso de registros y funciones del discurso cognitivo por parte de los alumnos de CLIL y L1?

RQ1.3 ¿Qué tipo de interacción tiene lugar en el CLIL y en el grupo L1 en términos de igualdad y mutualidad fomentadas en los grupos?

RQ2. ¿Hay diferencias en los tres niveles (1.1, 1.2, 1.3) anteriores entre CLIL y grupos paralelos que trabajan en las mismas actividades en el L1? Si es así, ¿cuáles son?

RQ3. ¿Existen diferencias en los tres niveles(1.1, 1.2, 1.3) anteriores cuando los estudiantes en los grupos CLIL y L1 discuten un tema y cuando resuelven un problema? En caso afirmativo, ¿cuáles son?

La segunda parte tiene como objetivo evaluar los resultados del programa de intervención Thinking Together (TT) (02). Esto se realiza analizando cómo los grupos experimentales CLIL y L1 razonan juntos y cómo co-construyen el conocimiento antes y después de la intervención. Este análisis también incluye una comparación entre los dos grupos (CLIL experimental versus L1 experimental y CLIL experimental versus CLIL control) y en las dos actividades (PSA y STA). Las preguntas de investigación para esta parte del estudio son las siguientes:

PARTE 2

RQ4. ¿Cómo razonan los grupos CLIL y L1 para resolver problemas en la prueba Ravens de matrices progresivas?

RQ4.1 ¿Existe alguna diferencia entre los grupos CLIL y L1 experimentales (CLILA vs L1A) antes y después de la intervención?

RQ4.2 ¿Hay alguna diferencia entre los grupos CLIL y L1 de CLIL y CL1 y LC1 y L1B?

RQ4.3 ¿Existe alguna diferencia entre el grupo experimental CLIL y el grupo experimental L1 (CLILA y L1A) después de la intervención? Si es así, ¿cuáles son?

RQ5. ¿Cómo se co-construye el conocimiento en el grupo experimental CLIL (CLILA) antes y después de la intervención?

RQ5.1 ¿Existen diferencias en comparación con el grupo experimental L1 (L1A)? En caso afirmativo, ¿cuáles son?

RQ5.2 ¿Existen diferencias entre las dos actividades (PSA después de la intervención y STA)?

Para responder a estas preguntas de investigación se diseñó un modelo analítico de tres niveles: el nivel discursivo, el nivel cognitivo y el nivel interactivo. Estos niveles corresponden a las preguntas de investigación 1.1, 1.2 y 1.3, respectivamente. El primer nivel discursivo examina el uso que hacen los estudiantes de las funciones del lenguaje para ver cómo se usa el lenguaje para transmitir significado. El modelo de funciones del lenguaje para analizar las conversaciones coloquiales desarrollado por Eggins y Slade (1997) fue adaptado a las necesidades, objetivos y contexto de esta tesis. El nivel cognitivo identifica el tipo de contenido que se habla a través de las funciones del habla. Para diseñar esta capa se utilizó el modelo de los registros de aula (Christie, 2002) junto con una adaptación de las funciones discursivas cognitivas de Dalton-Puffer (2013) (CDFs en lo sucesivo). Finalmente, la capa interaccional analiza la forma en que los estudiantes interactúan en grupo. Para esta capa, se utilizaron los patrones interaccionales basados en la igualdad y la mutualidad y desarrollados por Storch (2002). Se espera que la combinación de estos tres niveles permita proporcionar un cuadro completo y detallado de la complejidad de la interrelación entre el contenido y el lenguaje. Este modelo de varios niveles se explica en detalle y nivel por nivel en el capítulo 5, sección 5.2. La figura 1.1 es una representación del modelo analítico multifuncional utilizado en la presente tesis.

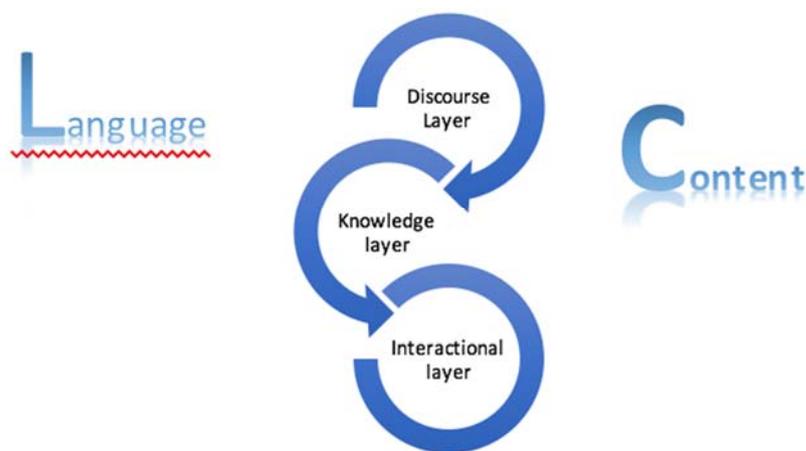


Figura1.1: Representación del modelo multifuncional usado en el presente estudio.

1.4 Perspectivas teóricas

1.4.1 *Un modelo combinado para el análisis de la interacción grupal en CLIL*

El análisis de la interacción grupal en el aula puede abordarse desde múltiples perspectivas. En el campo pedagógico o educativo el debate se centra en el aprendizaje en general, y los expertos en educación a menudo se centran en el aprendizaje per se y se basan en las metodologías, los tipos de conversación y los tipos de interacción que promueven ese aprendizaje. Mientras que en el campo lingüístico el enfoque principal es el lenguaje y el aprendizaje de lenguas, ya que los lingüistas consideran el lenguaje como portador de significados y conceptos a aprender. Este doble interés es paralelo al foco de interés compartido por las comunidades de investigación y enseñanza de CLIL: cómo integrar el contenido y el lenguaje.

Algunas aplicaciones de la lingüística aplicada se han dedicado a investigar la forma en que el lenguaje está conectado al aprendizaje en general. Esto es particularmente interesante para el enfoque Sistémico Funcional (SFL en inglés), un enfoque que se centra en los significados y cómo estos se construyen a través del uso del lenguaje (Halliday, 1977). Dentro del campo educativo, la teoría sociocultural (en adelante SCT, del inglés) considera al aprendizaje como un proceso social inmerso en el acto

de comunicar (Lantolf, 2000). Para analizar profundamente este doble interés en el lenguaje y el conocimiento, el presente estudio combina los campos educativo y lingüístico para comprender cómo el lenguaje y el conocimiento se co-construyen en la interacción que se desarrolla en el trabajo en grupo. De este modo, y desde una perspectiva lingüística se han utilizado enfoques sistémico-funcionales y cognitivos del lenguaje, mientras que desde una perspectiva educativa se ha adoptado una perspectiva sociocultural.

Como ya se ha mencionado anteriormente en relación con el modelo analítico de tres niveles diseñado para este estudio (sección 1.3.2), el análisis lingüístico comprende el nivel del discurso (basado en el modelo de Eggins y Slade de las funciones del lenguaje) y el nivel de conocimiento (basado en el modelo de Christie's de los registros del aula y los CDF de Dalton-Puffer). La combinación de estos modelos permite examinar el lenguaje tal y como se utiliza en la interacción entre alumnos en el trabajo en grupo (funciones del lenguaje) y conectar realizaciones lingüísticas específicas con su significado (CDFs). Mientras tanto, el análisis sociocultural basado en la educación se corresponde con el nivel interaccional (basado en los patrones interaccionales de Storch.) El nivel interactivo agrega el elemento social de interacción entre iguales al análisis multifuncional del proceso de aprendizaje que se produce mientras se trabaja grupalmente en la clase CLIL y en la clase de L1 Otra parte de este enfoque educativo es el desarrollo del programa de intervención que busca mejorar la calidad de la comunicación en clase y el razonamiento grupal (Mercer et al, 1999; Dawes et al., 2004). Al combinar SFL y SCT, el presente estudio pretende ir más allá del lenguaje, buscando analizar el proceso que une e integra el lenguaje y la cognición. . Ésta perspectiva combinada considera que la conversación entre iguales permite a los estudiantes razonar y adquirir conocimientos mientras se sumergen en la creación de significados Esta primacía del lenguaje y su interrelación con el pensamiento pueden ayudar a integrar el contenido y las lenguas en CLIL. Además, y según Moate (2010): "proporciona la base fundamental para la relación negociada entre estos objetivos duales" (2010: 43).

Varios han sido los investigadores que han unido las sinergias entre SCT y SFL (Hammond, 2002, y Schleppegrell, 2004; Wells, 1999), quienes han combinado los dos modelos en sus investigaciones sobre el lenguaje y la educación. Este vínculo ha

sido posible debido a la visión paralela que ambos marcos tienen sobre la concepción del aprendizaje de lenguas en la interacción con otros. Dentro del marco CLIL, Llinares et al. (2012) también demostraron la compatibilidad de estos enfoques ya que ambos ven el lenguaje como un proceso social. Es decir, estos autores escriben: "En SFL, el uso del lenguaje está determinado por el tipo de actividad que estamos haciendo y por quién lo está haciendo, y para Vygotsky, ese uso del lenguaje con los demás es la herramienta esencial en nuestro desarrollo cognitivo". 2012: 11). Los autores dan un paso más allá y añaden modelos sociales de aprendizaje de idiomas en SLA como un tercer enfoque en su marco, creando una triple perspectiva teórica (ver figura 1.2 para una representación de este modelo).

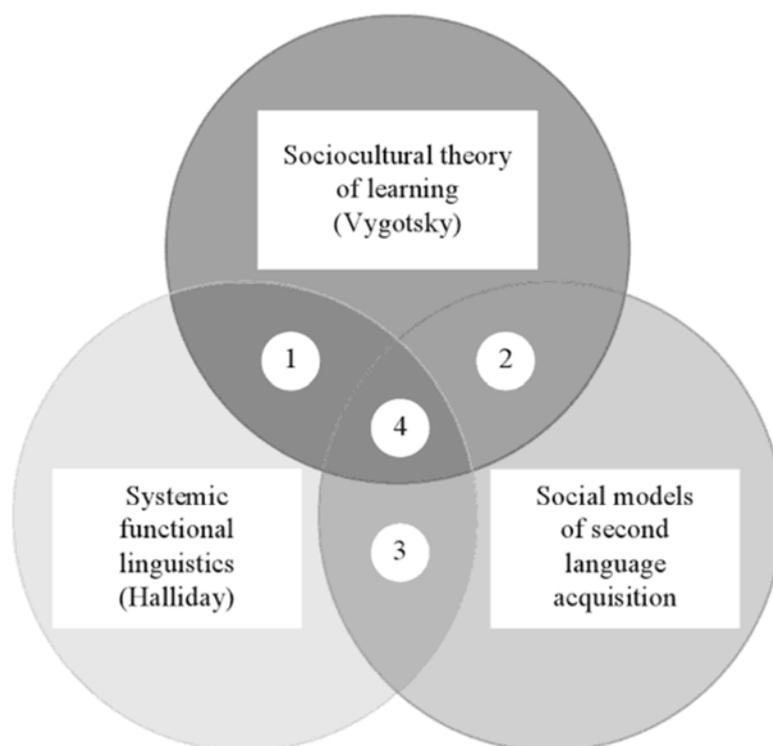


Figura 1.2: Triple perspectiva teórica (reproducida del original en Llinares et al., 2012:11)

Una perspectiva social global reúne los diversos aspectos del doble marco de esta tesis: una teoría social-semiótica del lenguaje como actividad de creación de sentido (SFL) y una teoría Vygotskiana del aprendizaje centrada en la interacción social. Por lo tanto, este estudio podría situarse en la superposición número uno en el marco de Llinares et al. (2012). Dado que esta tesis examina dos contextos de aprendizaje

diferentes (CLIL y L1), el marco debería ser aplicable a ambos contextos y, por lo tanto, la perspectiva de las teorías de orientación social de SLA se vuelve menos relevante para los propósitos del presente estudio.

1.5 Resumen de la tesis

Esta tesis se divide en cuatro partes principales. La primera parte (Capítulos 1 a 4) proporciona una visión general de la tesis (este capítulo) y luego presenta dos marcos teóricos utilizados en el estudio: enfoques lingüísticos (capítulo 2) y perspectivas educativas (capítulo 3). De esta manera, el capítulo 2 se centra en la perspectiva lingüística funcional sistémica como el marco lingüístico principal del estudio y proporciona una visión general de los tres aspectos lingüísticos utilizados para el modelo analítico multifuncional: las funciones del habla, los registros del aula y las funciones del discurso cognitivo. El capítulo 3 presenta la perspectiva educativa sociocultural y expone el tercer componente del modelo multifuncional: los patrones de interacción. Este capítulo también proporciona detalles sobre el programa de intervención y sus fundamentos teóricos.

La segunda parte (capítulos 4 y 5) describe el enfoque metodológico, el diseño de la investigación, los procedimientos de recolección de datos y el modelo analítico propuesto utilizado en este estudio. El capítulo 4 revisa los objetivos de este estudio y las preguntas de investigación y presenta el contexto de investigación y los principales aspectos metodológicos y de procedimiento del estudio. El capítulo 5 presenta primero cada capa de la analítica de múltiples capas desarrollada y explica el proceso de diseño y el modelo o modelos sobre los que se basa cada capa. En segundo lugar, el capítulo presenta las consideraciones y modificaciones hechas al usar y después de usar el modelo analítico multicapa.

La tercera parte (Capítulos 6 y 7) presenta los resultados de las dos partes analíticas del estudio. Cada capítulo se centra así en una parte analítica. A continuación de las preguntas de investigación 1-3 y sus subpreguntas, el capítulo 6 expone los resultados descriptivos del análisis de la co-construcción del conocimiento en cada grupo, así como entre grupos y actividades. El capítulo 7 presenta primero los resultados de la resolución de problemas en ambos grupos después del programa de intervención, siguiendo así la pregunta de investigación 4 y sus subpreguntas y

luego proporciona resultados sobre la co-construcción de conocimientos en el grupo CLIL antes y después de la intervención programa.

Finalmente, la cuarta parte (Capítulos 8 y 9) contiene la discusión de los resultados y conclusiones. El capítulo 8 reúne los principales resultados obtenidos en las dos partes analíticas del estudio, poniendo de relieve los principales puntos de discusión. También propone aplicaciones pedagógicas y de investigación derivadas de esta tesis. Para terminar, el Capítulo 9 STA algunas conclusiones sobre el estudio en su conjunto, identifica sus limitaciones y sugiere temas para investigaciones futuras.

2. Discusión y Conclusiones

2.1 Introducción

El modelo analítico de múltiples niveles, presentado en el capítulo 5, fue diseñado con el objetivo de crear una herramienta de investigación transdisciplinar que sirviera para explorar la integración del contenido y el lenguaje en CLIL y otros contextos de aprendizaje. El programa de intervención Thinking Together descrito en el mismo capítulo tenía como objetivo mejorar la discusión en grupos pequeños y el razonamiento en la clase en tres niveles: el discurso, el conocimiento y la interacción. En el capítulo 6 se presentaron los hallazgos sobre la co-construcción del conocimiento dentro de la integración de lenguas y contenidos e inmersos en interacciones grupales tanto en CLIL como en la clase de L1. El capítulo 7 presentó los resultados de la prueba de razonamiento en grupo y los efectos del programa de intervención TT desarrollado por dos profesores en dos grupos experimentales (uno en CLIL y uno en L1). Los efectos fueron valorados a nivel de resultados en la prueba de razonamiento grupales y en los tres niveles del modelo: nivel discursivo, cognitivo e interactivo. Los hallazgos presentados en estos dos capítulos (6 y 7) abordaron las cinco preguntas de investigación del presente estudio. El capítulo 5 planteó dos objetivos metodológicos: I. Diseñar un modelo analítico con múltiples niveles que permitiera investigar la integración de contenidos e idiomas de una manera operativa; Y II. Diseñar e implementar un programa de intervención que

ayude a los estudiantes tanto en el CLIL como en el L1 a mejorar sus habilidades de trabajo en grupos pequeños. La aplicación de estos modelos ayudó a alcanzar los dos objetivos generales de la tesis, que fueron abordados en los capítulos 6 y 7: O1. Desarrollar una comprensión profunda de las oportunidades de aprendizaje en la interacción de trabajo grupal en las aulas primarias, centrándose en la integración del lenguaje y el contenido; Y O2}. Evaluar la efectividad de un programa de intervención dirigido a mejorar la discusión y el razonamiento en pequeños grupos en la clase en tres niveles: discurso, conocimiento e interacción.

Este capítulo se estructura de la siguiente manera: la sección 2.2 comienza con la discusión del valor del modelo de múltiples capas propuesto por este estudio. A continuación se presenta una discusión de los hallazgos relevantes relacionados con las preguntas de investigación. Esta discusión se abordará desde cada una de las perspectivas teóricas que constituyen el presente estudio. Sin embargo, se presta una atención especial a los aspectos que ayudan a relacionar los resultados con los tres tipos de discurso defendidos por Barnes (1977). El primer punto de enfoque es la co-construcción de conocimiento (2.3), realizada por los alumnos de CLIL (sección 2.3.1, RQ1) y por los estudiantes de L1 (sección 2.3.2, RQ1). Luego se discutirá la comparación de la co-construcción de conocimiento entre grupos (sección 2.3.3, RQ2) y actividades (sección 2.3.4, RQ3).

El segundo punto de enfoque se relaciona con los resultados obtenidos después del programa de intervención Thinking Together (8.4). En la sección 8.4.1 (RQ4), los hallazgos del razonamiento grupal medido a través de la Prueba Ravens de Matrices Progresivas se discuten en comparación con los obtenidos previamente por Mercer et al. (1999) y Rojas-Drummond et al (2003). En segundo lugar, se describe la co-construcción del conocimiento a través de la lente de un grupo de enfoque CLIL experimental (interviniente) (2.4.2) para ser posteriormente comparado con un grupo experimental L1 (2.4.3) y el tipo de actividad (2.4.4). En conjunto, esta parte tiene como objetivo evaluar el valor del programa de intervención TT y, por lo tanto, sus mejoras y beneficios se discuten en la sección 2.4 (RQ5).

A continuación, y como se mencionó anteriormente, se examinarán en la sección 2.5 las aplicaciones a la investigación que tendría el modelo de múltiples capas propuesto. En la sección 2.6 se discutirán las aplicaciones de los resultados a la pedagogía del aula y del lenguaje. Esta última sección abrirá la puerta para dar cuenta de las limitaciones de esta tesis (2.7) y una revisión de la investigación futura (2.8). Finalmente, después de un resumen y un resumen del estudio (8.9), se presentan las conclusiones de esta tesis (2.10).

A fin de facilitar el resumen de los principales puntos de discusión en cada sección, estos han sido destacados en negrita y numerados. Además, se han elaborado dos cifras que resumen los resultados del capítulo 6 (figura 8.1) y del capítulo 7 (figura 8.2) para simplificar la discusión de las conclusiones pertinentes (véanse las figuras al final de este capítulo).

2.2 Discourse Knowledge Interaction Modelo analítico multicapa

Como se mencionó anteriormente, el capítulo 5 presentó el modelo analítico propuesto en este estudio para investigar el contenido y la integración del lenguaje en el trabajo grupal. Para explicar este complejo proceso se propuso un modelo analítico de tres niveles. Los tres niveles son: nivel discursivo, nivel cognitivo y nivel interactivo (DKI). Estas tres capas conjuntas tenían como objetivo dar una perspectiva completa de los elementos discursivos, cognitivos e interactivos que interactúan en el trabajo en grupo de clases.

Reunir diversos elementos para desarrollar un modelo analítico para el discurso de clase no es una novedad. En Mercer, el análisis de Wegerif y Dawes (1999) de la conversación exploratoria, se identificaron elementos discursivos y lingüísticos significativos que caracterizan este tipo de conversaciones, tales como: "porque", "acuerdo" y "pienso". En Rojas-Drummod et al. (2003) el análisis se realizó utilizando un modelo que fue anunciado como discursivo, cognitivo y social, pero que, de hecho, fue una versión mejorada del modelo utilizado por Mercer et al. (1999) y otro modelo propuesto por Mercer y Wegerif (1996). Sin embargo, es necesario indicar que a través del modelo propuesto por Rojas-Drummod et al.

(2003), éstos fueron capaces de analizar los datos de manera más completa. Años después, se planteó la necesidad de un marco más detallado y Hennessy et al. (2016) presentó un modelo analítico para satisfacer esta necesidad. Este modelo se ha llamado Esquema para el Análisis del Diálogo Educativo (SEDA del inglés). Este esquema se sitúa dentro de un paradigma sociocultural, y se basa en la perspectiva etnográfica de Hymes sobre la comunicación ya que esta perspectiva destaca la importancia del contexto. El modelo consiste en una lista descriptiva de los "actos comunicativos" que se pueden encontrar en la clase. Todos los modelos analíticos mencionados, que están enmarcados en una perspectiva sociocultural, tienen algo en común. Todos exploran los elementos discursivos que se utilizan para la construcción del conocimiento; Sin embargo, ninguno de ellos tiene en cuenta los aspectos interactivos. Por otro lado, en los estudios en los que encontramos un análisis interactivo (Ballinger, 2013, Damon y Phelps, 1989, Storch, 2002), no se consideran las características cognitivas y discursivas. El presente estudio llena esta vacío mediante la elaboración de un modelo analítico que utiliza elementos tanto discursivos como cognitivos junto con factores de interacción. Desde una perspectiva sistémica funcional, el lenguaje se entiende como inextricablemente ligado a sus significados y contexto. Su modelo para el análisis de la interacción, entonces, parece más adecuado para el análisis del contenido y la integración del lenguaje en el discurso que otros modelos, como el IRF. Existen otras aplicaciones de SFL para el análisis del discurso en el aula en contextos de L2 o CLIL (Llinares, 2006, 2007a, Llinares y Pastrana, 2013; Llinares y Romero, 2007; Pastrana, 2010; Riesco-Bernier, 2007). Algunos de ellos son los modelos que investigan el discurso y la cognición en CLIL, como el constructo CDF propuesto por Dalton-Puffer (2014). La combinación de estos marcos (SFL y CDF) en este estudio ha demostrado ser útil para integrar el discurso y los aspectos cognitivos en el análisis de la integración de lenguaje y contenido en el trabajo en grupo. Sin embargo, este estudio ha ido más allá y ha combinado estos dos niveles (discurso y cognición) con la participación interactiva de los estudiantes. Estudios recientes que abogan por la exploración del contenido y la integración lingüística han puesto de manifiesto diferentes modelos teóricos combinados (Llinares et al., 2012) propusieron tener en cuenta el elemento social de la interacción (Llinares y Morton, 2016). Sin embargo, no se han encontrado estudios sobre CLIL que hayan explorado la variable social desde una

perspectiva interactiva en línea con los patrones propuestos por Storch (2002). El valor del marco de Storch (2002) está en el uso de ambos aspectos de igualdad y mutualidad para determinar el tipo de patrón interaccional presente en el trabajo grupal o sesiones de trabajo en pareja. Estos dos factores son fácilmente investigables en actividades orales y encapsulan conceptos que están cerca de la conversación exploratoria. Por lo tanto, **este estudio ha contribuido, con una herramienta multifuncional que tiene en cuenta no sólo la integración de los contenidos o conocimientos que se comunican y las funciones del habla sino también la presencia de roles o diferentes formas de interactividad dentro de la interacción grupal o cualquier tipo de interacción** (1). Muchos autores han descrito cómo la presencia de ciertos roles o identidades (Wells, 1999; Goffman, 1981) influye en cualquier tipo de interacción. También se ha demostrado que estos roles ejercen una poderosa influencia dentro de la tarea e influyen en el lenguaje y contenido utilizados (Llinares y Morton, 2010). Llinares y Morton (2010) encontraron que el espacio interaccional generado por las diferentes actividades desencadenó diferentes roles como animadores, directores o autores (Goffman, 1981) por parte de los estudiantes del CLIL. Por otra parte, ciertos estilos interaccionales han demostrado influir en el aprendizaje eficaz L2 más que otros (ver Ballinger, 2013, Storch, 2002). Por lo tanto, la consideración del nivel de interacción dentro de un modelo analítico está más que justificada. **En definitiva, el uso de este modelo analítico de múltiples niveles ha enriquecido el análisis de datos y ha proporcionado una descripción nivel por nivel del proceso que va desde el lenguaje al conocimiento y al razonamiento dentro del trabajo en grupo** (2). Prueba de ello es que el análisis multifuncional realizado en este estudio obtuvo resultados comparables a los análisis cualitativos realizados en pequeños corpus (Mercer et al., 1999; Rojas-Drummond et al., 2003).

2.3 Parte 1 del estudio: Co-construcción del conocimiento

Los resultados presentados en los capítulos 6 y 7 explican de forma separada los hallazgos obtenidos en los diferentes niveles (discursivo, cognitivo e interactivo). En esta sección, en primer lugar, pondremos en común todos los hallazgos de los tres

niveles para obtener la perspectiva propuesta por este estudio: una visión integradora de la co-construcción de conocimientos por parte de los estudiantes de CLIL y L1 en el trabajo de grupo. Discutiremos las respuestas a las siguientes preguntas de investigación:

PARTE 1

RQ1. ¿Cómo se co-construye el conocimiento en las actividades de trabajo grupal CLIL y L1?

RQ1.1 ¿Qué tipo de funciones de voz producen los estudiantes de CLIL y L1?

RQ1.2 ¿Qué tipo de conocimiento se muestra en el uso de registros y funciones del discurso cognitivo por parte de los alumnos de CLIL y L1?

RQ1.3 ¿Qué tipo de interacción tiene lugar en el CLIL y en el grupo L1 en términos de igualdad y mutualidad fomentadas en los grupos?

RQ2. ¿Hay diferencias entre los tres niveles (1.1, 1.2, 1.3) arriba entre CLIL y grupos paralelos que trabajan en las mismas actividades en el L1? Si es así, ¿cuáles son?

RQ3. ¿Existen diferencias entre los tres niveles (1.1, 1.2, 1.3) anteriores cuando los estudiantes en los grupos CLIL y L1 participan en una discusión de temas científicos y una discusión de resolución de problemas? Si es así, ¿cuáles son?

Después de estas preguntas de investigación, se propone una discusión de los hallazgos relevantes. Por lo tanto, trataremos de los siguientes temas:

- Co-construcción de conocimientos en el trabajo en grupo del CLIL (RQ1)
- Co-construcción de conocimiento en el trabajo de grupo L1 (RQ1)
- Comparación de la co-construcción de conocimiento entre grupos (RQ2) y actividades (RQ3)

Como se indicó anteriormente, estos tres aspectos tratan de responder a las preguntas de investigación 1 a 3 de la PARTE 1 de este estudio (véase la figura 8.1 para hallazgos resumidos y preguntas de investigación)

2.3.1 Co-construcción de conocimientos en el trabajo en grupo del CLIL

En relación con RQ1 (¿Cómo se co-construye el conocimiento en las actividades de trabajo en grupo de CLIL?) Los resultados indican que las iniciaciones de los

estudiantes de CLIL en las actividades en grupo se caracterizan por dar hechos la mayoría de las veces. Dar es la función del lenguaje más usada y los hechos el tipo de conocimiento utilizado en su mayoría. Después de dar los resultados de los hechos, los alumnos de CLIL tienden a dar evaluaciones como segunda opción. Se puede esperar que los movimientos de iniciación que no se conducen naturalmente pero que responden a un aviso, comiencen dando información. La función del lenguaje de dar es, por lo tanto, responder al estímulo fomentado por las preguntas de la actividad.

La preferencia por comunicar hechos es frecuente en las actividades relacionadas con el contenido académico (3). La actividad de discusión del tema de la ciencia (STA), relacionada con un tema de la ciencia (adaptación de animales y plantas), exigió hechos frecuentes (véanse los apéndices 3 y 4). Esto fue también el caso en la actividad de resolución de problemas (PSA) donde también se exigieron hechos, ya que los estudiantes tenían que elegir una opción entre 4 o 6 (ver apéndices 6 y 7). El uso frecuente de los hechos en las aulas CLIL ha sido reportado en estudios anteriores. Dalton-Puffer (2007) y Pascual Peña (2010) muestran en sus análisis de las preguntas de los docentes que las preguntas para pedir hechos son los más abundantes (63-88%). Ambos estudios también ponen de relieve la abundancia de las respuestas breves de los estudiantes al responder. Este estudio también confirma los hallazgos expuestos en un tipo diferente de entorno interactivo (trabajo en grupo) y en un nivel educativo diferente (primaria).

La segunda preferencia en las discusiones de grupo CLIL analizadas en relación con el nivel cognitivo fueron las evaluaciones. Así los alumnos demostraron estar comprometidos con las contribuciones de los demás dentro de las actividades. **Las evaluaciones de los alumnos de CLIL hicieron que los miembros del grupo participaran activamente en la actividad los convirtieron en participantes activos en la discusión sobre el contenido mencionado (4).** Como afirman Llinares y Morton (2016) "usar los recursos del lenguaje para adoptar una postura es fundamental para ser un miembro reconocido de una comunidad académica" (2016: 2). Por lo tanto, el uso de esta función cognitiva del discurso es clave para la apropiación de los estudiantes del conocimiento.

Cuando los estudiantes de CLIL responden unos a otros en sus grupos, los resultados han demostrado que tienden a apoyarse mutuamente. Las respuestas de apoyo tienden a presentarse como hechos y a menudo también a través de acuerdos. **El interés por terminar la tarea podría ser la causa del predominio del apoyo (5)**, ya que la ayuda favorece el acuerdo y el acuerdo es necesario para completar la pregunta o tema discutido y pasar a la siguiente. En otras palabras, el propósito de las actividades de trabajo grupal, con el objetivo de completar una tarea, podría explicar el alto uso de los hechos en forma de apoyo.

Los hallazgos también demuestran que enfrentarse a las respuestas está muy por detrás de las respuestas de apoyo en las discusiones de grupo de los estudiantes de CLIL. Cuando se usó esta función del lenguaje, se hizo sobre todo en forma de desacuerdo. Curiosamente, estos fueron a menudo seguidos por una prolongación de las explicaciones, desató más confrontaciones que apoyos. Parece, entonces, que los estudiantes necesitan justificar sus respuestas cuando se enfrentan y tal vez no tanto al apoyarse unos a otros. Es, por lo tanto, una manera constructiva de construir un acuerdo. **Las conclusiones sobre el uso frecuente de explicaciones al prolongar confirman la intención de hacer declaraciones defendibles y convincentes para los otros, sobre todo después de los desacuerdos. (6)** Uno de los descriptores que utiliza Barnes (1977) para la conversación exploratoria, y en oposición a la conversación acumulativa, es el uso de explicaciones. Como se señaló en el capítulo 3, sección 3.3.2, Mercer y Wegerif (por ejemplo Mercer, 1995, Wegerif y Mercer, 1996, Wegerif y Scrimshaw, 1997), después del trabajo de Douglas Barnes (1976), identifican tres tipos de conversación: exploratoria, acumulativa y disputacional. La charla exploratoria se caracteriza por un compromiso crítico pero constructivo de los participantes con sus ideas. Ellos lo ejemplifican diciendo que en este tipo de charlas se ofrecen sugerencias para consideración conjuntamente (hechos que apoyan) y éstas pueden ser desafiadas y contrarrestadas (confrontación, desacuerdos), pero cuando alguien se opone luego se explica (prolongaciones en forma de explicaciones) y se ofrecen hipótesis alternativas. A su vez, las opiniones y las ideas acumuladas se exponen sin argumentar (hechos, evaluaciones sin prolongar movimientos) o explicando las razones para exponerlas (falta de explicaciones y frecuentes acuerdos sin prolongar movimientos) y cada

participante tiene la intención de complacer al resto o por lo menos evitar la confrontación. Por lo tanto, **la presencia de movimientos de apoyo y explicaciones después de los desacuerdos son evidencia de la participación de los estudiantes CLIL en la conversación exploratoria mientras trabajan en grupo (7)**. Como señalaron Mercer et al. (1999) y Rojas-Drummod et al. (2003), una de las características lingüísticas clave de la conversación exploratoria es el uso de "porque" por los estudiantes para expresar el razonamiento. En el presente estudio, este uso de 'porque' fue etiquetado bajo la categoría explicaciones. Además, en esta tesis también se tuvieron en cuenta otras explicaciones que cumplían el mismo objetivo sin 'porque'. **En contraste con los hallazgos en los niveles discursivo y cognitivo, los resultados de la capa interactiva no parecen confirmar el patrón colaborativo de interacción esperado en un grupo que parece usar conversación exploratoria (8)**. Los grupos CLIL analizados revelan un tipo de interacción donde el **patrón más común es el predominio de uno de los miembros como experto y la inexperiencia y falta de participación de los otros dos miembros. En el modelo de Storch de interacción diádica (2002), este sería un patrón interactivo experto / novato (9)**. Dos grupos fueron clasificados como promotores de igualdad en la distribución de turnos y control de la actividad; Sin embargo, las comparaciones adicionales en un análisis más en profundidad de las dos actividades de forma independiente (STA y PSA) ponen en duda estos primeros resultados. Por otra parte, el análisis cualitativo de los factores de mutualidad mostró una tendencia a la mutualidad presente en la retroalimentación utilizada por los alumnos de CLIL, instanciada por el uso frecuente de evaluaciones en el análisis del nivel de conocimiento. En el estudio de Storch (2002), los dos patrones diádicos que se presentaron como favorecedores del aprendizaje L2 más eficaz fueron el patrón de colaboración y el patrón experto / novato. Siendo así, el hecho de que los grupos CLIL se hayan caracterizado como experto / novato parece positivo y se espera que fomente un aprendizaje efectivo. Sin embargo, la colaboración es el patrón deseado si queremos fomentar una distribución equitativa de los roles dentro del grupo. En este sentido, los resultados después de la intervención parecían indicar que los grupos estaban en el camino de un modelo de interacción más colaborativo. En la siguiente sección, se discutirán los resultados de la co-construcción de conocimiento por parte de los estudiantes de L1.

2.3.2 Co-construcción del conocimiento en el trabajo de grupo L1

En lo que se refiere a RQ1 (¿Cómo se construye el conocimiento en las actividades de trabajo en grupo L1?) y de manera similar al grupo CLIL, los hallazgos L1 presentados en el capítulo 6 muestran el predominio de las funciones de iniciación dando hechos. Este modo de iniciación no es, evidentemente, exclusivo de CLIL y está relacionado con las demandas de las actividades STA y PSA.

Las evaluaciones son también la segunda opción preferida para los grupos L1 y, como se ha indicado anteriormente, esto implica un cierto nivel de compromiso de los estudiantes en la actividad. En el grupo L1, estas evaluaciones se realizan en su mayor parte en forma de demandas, lo que representa un movimiento hacia la participación de otros en la actividad en curso (11). Su presencia señala mutualidad en los grupos.

Las respuestas de los estudiantes de L1 después del turno de otro miembro tienden a ser de apoyo. Los hechos vinculados a un apoyo son el tipo de conocimiento utilizado principalmente después de un acuerdo. Estas opciones de lenguaje y contenido, de manera similar a lo que se describió acerca del grupo CLIL, podrían ser causadas por las indicaciones en el STA y el PSA, que suscitan respuestas como hechos. El interés en completar la tarea favorece el uso del apoyo, lo que lleva a un acuerdo, y cuando hay acuerdo se pasa a la siguiente pregunta.

Los alumnos de L1 usan muchas menos las respuestas de confrontación que las respuestas de apoyo, como se muestra en el capítulo 6. Sin embargo, y como en CLIL, esta función del lenguaje se usa sobretodo en forma de desacuerdo. El desacuerdo también está conectado con prolongar la explicación de la misma manera que se explicó para CLIL. Las explicaciones, que son rasgos definatorios de la conversación exploratoria, no sólo fueron usadas para justificar desacuerdos. En el programa de intervención TT, las reglas básicas para la conversación que los niños tuvieron que desarrollar incluyen dar razones para justificar sus respuestas (para el programa completo de TT, véase el apéndice 11, para las reglas básicas desarrolladas por el CLIL y el grupo L1 ver apéndices 12 y 13). Como se indicó anteriormente en

referencia al grupo CLIL, varios investigadores consideran que las explicaciones son características de la presencia de la conversación exploratoria (Mercer et al., 1999, Rojas-Drummod et al., 2003).

A nivel interactivo, ninguno de los grupos L1 mostró igualdad en ambos factores de igualdad (distribución de turnos y control de la actividad). Por lo tanto, los resultados en los grupos L1 han presentado un escenario donde **el patrón más común es el predominio de dos de los miembros y la pasividad del otro miembro que en el modelo Storch de interacción diádica (2002) representaría un patrón dominante / pasivo con ambos Baja igualdad y baja mutualidad (12)**. Dado que no se encontró igualdad, no se realizó ningún análisis cualitativo en estos grupos. Sin embargo, el predominio del apoyo a nivel discursivo y el uso de hechos de apoyo a nivel cognitivo, evidencian un interés en llegar a un acuerdo que podría ser descriptivo de un patrón de interacción dominante / pasivo. La falta de experiencia en el trabajo grupal no podía justificar tal falta de igualdad y mutualidad, ya que el colegio L1 que participó en este estudio utiliza el trabajo grupal con frecuencia en el aula, especialmente en la asignatura de ciencias, donde su currículo se basa principalmente en el aprendizaje basado en proyectos. Algunos autores (Jadallah 2000, Maybin 1994, Rojas-Drummond et al., 2003) han declarado que el hecho de participar en muchas actividades grupales o trabajar con sus compañeros a menudo no implica una co-construcción del conocimiento. Como Rojas-Drummond et al. (2003), no basta con que los estudiantes interactúen para que construyan conocimiento relevante (2003: 655). A la luz de los resultados de este estudio, parece evidente que este es el caso en los grupos L1 analizados.

2.3.3 Comparación de la co-construcción de conocimiento entre grupos (CLIL y L1)

En respuesta a RQ2. (¿Hay diferencias en los tres niveles (1.1, 1.2, 1.3) anteriores entre CLIL y grupos paralelos que trabajan en las mismas actividades en la L1? Si es así, ¿cuáles son?) En esta sección se presenta una discusión de los hallazgos comparativos obtenidos entre grupos (CLIL y L1).

Se observaron dos factores interesantes en la comparación de los grupos. En CLIL, hubo un porcentaje más alto de réplicas y de movimientos de reacción en general en comparación con los grupos L1. A su vez, en la L1, se observó un uso más frecuente de monitor y movimientos continuos en comparación con el grupo CLIL. Esto implica que ambos grupos se preocupan por el estado de la interacción comunicativa. En L1, la tendencia es utilizar las solicitudes de aclaración para comprobar si el resto está siguiendo (monitor), mientras que en CLIL estas demandas de clarificación se centran en comprobar si el oyente ha entendido correctamente (reajuste).

Como se sugirió anteriormente en el capítulo 6, esta diferencia podría estar relacionada con el uso de su L1 o L2, respectivamente. Parece comprensible que los alumnos de L1 estén más preocupados por comprobar que sus compañeros están prestando atención a lo que dicen en lugar de comprobar la comprensión, como es el caso en los grupos CLIL. Los alumnos de L1 no manifiestan problemas con la lengua (es su L1) saben que todos los miembros entienden lo que se dice. Por lo tanto, las comprobaciones utilizadas tienen el propósito de confirmar que los demás miembros están escuchando activamente y no están distraídos. Los alumnos de CLIL, sin embargo, como están usando su L2, pueden considerar el idioma una barrera. Los estudiantes de CLIL en el estudio a menudo comprueban si el mensaje ha sido entendido en lugar de si el resto de los miembros del grupo están escuchando. Este hecho puede vincularse a los hallazgos sobre la presencia de demandas con un objetivo metalingüístico en los grupos CLIL. En resumen, la diferencia en el uso frecuente de la pista de la duplica y de los hechos exigentes (con un propósito metalingüístico) en los grupos CLIL en comparación con los grupos L1 puede explicarse en relación con la actividad que tiene lugar en L1 o L2. **Los grupos L2 CLIL estaban más preocupados por la comprensión, mientras que los grupos L1 estaban más preocupados por el estado del canal de comunicación o por los factores de escucha (13).** Los hallazgos en el capítulo 6 han mostrado que aunque ambos grupos usan mucho los hechos, el uso de las explicaciones en el L1 en comparación con el grupo CLIL es considerablemente mayor. Sin embargo, predominan más las evaluaciones en la clase CLIL en comparación con el L1. Los estudiantes de L1 usan explicaciones para prolongar (normalmente después de

estar en desacuerdo) o respuestas de apoyo a algún miembro. Por otro lado, Los miembros del grupo CLIL prefieren hacer evaluaciones al iniciar sus turnos.

El mayor uso de las explicaciones en la L1 podría estar vinculado a la competencia lingüística que los estudiantes tienen en su lengua materna, lo que facilita su capacidad de explicar, especialmente en turnos largos tales como como los implicados en prolongar-explicaciones. Aunque ambos grupos tienden a justificar la confrontación a través de explicaciones, los estudiantes de L1 utilizan explicaciones de prolongación y explicaciones de apoyo más que sus compañeros de CLIL. A su vez, la evaluación, que comunica un alto nivel de compromiso, fue utilizada con mayor frecuencia por los estudiantes de CLIL que por sus compañeros L1. En un análisis más cualitativo se vio que los estudiantes de CLIL a menudo inician sus evaluaciones usando la expresión "I Think". De hecho, de los 284 que hicieron evaluaciones en todos los datos, 212 (74,6%) fueron realizados por estudiantes de CLIL. De estos 212, 161 (76%) fueron con la expresión "I think", mientras que el resto fueron en su mayoría usos de yo sé o evaluaciones de la dificultad de la actividad (ver apéndice 19 para resultados detallados). **El alto uso de "I Think" en el grupo CLIL podría interpretarse como una característica de la cobertura en inglés (14).** Por lo tanto, se podría argumentar que en los contextos académicos de lengua inglesa L2, el lenguaje se utiliza a menudo de manera tentativa, con precaución, midiendo el nivel de certeza transmitida. En el aula de L2, este tipo de cobertura puede ser visto como característica, ya que a menudo es enseñado por los profesores como una forma de comunicarse en la clase. Los maestros a menudo piden a los estudiantes que construyan frases completas usando "Pienso". Los maestros de inglés y CLIL a menudo también les dicen a sus alumnos que pregunten a los demás miembros del grupo lo que piensan. Sin embargo, este tipo de construcción de oraciones no suele ser frecuente en la lengua, ni siquiera en contextos académicos. Tampoco se usa como estructura a repetir junto a una oración completa. En a L1 había pocos ejemplos encontrados de expresiones como "creo" o "yo creo" (72 en total). Las encuestas también revelaron que el grupo CLIL estaba más centrado en el contenido que el grupo L1, ya que los estudiantes de CLIL mostraron una mayor Participación en el registro de instrucción. A su vez, los estudiantes de L1 se desviaron del tema de la tarea más frecuentemente al usar charla social y dedicarse po a los aspectos organizativos de la tarea, como lo

demuestra su mayor uso del registro regulador. En el nivel interaccional, hubo una mayor presencia de desigualdad en los grupos L1 en comparación con los grupos CLIL en lo que se refiere a la distribución de turnos. Los hallazgos también han mostrado un mayor nivel de igualdad en los grupos CLIL en lo que se refiere a la distribución del registro regulativo. Al reunir los resultados de la capa de conocimiento y el nivel interaccional, parece que los grupos L1 encuentran más fácil desviarse del tema en cuestión y dedicar más tiempo a organizar las actividades (mayor uso del registro regulativo); Sin embargo, este comportamiento está predominantemente dominado por un miembro. **Estos resultados conectados vuelven a introducir la idea de que los grupos L1 son menos eficientes en tareas de trabajo en grupo (15).** Algunos autores han escrito sobre la presencia de un tipo de metodología más variada en la clase CLIL. Por otra parte, algunos han escrito que las maneras más tradicionales de enseñar, es decir, el predominio de las clases magistrales en oposición a la presencia de actividades de grupo y de trabajo en pareja, están menos presentes en las aulas de CLIL (Coyle et al. Baetens Beardsmore (2009) sugiere que la metodología CLIL y su enfoque integrado han traído cambios considerables en la práctica general de la enseñanza, particularmente en disminuir el papel de la enseñanza frontal y estimular el trabajo en grupo interactivo (2009: 210-211). Como se mencionó anteriormente, en el presente estudio, la clase L1 tiene un currículo de ciencia basado en proyectos donde el trabajo en grupo es la principal metodología utilizada. Sin embargo, podría ser el caso que aún así, están menos acostumbrados a esta metodología que la clase CLIL.

2.3.4 Comparación de la co-construcción del conocimiento a través de las actividades (STA y PSA)

En cuanto a RQ3. (¿Existen diferencias en las tres capas (1.1, 1.2, 1.3) anteriores cuando los estudiantes en los grupos CLIL y L1 participan en una discusión de temas científicos y en una discusión para resolver problemas?), Los resultados comparativos obtenidos a través de las actividades (STA y PSA) se discutirán en esta sección.

Las conclusiones del capítulo 6 presentan varias diferencias entre las actividades. Una de las diferencias más reveladoras se encontró en las iniciaciones. En la actividad de discusión (STA), los estudiantes en su mayoría se inician mediante demandas mientras que en la actividad de resolución de problemas (PSA) lo hacen en su mayoría, aportando hechos. El interés en las investigaciones metalingüísticas (especialmente en CLIL) ha demostrado estar muy relacionado con el uso de demandas en ambas clases en el STA. Además, **se ha argumentado que la formulación de las preguntas escritas favorece que se formulen otras preguntas en la STA. En esta actividad, los alumnos repitieron partes de las reformularon con sus palabras (16)**. A su vez, En el caso de la actividad de PSA, ya que cada ítem se presentó con un estímulo visual y hubo opciones como respuestas posibles, la tendencia al iniciar fue que los alumnos dieran hechos.

Los hallazgos también han mostrado cómo en el PSA hubo un uso más frecuente del registro de instrucción. A su vez, los resultados han revelado un mayor uso de la charla social y el registro regulativo en el STA en comparación con el PSA. Estos resultados ilustran las diferencias generadas por el tipo de actividades. La actividad de resolución de problemas (PSA), parecía mantener a los estudiantes más centrados en la tarea que la STA, como se muestra en su mayor participación en el registro de instrucción. Tal vez la novedad del contenido discutido en el PSA llevó a los estudiantes a prestar más atención a esta actividad. Este hecho podría tener implicaciones interesantes cuando se considera el diseño de las actividades de clase. **Por lo tanto, este estudio ha demostrado que diferentes tipos de actividad desencadenan y capacitan diferentes capacidades de aprendizaje y registros (17)**. En la comparación entre el STA y el PSA destaca la importancia de un uso variado de las actividades en el aula.

Los hallazgos a nivel interactivo han presentado un patrón de distribución de turnos de habla muy diferentes dependiendo de la actividad. La mayoría de los grupos (L1a5, L1b5, Clilb4 y L1a4) muestran diferentes comportamientos de interacción relacionados con la distribución de turnos al realizar una actividad (STA) o la otra (PSA). De esta manera, los resultados a través de las actividades han introducido nuevos candidatos a la igualdad en términos de distribución de turnos. Sin embargo,

también ha cuestionado los resultados de otros grupos. En suma, los resultados de la igualdad y la mutualidad entre las actividades no variaron los resultados finales previamente reconocidos en los resultados descriptivos que englobaban las dos actividades. Esto se debió a que la desigualdad encontrada en los antiguos grupos categorizados como igualados igualdad fue compensada por los nuevos candidatos a la igualdad. Por lo tanto, al final, la proporción de grupos de desiguales persistió, aunque la igualdad en términos de distribución de turnos cambió dependiendo de las actividades. Así, los pequeños grupos individuales sí cambiaron la forma en que interactuaron, pero los resultados generales con todos los grupos juntos no variaron.

Es interesante destacar que el tipo de actividad parece afectar no sólo el lenguaje y el enfoque de los contenidos utilizados por los estudiantes, sino también los papeles en la interacción que estos estudiantes tienen cuando trabajan en grupos (18). Esto ratifica el argumento de los autores que afirman que los roles y las identidades (Goffman, 1981; Wells, 1999) y, en este caso, la interacción grupal, pueden influir en el aprendizaje. En este estudio, se podría esperar que el mismo grupo tuviera una interacción similar incluso entre las actividades, ya que son los mismos individuos y se ocupan de una actividad de grupo realizada en el mismo ambiente de clase. Sin embargo, los resultados han demostrado lo contrario. Estos resultados validan la importancia de analizar el nivel interaccional en la co-construcción del conocimiento y parecen demostrar que los estilos interaccionales influyen en la participación, lo que necesariamente afecta no sólo al aprendizaje de L2 sino al aprendizaje en general.

2.4 Parte 2 del estudio: Resolución de problemas y co-construcción de conocimientos después del Programa de Intervención TT

En esta sección, discutiremos las respuestas a las siguientes preguntas de investigación:

PARTE 2

RQ4. ¿Cómo resuelven problemas en la prueba de los Ravens de matrices progresivas los grupos CLIL y L1?

RQ4.1 ¿Existe alguna diferencia entre los grupos CLIL y L1 experimentales (CLILA vs L1A) antes y después de la intervención? Si es así, ¿cuáles son?

RQ4.2 ¿Existe alguna diferencia entre los grupos CLIL y L1 de control y CLILA (CLILA vs CLILB y L1A vs L1B)? Si es así, ¿cuáles son?

RQ4.3 ¿Existe alguna diferencia entre el grupo experimental CLIL y el grupo experimental L1 (CLILA y L1A) después de la intervención ¿norte? Si es así, ¿cuáles son?

RQ5. ¿Cómo se co-construye el conocimiento en el grupo experimental CLIL (CLILA) antes y después de la intervención?

RQ5.1 ¿Existen diferencias en comparación con el grupo experimental L1 (L1A)? En caso afirmativo, ¿cuáles son?

RQ5.2 ¿Existen diferencias entre las dos actividades (PSA después de la intervención y STA)? En caso afirmativo, ¿cuáles son?

Un resumen de los hallazgos relacionados con estas preguntas de investigación se presentará al final del capítulo (ver figura 8.2). La discusión en esta sección se centra en los resultados obtenidos después de la aplicación del programa de intervención Thinking Together, centrándose en los siguientes temas:

- Los resultados del razonamiento de post y post group en los grupos experimentales L1 y CLIL (RQ 4.1)
- La comparación de los resultados de razonamiento grupal entre grupos (experimental versus grupos de control, RQ 4.1 y CLIL experimental vs L1 experimental RQ 4.2)

- Co-construcción del conocimiento después del programa de intervención TT en un grupo CLIL. (RQ 5) • Comparación de la co-construcción de conocimiento a través de dos grupos (CLILa3 y L1a4, RQ 5.1) y entre las actividades (PSA y STA, RQ 5.2)

Estas cuatro secciones discuten los resultados de las preguntas de investigación 4 y 5 para la segunda parte del estudio. 8.4.1 El razonamiento de grupo durante la resolución de problemas en CLIL y L1 antes y después del programa de intervención TT En relación con RQ4 (¿Cómo los grupos CLIL y L1 resuelven problemas en la prueba de Ravens de matrices progresivas?) El análisis de razonamiento de grupo fue medido por el RPMT. Su objetivo era evaluar las mejoras que el programa de intervención TT había tenido sobre el razonamiento abstracto del grupo y, por lo tanto, se realizó antes y después del programa de intervención TT. También intentó reflejar otros estudios experimentales similares (Mercer et al., 1999, Rojas-Drummond et al., 2003) en un contexto L1.. Los hallazgos del capítulo 7 han presentado una mejora en más de la mitad (55%) de los grupos experimentales del CLILA en sus resultados de razonamiento de grupo (RPMT) de T1 (antes de la intervención) a T2 (después de la intervención) y un paralelo, aunque ligeramente inferior, Mejoría en la mitad (50%) de los grupos experimentales L1a de T1 a T2 (RQ4.1 y 4.3). La similitud entre los resultados de CLILB (grupo control) en T2 y los de CLILB (grupo experimental) en T1 han confirmado el impacto del programa de intervención en el incremento de la puntuación de CLILA. Por el contrario, en el grupo experimental L1a, existen variables que han influido en el resultado. Una podría ser el hecho que L1B tuviera muy buenos resultados en el T1. De esta manera, se cuestiona la mejora del grupo experimental L1a de T1 a T2 cuando se compara con el grupo de control L1b. Por estos considerarse con cautela tom (RQ 4.2). Los hallazgos también confirman la mejora en el razonamiento conjunto después del programa de intervención TT que también se encontró en los estudios experimentales de Mercer (1999) y Rojas-Drummond (2003). Sin embargo, se debe tener en cuenta que el rango de mejoría en las puntuaciones en RTPM de CLIL (un promedio de 2.6: de 46.6 a 49.2) y en L1 (un promedio de 1: de 47.75 a 48.75) en este estudio es inferior al observado por Mercer et al. (1999) y Rojas Drummond et al. (2003). En Mercer et al. los autores presentan un cambio en las puntuaciones de 41,43 a 45,58, una diferencia media de 4,05

(1999: 107) en el grupo experimental, y de 42,72 a 44,08, con una diferencia media de 1,36 en el grupo control. En Rojas-Drummod et al (2003), que usó una versión más corta de la RTPM, se observó un cambio en la puntuación media de 20.5 a 24.2, una diferencia promedio de 3.7 en el grupo experimental. Sin embargo, en el grupo de control, se mostró una diferencia de 20 a 20,8, por lo tanto un aumento medio de 0,8. La razón del menor aumento observado en el presente estudio podría ser la estricta implementación que se ha tenido que seguir, debido a las limitaciones de L2 que implicaban la simplificación y reducción de la duración del programa. De hecho, la versión adaptada del programa TT utilizado para este estudio redujo las 16 lecciones originales del programa a 10 lecciones. Por otra parte, mientras que el programa realizado por Mercer et al. (1999) tuvo lugar durante 10 semanas, aproximadamente 2 meses y medio, en este estudio el programa tuvo que desarrollarse durante 4-5 meses (16-20 semanas). Esta duración fue similar a la del estudio de Rojas-Drummod et al. (2003), donde el programa duró 5 meses y se llevó a cabo en 10 sesiones. En cualquier caso, en el presente estudio, el hecho de que **los resultados en CLIL han demostrado un mayor aumento de la puntuación en más grupos que en el L1 muestra que el trabajo en grupos en un L2, lejos de ser un problema para desarrollar el razonamiento en grupos, podría ser incluso una ventaja. Por lo tanto, este tema abre la puerta para el trabajo sobre la mejora del razonamiento conjunto y la discusión en el aula en el L2 y especialmente dentro del contexto CLIL (19).**

2.4.1 Co-construcción del Conocimiento en CLIL antes y después del programa de intervención TT

En respuesta a RQ5. (¿Cómo se co-construye el conocimiento en el grupo experimental CLIL (CLILA) antes y después de la intervención?), El grupo seleccionado utilizó para analizar cómo se construye el conocimiento en la comparación antes y después del programa de intervención TT como Mercer et al. (1999) hicieron en su estudio, uno de los grupos que mostraron un mayor incremento en la puntuación. El grupo que mostró la mayor diferencia fue Clila7 (de una puntuación de 47 en T1 obtuvieron una puntuación de 51 en T2); Sin

embargo, un problema con el audio en T2 hizo imposible analizar el grupo en detalle y, por tanto, Clila3 (con un aumento de 3 puntos, de 43 en T1 a 46 en T2) fue elegido al azar entre otros que habían obtenido el mismo (Clila4 y Clila6). Los hallazgos en Clila3 (ver capítulo 7) mostraron cómo la intervención incrementó el uso de las evaluaciones por parte de los alumnos (especialmente en los movimientos iniciales) y las explicaciones (en la prolongación de los movimientos). Este último incremento contribuyó a la producción de turnos más largos. El uso de construcciones como 'I think' en las evaluaciones y el uso de 'porque' en las explicaciones se observaron en estos hallazgos. Estos resultados son similares que mostró por Mercer et al. (1999). En su estudio, Mercer et al. Identificar el uso de trozos como pienso y porque y vueltas más largas (1999: 105) como rasgos lingüísticos clave de la charla exploratoria. Declaran que el aumento en el uso de estas características lingüísticas promovidas por la intervención TT también resulta en mejores puntuacionamientos en el RPMT y, por supuesto, en un uso más frecuente de la charla exploratoria. **Expresiones como 'I think' y 'because' y el aumento en la prolongación de turnos son rasgos promovidos por el programa de intervención TT, y este estudio también ratifica la eficiencia del programa TT en la promoción de estas características lingüísticas clave en CLIL e identificadas por Mercer et al. (1999) como características de la conversación exploratoria (20).** Además, y desde la perspectiva de este estudio, el programa TT podría ser, si se desarrolla y mejora, un ámbito muy enriquecedor para los entornos CLIL. Esto sería especialmente así teniendo en cuenta la preocupación CLIL sobre el uso del idioma, que se alinea con el objetivo de llevar la charla exploratoria en el aula CLIL. Como Moate (2010) afirma: "La cultura interactiva y estructurada que rodea a ET (Exploratory Talk) claramente representa un tipo diferente de ambiente de clase compatible con la participación activa fomentada en CLIL" (2010: 42). Los hallazgos en el nivel interactivo en el grupo Clila3 después del programa de intervención TT han presentado resultados contradictorios en factores de igualdad y mutualidad. Debe señalarse que los autores que desarrollaron el programa TT (Dawes et al., 2004) propusieron recursos lingüísticos dentro de las reglas básicas para promover una dinámica de grupo colaborativa. Las características lingüísticas de este estudio parecieron lograrse

incluso en la estricta implementación de la versión de este estudio del programa TT. **Sin embargo, los aspectos interaccionales construidos sobre una forma exploratoria de hablar, que representan un patrón de interacción colaborativo, parecen estar en proceso (21).** Merece la pena destacar que estudios como los mencionados anteriormente (Mercer et al., 1999 y Rojas-Drummond et al., 2003), que fueron los primeros poner en práctica este programa, y otros estudios más recientes como Hannessy et al. (2016), que propone un modelo analítico más complejo para analizar el discurso en el aula, dejan el nivel interactivo del trabajo de grupo fuera de la ecuación de la charla exploratoria. **Este estudio ha presentado resultados que justifican la necesidad e importancia de este patrón de interacción en las actividades de trabajo en grupo. La influencia de los patrones de interacción en el discurso y el nivel de conocimiento ha sido demostrada por este estudio (22).**

8.4.3 Comparación de la co-construcción de conocimientos a través de dos grupos (CLILa3 y L1a4) En cuanto a RQ5.1 (¿Existen diferencias en comparación con el grupo experimental L1 (L1A)? En caso afirmativo, ¿cuáles son?), En los hallazgos Relacionado con la comparación entre grupos, el Clila3 se comparó con un grupo paralelo en el L1, L1a4. Los resultados mostraron que aparte de un aumento en el uso de réplicas y cambios menores en aspectos de mutualidad (como el compromiso con el contenido de la actividad y la preocupación en la participación de todos los miembros del grupo), el programa de intervención TT no parecía aportar ninguna otra Mejoras paralelas a los grupos. De hecho, más diferencias entre ambos grupos fueron reconocidas después de la intervención. Esto llevó a considerar el hecho de que, aunque ambas clases habían desarrollado el mismo programa de intervención, los diferentes estilos de enseñanza de los dos profesores y las formas de desarrollar el programa TT en clase podrían ser la causa de las diferencias. Esto también podría ser la causa de la falta de mejora en la presencia de la charla exploratoria en los grupos L1 en T2. El programa TT enfatiza la importancia de desarrollar las reglas básicas con los estudiantes, ya que son el principal ancla del mismo así como la forma de impulsar a los estudiantes en el uso de la conversación exploratoria. En palabras

de Dawes, Wegerif y Mercer: "Si se siguen estas reglas básicas, está asegurado el uso de la conversación exploratoria por parte de los niños " (2004: 3). De hecho, en este libro se hace hincapié en que el éxito del programa depende de que los profesores "asuman un papel de liderazgo en la orientación del desarrollo del uso y comprensión del lenguaje de los niños" (Dawes, Wegerif y Mercer, 2004: 6). Una de las estrategias para lograr este propósito consiste en recordar a los estudiantes que usen las "reglas básicas para hablar". En nuestro estudio, la profesora de L1A no se centró particularmente en este aspecto. **La ausencia de esta estrategia de enseñanza por parte de la profesora de L1A es, por tanto, la causa más plausible de la falta de mejoría observada después del programa de intervención TT en el grupo L1A. En oposición, el grupo CLILA mostró una importante mejora impulsada hacia la conversación exploratoria. Este cambio fue liderado por una profesora que siguió la estrategia de enseñanza "reglas básicas para hablar" propuesta por el programa TT (23) .**

2.4.2 Comparación de la co-construcción de conocimiento a través de las actividades (PSA después de la intervención y STA)

En relación con RQ5 .2 (¿Existen diferencias entre las dos actividades (PSA después de la intervención y STA) y, de ser así, ¿cuáles son?) Los hallazgos en el capítulo 7 mostraron que el programa de intervención Thinking Together no presentó nuevas características distintivas en el grupo Clila3 a través de las actividades (PSA y STA) en comparación con las hayadas en todo el grupo CLIL (presentado en el capítulo 6). Sin embargo, los resultados revelaron una mayor diferencia en las categorías que ya habían sido reconocidas como diferenciadoras en los resultados de toda la clase (capítulo 6). Las categorías que aumentaron su diferencia en el PSA T2 en comparación con el STA fueron: los movimientos en desacuerdo, los de reajuste, los turnos más largos a través de un aumento de la prolongación de los movimientos en general, pero prolongando las explicaciones y evaluaciones en concreto. Estas diferencias están

relacionadas con la conversación exploratoria, ya que representan la necesidad de justificar lo que se dice (prolongar las explicaciones) y el compromiso en lo que se comunica (prolongar las evaluaciones). Las explicaciones y las evaluaciones son características de la conversación exploratoria, definida como compromiso crítico pero constructivo de los participantes con las ideas del otro. El incremento en el uso de la conversación exploratoria dentro del grupo ratifica la eficiencia del programa al hacer que los estudiantes usen turnos más largos y elaborar sus posiciones con movimientos de prolongación principalmente después de estar en desacuerdo. **Los resultados indicados van en consonancia con el punto anterior, en el que se afirma que los elementos discursivos y de conocimiento de la conversación exploratoria se desarrollan después del programa de intervención TT (24).** El aumento de los reajustes puede estar relacionado con la preocupación por la comprensión, que se ha observado particularmente en el contexto L2 CLIL. **A medida que los grupos avanzan hacia la conversación exploratoria, es probable que esta preocupación crezca en respuesta al interés conjunto del grupo en tener igualdad en la conversación (25).** Respecto a la capa interaccional, y como se indica en la sección del capítulo 7, Clila3 fueron sesgadas por una discusión entre dos miembros del grupo en el STA. La discusión sostenida por dos miembros del grupo (Alicia, estudiante 1, y Saúl, estudiante 3) influyó fuertemente en los resultados de igualdad referidos a la distribución de turnos en el STA. Debido a este hecho, tanto en la comparación STA PSA T1 como en el STA PSA T2 resultados parecen ser contradictorios. Por lo tanto, no se puede hacer referencia a este punto.

2.5 Aplicaciones para la investigación

En la presente tesis, existen dos aplicaciones principales de investigación:

- El enfoque principal de las aplicaciones de investigación presentadas en este estudio es el modelo analítico multifuncional. Una versión anterior de este modelo fue presentada y usada en un estudio previo (Pastrana, Llinares y Pascual próximamente). En esta tesis, el discurso y el nivel cognitivo han sido desarrollados y el nivel interactivo ha sido agregado. Algunos puntos de

discusión han enfatizado la importancia del nivel interactivo para la comprensión de las oportunidades de aprendizaje integrado de contenido y lengua en las discusiones de trabajo en grupo analizadas. Este modelo sería muy útil para los estudios de investigación sobre las oportunidades de aprendizaje en las discusiones de grupos de trabajo en los contextos CLIL, L1 y L2, en diferentes materias y niveles educativos. El modelo es especialmente adecuado para los ajustes de CLIL ya que su concepción de múltiples niveles permite el análisis desde una perspectiva integrada de contenido e idioma. Además, tiene en cuenta elementos interactivos que han demostrado ser muy influyentes en diversas actividades educativas, tanto a nivel lingüístico como cognitivo. Además, este modelo podría utilizarse en cualquier trabajo que investigue los tipos de conversación en el aula, ya que ayuda a dar una visión muy detallada del tipo de charla utilizada especialmente por pequeños grupos que trabajan en una actividad oral.

- Otra aplicación de la investigación a la que ha contribuido la presente tesis es una metodología. Esta contribución se ha hecho en tres áreas principales. En primer lugar, hay muy pocos estudios que comparen L1 y CLIL (por ejemplo, Llinares y Whittaker, 2010; Pastrana, Llinares y Peña, en preparación) en la investigación SLA. Como se indica en el capítulo introductorio (sección 1.3), la mayoría de los estudios en SLA comparan CLIL con EFL. Por lo tanto, esta tesis hace una contribución metodológica a este escenario no investigado ya que propone una herramienta analítica que puede analizar y comparar todo tipo de configuraciones lingüísticas (L1 o L2) en las tres capas (discurso, conocimiento e interacción). En segundo lugar, la comparación de actividad de tipo agente similar que requiere diferentes habilidades de aprendizaje. El contraste entre la STA y el PSA presentó muchas diferencias en todos los niveles del modelo analítico (discursivo, cognitivo e interactivo) y planteó la necesidad de comparar no sólo las actividades con diferentes participantes (por ejemplo, la clase entera versus el trabajo grupal en Llinares y Pastrana, 2013), pero también, como ha planteado esta tesis, actividades que implican diferentes habilidades cognitivas (por ejemplo, STA vs. PSA). Finalmente, esta tesis ha combinado una parte analítica y una parte pedagógica. En la parte analítica se ha analizado el discurso del aula en tres capas diferentes. La parte pedagógica ha incluido, en primer

término, el diseño e implantación de un programa de intervención educativa. En el último trimestre, también ha evaluado dicho programa. La mayoría de los estudios tienden a centrarse en el análisis del discurso (por ejemplo, Dalton-Puffer, 2016, Moore, 2011) o en la implementación y evaluación de un modelo (por ejemplo, Mercer y otros, Rojas-Drummod et al., 2003). Sin embargo, esta tesis ha propuesto una nueva forma combinada de investigar combinando tanto un análisis del discurso como un modelo de implementación pedagógica.

2.6 Aplicaciones pedagógicas

Se pueden extraer diferentes aplicaciones pedagógicas de este estudio. Son las siguientes:

- Este estudio ha planteado cuánto del contenido académico del que se habla está relacionado con hechos, especialmente en el aula L1. Frecuentemente las actividades también se orientan principalmente hacia los hechos. Aunque el enfoque en los hechos es obviamente esperado (y necesario) en cualquier clase, este estudio propone orientar las actividades para fomentar una relación más atractiva con el contenido a través de la evaluación y la explicación. Esto también podría evitar la falta de interés en la actividad y la tendencia a completar una tarea grupal, sin aportar argumentaciones o individualmente. Todos estos aspectos subrayan la importancia de no limitarse a poner a los alumnos a debatir sobre un tema a través de diferentes preguntas, sino considerar cómo promover un uso variado del discurso en las actividades de grupo oral. Por otra parte, estas consideraciones pueden ayudar no sólo a hacer que los estudiantes usen conversaciones de calidad, sino también promover aspectos de mutualidad que ayudan a construir una interacción más colaborativa. El presente estudio ha demostrado que las interacciones colaborativas podrían desarrollarse siguiendo un programa similar al TT, como se ha propuesto esta tesis.
- El presente estudio también ha planteado la necesidad de centrarse en elementos interactivos, no sólo a expensas de los valores sociales, sino también porque estas interacciones tienen un efecto en los aspectos del discurso y del conocimiento. Los tipos de interacciones realizadas por los estudiantes están relacionados con tipos de conversación. Un patrón de interacción colaborativo es esencial para la conversación exploratoria. Dentro de la colaboración las características frecuentes

del discurso son por ejemplo: usar pienso, porque y también pedir a otros miembros para sus opiniones. La mejora después del programa TT no ha demostrado mucho avance en los patrones de interacción en el trabajo en grupo. Sin embargo, esta falta de mejora podría deberse al corto lapso de tiempo transcurrido entre la pre y la post prueba. Incluso en la contabilidad de este hecho, hay una necesidad de seguir trabajando en patrones de interacción colaborativos para desarrollar plenamente la verdadera conversación exploratoria colaborativa en el aula. Cualquier clase que tenga como objetivo hacer el trabajo de compañeros en clase debe tener en cuenta el nivel interaccional. Esto podría lograrse estableciendo una cultura de aula donde se recuerden constantemente los ideales de igualdad y mutualidad.

- Ciertos aspectos de la charla exploratoria parecen alinearse con la configuración CLIL. Sin embargo, estos aspectos mejoraron cualitativamente después del programa de intervención TT, como se discutió anteriormente en los puntos de discusión (ver 6, 7, 8, 22, 26). Estas mejoras también condujeron a mejores resultados cuando se trata de un problema de razonamiento conjunto (especialmente en CLIL). El programa TT adaptado podría aplicarse en aulas más CLIL para ayudar a mejorar las habilidades de razonamiento conjunto y la calidad de la charla de grupo en estas clases.

- Los resultados han puesto de manifiesto la necesidad de diversificar las actividades dentro del trabajo en grupo (tanto en L1 como en CLIL). Las dos actividades analizadas en este estudio han promovido diferentes tipos de movimientos del discurso y funciones del discurso cognitivo (ver puntos de discusión 18, 19, 20). El uso de diferentes tipos de actividades normalmente se STA en la clase. Sin embargo, este estudio ha planteado la necesidad de prestar especial atención, no sólo a los distintos tipos de actividad en términos de agentes (clase completa, individual, par o grupo de trabajo), o tipo de comunicación (oral o escrita), sino también en términos de las habilidades de aprendizaje promovidas por esas actividades (habilidades de razonamiento, habilidades argumentativas). Esta preocupación es pedagógica de la que los educadores son normalmente conscientes; Sin embargo, esta tesis ha demostrado sus efectos también en el nivel del discurso. En suma, el uso de actividades que fomenten diferentes habilidades de aprendizaje debe estar conectado con los objetivos del discurso cuando se programa una lección.

Al hacer esto, se garantiza el uso de una amplia gama de opciones discursivas dentro de la clase.

- Se planteó la importancia del papel de la estrategia pedagógica dirigida por el docente (ver punto 25). Este estudio subraya la necesidad de que los maestros brinden y obtengan retroalimentación constante, sugerencias y apoyo del investigador o desarrollador del programa al implementar un programa de intervención.
- Finalmente, el modelo analítico de múltiples capas propuesto por este estudio, también podría ayudar a promover la calidad de la charla estudiantil en el aula a través de charlas exploratorias. Podría hacerlo ayudando a dar un análisis en profundidad de los resultados logrados por los programas de intervención dirigidos a favorecer este tipo de charla en el aula. A partir de ahí, programas o partes de estos programas podrían ser re-adaptados y mejorar para ser de mayor servicio para profesores y estudiantes.

Las aplicaciones pedagógicas se presentaron en el capítulo introductorio (ver sección introductoria, sección 1.6) como una preocupación principal en la presente tesis. Como se indica en la introducción, El objetivo de este estudio fue utilizar una investigación en un contexto educativo como la presente tesis para proponer aplicaciones pedagógicas factibles. El programa de intervención se utilizó para determinar la aplicabilidad y el valor del programa TT. El segundo elemento es esta sección, que espera proporcionar ideas valiosas y prácticas para mejorar la enseñanza y el aprendizaje en el aula.

2.7 Limitaciones del estudio

Este estudio tiene una serie de limitaciones que el investigador conoce. Es con la idea de abordarlos en la investigación futura que son reconocidos. En primer lugar, como se mencionó en capítulos anteriores (capítulo 4), este estudio comprende sólo una parte del corpus recogido. De hecho, en un primer momento, estaba en mi intención profundizar en los resultados pre-post-prueba y comparar la co-construcción de conocimiento en los dos momentos con más de un grupo CLIL foco. De hecho, la intención original era utilizar tanto la STA como la actividad PSA en la post-prueba. Sin embargo, debido a las limitaciones de tiempo y la complejidad del

estudio, esta parte del corpus se dejó de lado. El investigador es consciente de que, para los criterios de comparabilidad, un único grupo CLIL de enfoque único (Clila3), no es representativo del posible cambio presente en todo el grupo CLIL experimental. Aun así, la idea de utilizar el modelo analítico de múltiples niveles en un solo grupo de trabajo pequeño fue motivada por la idea de dar una pista representativa de lo que podría encontrarse en todo el grupo CLIL en general. La segunda limitación, muy frecuente en todos los estudios en general, se refiere a la limitación del alcance del estudio. En esta dirección, debo añadir la falta de espacio y tiempo para explotar con mayor profundidad la comparabilidad previa y posterior a la prueba en la L1. La tercera limitación, que también se refiere a la segunda parte del presente estudio, se relaciona con el hecho de no poder reproducir por completo estudios previos hechos por Mercer et al. (1999) y Rojas-Drummod et al. (2003). En ambos estudios originales, la RTPM se administró tanto en grupos como individualmente. En el presente estudio, esto implicó pedir a las escuelas un tiempo adicional de investigación que no pudieron dar. Por lo tanto, el RTPM se realizó y evaluó sólo en grupos. Como una limitación adicional, la complejidad del modelo de tres niveles. El modelo fue diseñado, luego probado por varios investigadores y luego revisado entre los evaluadores. Las categorías confusas fueron mejoradas o eliminadas. Pero a pesar de que este proceso fue exhaustivo, los límites entre algunas categorías son difíciles de esbozar. Por ejemplo, y como se menciona en el capítulo 5, al analizar los datos, era una dificultad frecuente decidir si uno de los turnos de un estudiante estaba en desacuerdo con algún tipo de prolongación (explicación, evaluación o hecho) o con una explicación. Es habitual cuando se diseña un nuevo modelo analítico que haya algunas categorías con bordes difusos (véase Dalton-Puffer, 2013). Sin embargo, tal vez el uso posterior del modelo analítico pueda abrir pueda ayudar a mejorar en esta dirección. Algunos aspectos del modelo, una vez utilizados, se beneficiarían de una mejora adicional, especialmente a nivel del discurso. Los factores de igualdad y factores de mutualidad para determinar patrones interaccionales por ejemplo. Además, vale la pena considerar las limitaciones en la complejidad de usar un modelo que implica tres niveles diferentes. La limitación número cinco está relacionada con el programa de intervención Thinking Together y la adaptación realizada por el investigador. Tanto la traducción al español como la adaptación CLIL del programa fueron realizadas

por el investigador y tal vez se habrían beneficiado de una revisión o retroalimentación de otros investigadores. Sin embargo, debido a las limitaciones de tiempo una vez más, esto no se pudo hacer. Además, después de la intervención realizada para este estudio, algunas partes de la adaptación y la formación del profesorado podrían ser revisadas y mejoradas. El investigador pidió a los profesores experimentales que evaluaran cada lección (ver apéndice 9). Esta retroalimentación de los profesores podría ayudar a mejorar la adaptación de este programa al currículo español dentro de los contextos L1 y CLIL y, por lo tanto, mejorar los posibles programas de intervención futura. Para terminar, otro aspecto que limitó el presente estudio fue el número reducido de profesores (sólo dos) y los estudiantes (más o menos 60 en total) que formaron el grupo experimental. Teniendo en cuenta que dentro de esos 60 estudiantes, la mitad eran de un grupo CLIL y la otra mitad de un grupo L1, el alcance de la intervención es limitado.

2.8 Investigaciones futuras

Las orientaciones para nuevas investigaciones surgen de las limitaciones del estudio presentado anteriormente y de algunos de los puntos de discusión que han abierto nuevas motivaciones de investigación. Investigar el aspecto integrador de CLIL es, en la actualidad, un interés generalizado entre los investigadores de CLIL. En línea con este interés, este estudio presenta un modelo analítico que podría ser utilizado, no sólo con el resto del corpus recogido por el investigador, sino también con cualquier otra investigación en CLIL o en otros contextos educativos. Esto podría ayudar a validar las conclusiones alcanzadas en esta tesis. La investigación futura con el modelo analítico de múltiples niveles también podría hacerse en otros niveles educativos como en secundaria o la universidad. De hecho, podría ser utilizado en cualquier entorno de clase donde se valore el aprendizaje a través de una interacción comunicativa entre pares.

Otra línea para la investigación adicional que se puede extraer de las limitaciones de esta tesis es realizar una réplica exacta de los estudios realizados por Mercer et al. (1999) y Rojas-Drummod et al. (2003) en el contexto CLIL, incluyendo la prueba individual de la RTPM. Un grupo experimental más grande que incluía más profesores enriquecería aún más el estudio. Además, podría incluso utilizarse una versión mejorada de la adaptación del programa Thinking Together.

Otras líneas de investigación interesantes que emergen de los puntos de discusión son el análisis del uso de cobertura en la producción oral de estudiantes en inglés y en comparación con otros idiomas y el uso del lenguaje evaluativo por parte de los estudiantes de CLIL. Además, y dentro de un contexto de clase más general que no es necesario reducir a CLIL, la influencia de los patrones de interacción en el contenido y el aprendizaje de las lenguas y contenidos integrados. Esta última línea de investigación es un campo en el que el investigador espera contribuir en el futuro. Por último, pero no menos importante, si se diseñan programas de intervención como el modelo Thinking Together para ayudar a mejorar los diferentes aspectos de la interacción grupal en el L2 y especialmente en contextos CLIL, la investigación podría conducir a evaluar sus resultados en una línea similar a esta tesis. En suma, cualquier tipo de investigación que no pierda de vista el objetivo final de este estudio: investigar con el fin de ayudar a los profesores a mejorar el aprendizaje de los estudiantes en el aula, sería de enorme valor.

2.9 Conclusiones

Los hallazgos de esta tesis contribuyen a la comprensión de la integración de lengua y contenido de los aprendices mientras están inmersos en una actividad en grupo y simétrica. También ha demostrado el valor del elemento interactivo dentro del proceso de aprendizaje. Esto ha sido demostrado al exponer cómo los estilos de interacción afectan múltiples aspectos del aprendizaje. El modelo de niveles múltiples propuesto también ha demostrado su valía aunque con algunas limitaciones. También se han hecho contribuciones para ampliar los hallazgos mostrados anteriormente sólo en el área L1 (Mercer et al., 1999, Rojas-Drummod et al., 2003), al contexto de L2 y de CLIL. Asimismo se expuesto el valor de la Conversación Exploratoria dentro de CLIL (Moate, 2013), proponiendo intervenciones similares a las realizadas por este estudio. En el contexto de la investigación, esta tesis ha demostrado el valor de analizar diferentes tipos de actividades, ya que influyen en muchos aspectos del proceso de aprendizaje. En el contexto educativo, el valor de las estrategias de enseñanza y el patrón de interacción también se han afianzado como factores determinantes que afectan el

aprendizaje de los alumnos. Dalton-Puffer, Nikula y Smit (2010) señalan cómo el enfoque de la "fusión" en CLIL, que no implica divisiones estrictas entre el lenguaje y el contenido, sino que rescata el proceso integrador como postulado originalmente por Coyle, Hood y Marsh (2010) necesita llegar al ámbito de la investigación en CLI. Esto se puede realizar mediante el uso de múltiples perspectivas fusionadas (2010: 289). Llinares, Morton y Whittaker (2012) elaboraron una teoría basada en tres aspectos para investigar los elementos fusionados de CLIL (contenido y lenguaje) desde una perspectiva integradora a nivel teórico y práctico. Este estudio ha presentado un doble modelo teórico fusionado que se ha utilizado como base para diseñar un modelo analítico de tres niveles. Este modelo ha servido como herramienta para analizar el contenido, el lenguaje y la interacción de una manera integradora. Este estudio también ha observado las similitudes y diferencias entre el CLIL y L1, que podrían ser utilizadas, como propone Llinares (2015), para identificar qué características son específicas de la L2 y cuáles lo son de la L1. También ha contribuido a la investigación en este campo, que todavía es escaso, ya que la mayoría de los estudios comparativos se han centrado en comparar CLIL con EFL. Además, esta tesis ha esperado abrir la puerta para convertir la conversación exploratoria en una cultura deseable para el aula, que podría ayudar a construir un "espacio colaborativo" (Vass et al., 2008) entre alumnos y profesores. Además, esta cultura podría incluso llegar a ser una comunidad de colaboración en el aula CLIL (Moate, 2010), donde los estudiantes tendrían la libertad de explorar ideas, confrontar conocimientos y negociar juntos, a través de razones y nuevos significados (2010: 41-42).

Introduction

[a]nyone

who has attended a school,

knows how the communication system indicates to pupils the boundaries of

***who** they are*

*and what they may **do**.*

Barnes (1976:14)

Chapter 1: Introduction

Background and motivation

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The integrative perspective in CLIL

Comparing CLIL and L1

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Chapter Summary

1.1 Background and motivation

1.1.1 Content and Language Integrated Learning (CLIL)

The globalization and internationalization of today's world has resulted in a very demanding educational context where innovative teaching methods and tools are a constant concern. Some authors have named this age the Information Age. Fink (2013) lists a number of salient characteristics of learning in the Information Age: fused learning systems; just-in-time learning; seamless, integrated, comprehensive, and open systems; perpetual learning and technology synergies (Fink, 2013: 13). In the European context, institutions have constantly been looking for instruments to improve education and content

Language integrated learning (henceforth CLIL) is one example that aimed to achieve the goal of constructing a multilingual Europe (Pérez-Vidal, 2009). Moreover, and as Devos (2016) states, the emergence of CLIL as a motivational and contemporary model for teaching satisfies the needs of the Cyber Generation (born after 2001), whose idea of learning is "learn as you use, use as you

learn” (Mehisto et al., 2008: 11). In other words, CLIL gives learners the context where they can put their language and communication skills directly into practice, similarly, to some extent, to learning a language in the context where it is spoken. Learners no longer want to learn languages in isolation prior to having opportunities to apply them. Instead, they want to acquire and use languages simultaneously in meaningful contexts.

In addition, CLIL possesses three characteristics that make it an even more attractive educational approach in an information-driven society. It is effective, efficient and global (Devos, 2016:23): effective, as reflected in the improved results obtained by CLIL language learners in their second Language (L2 henceforth); efficient, because it combines two school subjects into one; and global, due to its integrative approach to learning. As Dalton-Puffer, Nikula and Smit (2010) state, even though the twofold goal of CLIL is widely acknowledged, it hasn’t been sufficiently dealt with in research: “theorizing in CLIL has treated it like a hot potato: much of the existing CLIL research has tended to focus on either its language or its content aspects, with much less attention being devoted to their interface, that is, the integration of language and content” (2010:288). The present study aims to contribute to this growing need by focusing on the integrated content and language aspect of CLIL.

1.1.2 The integrative perspective in CLIL

The central and distinguishing element in CLIL is its dual-focused educational approach, which seeks to fuse goals of content and language learning (Coyle, Hood and Marsh, 2010). In this line, many researchers are calling to bring the fusion of content and language perspective to CLIL teaching and researching. As DaltonPuffer et al. write, “either applied linguistics or content pedagogy fusional understanding would require a similarly ‘fused’ investigative take”(2010:289).

Other researchers have also defended this fusion of language and content in research, teaching and learning. Two volumes on CLIL (Llinares, Morton and Whittaker, 2012; Nikula, Dafouz, Moore and Smit, 2016) have highlighted integration as the main aspect to be addressed in CLIL. Many researchers have

demanded more work on principled approaches to content and language integration (e.g. Cenoz et al., 2014; Dalton-Puffer et al., 2010; Gajo, 2007). A decade ago, Leung (2005) proposed to integrate two pedagogic issues that were still seen in a separate way: curriculum content learning and language learning in classroom-based bilingual research (2005:240). Specifically in CLIL, a pioneer study was Llinares, et al. (2012) on the roles of language in CLIL. In this book, the authors account for the need to bring content and language issues together and the roles of classroom interaction and the work on genres and registers to achieve this purpose. Two recent studies have proposed a conceptual framework for the analysis and implementation of CLIL (Llinares, 2015; Meyer et al., 2015). The present study stands by the statement that Llinares et al. (2012:10) make when they write: “The theory needs to show, in a principled way how, at the same time, social activities such as education shape language use and how language itself constructs knowledge”. However, in Nikula et al.’s (2016:2) words, “operationalising such considerations to the more concrete level of research and educational practice still remains a challenge”.

This study seeks to operationalize these considerations by proposing a multi-layered analytical model that addresses both the language and the content elements present in CLIL students’ group discussions in a fusion manner. Moreover, in order to delve deeper into the integrative aspect of CLIL, the intertwined process of language constructing knowledge and the education shaping language use must be dealt with. Dalton-Puffer et al. (2010) suggest that “research based on CLIL as ‘fusion’ presupposes an inter-, perhaps even transdisciplinary research construct” (2010:289). It is with this idea in mind that the present study proposes an analytical model based on both a sociocultural view of learning and a functional linguistics conception of language, as it will be further presented in chapter 5, section 5.2.

1.1.3 Comparing CLIL and L1

According to Llinares (2015), the focus on integration can bring interesting insights not only when a foreign language is involved, but also in first language contexts. More specifically, “CLIL research on integration could serve as a catalyst for

increasing awareness of the role of language in learning any discipline in any language (first, second or third)” (2015:70). It is in this direction, that more research that compares learning in CLIL and L1 settings is necessary “in order to observe similarities and differences and identify what features can be transferred from one language to the other”(Llinares, 2015:70).

Yet, most comparative studies focus on foreign language attainment comparing CLIL and EFL (see e.g., Hüttner and Rieder, 2010; Maillat, 2010; Nikula, 2008; Ruiz de Zarobe, 2007 and 2010; for a full review, see Llinares, 2015). Few studies have compared content learning in CLIL and L1 settings. Some of these studies, performed by researchers in the second language acquisition and applied linguistic field, have taken a focus on language learning, (Llinares and Whittaker, 2010; Vollmer., 2008) while others (Airey, 2010; Wellington and Osborne, 2001) were performed by science teaching researchers and their focus is therefore on content learning. In the applied linguistics or second language acquisition field, researchers paid particular attention to academic writing (Llinares and Whittaker, 2010; Vollmer., 2008). Thus, Llinares and Whittaker (2010) compared secondary level CLIL students’ production in History taught in English with that of their peers studying the same subject in the L1 Spanish. They found that the students taught in the L1 were more proficient in certain features of academic language such as the use of prepositional phrases to express circumstances (time, place and cause) and the use of abstractions whereas CLIL students often used clause complexes, creating a more oral and less academic register in their written texts. In addition, Vollmer (2008), in his comparative study of CLIL and non-CLIL students, found that many of the CLIL learners he observed displayed poor academic writing skills in their academic language use. Vollmer (2008) showed how students often failed to articulate subject-specific concepts and issues adequately by using the appropriate academic language both in their L2 and L1.

The science teaching field has taken concern with regards to how the content subject (science) is learnt in the context of CLIL versus L1 (Airey, 2010; Wellington and Osborne, 2001).. Wellington and Osborne (2001) aimed to raise awareness on the importance of learning the language of science in science education through their

book. Airey (2010) compared the oral competency of undergraduate students in their L1 (Swedish) and L2 (English) describing physics concepts learned before. Oral competency was measured by fluency, code-switching and discipline discourse. He found that students were more fluent in their L1 than L2 and that they tended to switch to their L1 in describing physics concepts in L2. However, he also found that high achievers used both their L1 and L2 equally and suggested that teaching in both L1 and L2 could have a positive impact on students' disciplinary descriptions in both languages.

It is clear, thus, that comparative studies on CLIL and L1 contexts have been driven towards either a more language or content factor of the learning process, rather than aiming at examining the integrative language and content aspect of this process. Therefore, comparative studies that examine the integrative element of the learning process are necessary.

1.1.4 Focusing on Primary Education

In the 1990s, and in response to European language policies aimed at promoting plurilingualism among the European citizens (Council of Europe, 1992; 2008; Eurydice, 2005), the member states developed different programmes aimed at favouring bilingual education in their nations. In Spain, foreign language bilingual education and CLIL have seen a very fast increase in the last decade and “is consolidating as a trend in the autonomous education systems” (Lasagabaster and Ruiz de Zarobe, 2010: xi). In the Madrid region, although CLIL is fairly recent, it has had a large and fast implementation (Llinares and Dafouz, 2010) and in the school year 2015-2016, 492 state schools were taking part in the bilingual programme (353 at the primary level and 139 at the secondary level¹). Although CLIL research in Madrid has been carried out at different educational levels, namely primary (Halbach, 2008; Basse, 2016; Pascual, 2017), secondary (Llinares and Morton, 2010; Llinares and Whittaker, 2006, 2009, 2010; Llinares et al.2012; Morton, 2010;

¹ See the uam-clil website for further information on the topic: <https://uam-clil.org/resources/clil-in-madrid/history-and-objectives/> (with the references to the sources he used) and <https://uam-clil.org/resources/clil-in-madrid/statistics/>

Whittaker, Llinares and McCabe, 2011) and tertiary (Dafouz and Llinares, 2010, Dafouz, Núñez, Sancho, and Foran., 2007, Maíz-Arévalo and Domínguez-Romero, 2013). Due to the quick growth of these programmes, more research is needed with clear pedagogical applications.

Moving to the European scene, most of CLIL research has focused on the secondary school classroom because this is the level where the majority of CLIL programmes have started and have been more extensively implemented (Lasagabaster and Sierra, 2010). Just to mention some examples, in a large scale study of Austrian secondary schools, Dalton-Puffer (2007) analysed the patterns of language use and language forms, Nikula (2007) compared the IRF pattern in CLIL and EFL classes in Finnish schools, and Llinares and Whittaker (2009) examined the oral and written language of Spanish secondary students in Madrid. Other studies have analyzed the the European secondary CLIL context: Gassner and Maillat (2006) in Switzerland; Jakonen and Morton (2015) in Finland; Mariotti (2006) in Italy and Sylvén (2006) in Sweden.

At the primary level, the implementation of CLIL in Europe is also steadily growing. However, according to Nikula, Dalton-Puffer and Llinares, 2013, CLIL research at this educational level is still in its infancy and very scarce. Among the few existing studies, there is Buchholz's (2007) analysis of Austrian primary school students' participation in classroom interaction, Massler's (2012) account of children's, parents' and teachers' perspectives on CLIL in Germany, Serra's (2007) longitudinal study assessing integrative bilingual learning implemented through CLIL in three swiss primary schools, and a few comparative studies, such as Llinares and Lyster's (2014) comparison of the use and effect of corrective feedback in immersion and CLIL classrooms in Spain and Canada, and Llinares and Pastrana's (2013) comparison of primary and secondary school students' oral production in Spain.

Although research at the primary level in other bilingual education contexts, such as immersion, is more abundant and is definitely relevant for CLIL, we need more studies contextualised in settings where the school represents the only contact that students have with the foreign language (Dalton Puffer et al., 2010). This is an

important difference with immersion contexts where students' possibilities to have contact with the L2 school are much higher (for a further discussion, see e.g., Lasagabaster and Sierra, 2010). The present thesis addresses the abovementioned gap in research by focusing on primary school CLIL students in a "foreign" language context.

1.1.5 Group interaction in CLIL

The school has been defined as a place where communication is particularly relevant, a place which is there "purely for the talk" (Barnes, 1976:14). Until not so long ago, the predominant type of classroom communication has been the one between the teacher and the rest of the class. However, there has been a growing interest in other possible forms of interacting in the classroom, such as peer and group work, which now constitute common ground in modern pedagogical trends. Thus, Cooperative learning (e.g., Sharan, 1990; Slavin, 1990), Task-based learning (e.g., Nunan, 1989) and Project-based pedagogical models (e.g., Blumenfeld et al., 1991) are all methodologies that build on the interaction among students who carry out collaborative activities in pairs or small groups in the classroom. This interest is shared by Second Language Acquisition (SLA) researchers, especially by those working within the interactionist model. Within this approach, one of the first research foci was on the opportunities of peer interaction for *negotiation of meanings* (Long, 1983). Recently, there has been an increased interest in deeper analyses of learning and interaction in group and pair work, especially of the way the participation structure and the power of each member of the group is negotiated (e.g., Ballinger, 2013; Donato, 1994; Guerrero and Villamil, 1994; Storch, 2002). In line with this research, the present study addresses this issue in a context where it has been hardly explored: the CLIL classroom.

As Nikula et al. (2013) observe, most of the studies on CLIL classroom discourse have examined whole-class interactions in teacher-fronted classrooms. Many have focused on the prototypical three-part sequence: Initiation–Response–Feedback or IRF sequence (Synclair and Coulthard, 1975), also known as Initiation–Response–Evaluation (IRE) sequence (Mehan, 1979). It has been widely argued that this pattern often constrains and restricts students' possibilities of participation in the

construction of knowledge as it is mainly the teacher who selects the topic and the next speaker, often preventing students from pursuing their own ideas and interpretations (Barnes, 1976; Cazden, 2001). However, specifically in CLIL contexts and drawing on their findings, Llinares et al. (2012) claimed that the effectiveness of this pattern is not determined by the nature of the pattern itself, but rather by the activity at hand, its purpose and the participant roles.

A few studies have already investigated peer interaction in CLIL group-work activities (e.g. Devos, 2016, Llinares and Pastrana, 2013; Llinares and Morton, 2012; Pastrana, 2010; Morton and Evnitskaya, forthcoming). They have shown that this type of interaction allows students to participate in all three IRF moves, thus becoming active participants in the co-construction of knowledge. They are not only “animators” of the content knowledge they are supposed to have acquired but also “principals” or generators of new constructed knowledge (Goffman, 1981; see also Llinares and Morton, 2012).

Although some studies on CLIL have shown the advantages of group activities when compared to whole-class activities (e.g., Buchholz, 2007; Llinares and Pastrana, 2013; Nikula, 2005; Pastrana, 2010;), a deeper examination of the type of language that CLIL students use in such activities is necessary: “we still know rather little about how different classroom contexts and activity environments constrain language use” (Nikula, 2005:29). In order to further research this topic, the present study focuses on small group interaction in CLIL settings.

1.1.6 Applications in pedagogy

It is common to find that research studies set in educational contexts reduce research and pedagogical applications to potential implications. In other words, they tend to end up with a long list of *coulds* and *woulds*, which, in the end, often remain wishful thinking. This is the reason why the present thesis combines research on group interaction in primary classrooms with teacher training and implementation of a specific pedagogical programme that can enhance and improve integrated content and language learning in group work in both CLIL and L1 classrooms.

1.2 Aims and scope of the present study

The aim of this study is to get a deeper understanding of the relation between language and knowledge construction in group-work sessions in CLIL and L1 classrooms.

In addition, the researcher strongly believes that specific pedagogical practices in small group talk aimed at improving the quality of classroom talk (discourse), reasoning skills (knowledge construction) and collaborative learning (interaction) (Mercer et al., 1999; Dawes et al., 2004) could help students, both in L1 and CLIL classroom contexts, to improve their communication, reasoning and group work skills. Therefore, this study, by means of designing and implementing a specific pedagogical programme, that is, an intervention programme which will be explained in the theoretical framework chapter 3 section 3.3.3 and in the methodological chapter 4 section 4.4.3, also seeks to find a tailored pedagogical resource for both L1 and CLIL teachers to use in the classroom in order to help them improve the quality of small group work at all three levels.

In sum, the present study has two overall objectives:

1. O1: To develop a deep understanding of learning opportunities in group work interaction in primary classrooms, by focusing on the integration of language and content.
2. O2: To evaluate the effectiveness of an intervention programme aimed at improving small group talk and reasoning in the class at three levels, discourse, knowledge and interaction.

In order to achieve these general objectives, they were broken into more specific objectives:

- I. To design a multi-layered analytical model which would allow to operationalise and research the integrative aspect in CLIL.
- II. To design, implement, and evaluate the results of an intervention programme that helps students both in CLIL and L1 settings improve their small group working skills.

1.3 Methodology and research questions

The present study was organized and set in order to help reach firstly, the two specific objectives (I and II) and secondly, the two general objectives (O1 and O2). In this section the research performed in the present thesis will be situated within its context and participation scheme to end up presenting the research questions that have driven it.

1.3.1 Participants and research context

Four classes, two CLIL and two L1 classes, from two primary schools took part in this study. The data from two CLIL classes (CLIL group set) were collected in a private bilingual primary school located in the northeast of Madrid. The data from the other two classes (L1 group set) were collected in a subsidized school also located in the northeast of Madrid. Both schools are situated in areas of similar middle-class socio-economic status. Students participating in this study were in grade 4 of primary education (age 9-10), with each class having between 23 and 27 students.

From the two CLIL and two L1 classes two classes (one from each set) were randomly selected to follow the intervention program, thus constituting the experimental groups (CLILA and L1A). The other two classes served as the control groups (CLILB and L1B) which followed their regular classes but were recorded as well. Both teachers from the experimental groups were trained in the intervention program by the researcher before developing the program in class. The intervention program chosen was the *Thinking Together* program developed by Neil Mercer and his colleagues at the Faculty of Education in Cambridge University in the years 2000s (Dawes, Mercer and Wegerif, 2004). This program was designed to improve the quality of classroom talk and joint reasoning in British L1 classrooms by eliciting a type of talk called *exploratory talk* (Barnes, 1975, see section 3.3.2 in chapter 3 for more details). The Thinking Together program had already been applied in the L1 context in UK and Mexico. The studies done on the implementation and the results of the program in these two countries (Mercer, Wegerif and Dawes, 1999; Rojas-Drummod, Pérez, Vélez, Gómez and Mendoza, 2003) showed students

in the intervened/experimental groups used exploratory talk more frequently and improved their problem solving abilities.

For the present study, the original program was adapted to meet the linguistic characteristics of the Spanish L1 and CLIL students and the Spanish curricular program. To measure the students' problem solving abilities, the Raven's test of progressive matrices was used, following the abovementioned studies on the program application in UK and Mexico. This test is further explained in chapter 4, section 4.3.2.2. In all four groups, both experimental and control ones, two group-work sessions were carried out: a discussion activity (DA) and a problem-solving activity (PSA). In order to evaluate the results of the intervention program all four groups and the two activities were video- and audio-recorded at two times: before and after the intervention (February 2015, pre-test, and June 2015, post-test). The collected data constituted the corpus of classroom data. For the purpose of this dissertation, from the total of 8-9 small groups that performed both activities in each class, only 4 were selected randomly for the analysis, making a total of 16 groups and 32 recordings (approx. 21h of recorded data). The description of the data is further described in chapter 4, section 4.3. All data were transcribed by the researcher and a colleague using the University of California Santa Barbara conventions (Du Bois et al., 1993; Du Bois, 2003).

1.3.2 Research questions

In order to pursue the two general objectives set for this study, it is divided in two parts. The first part describes and compares the process of the co-construction of knowledge (O1) in small group interaction in the four analysed groups (two CLIL and two parallel L1 groups) across two activities (DA and PSA). The research questions (RQ) for this part of the study are the following:

PART 1

RQ1. How is knowledge co-constructed in CLIL and L1 group-work activities?

RQ1.1 What type of speech functions do CLIL and L1 students produce?

RQ1.2 What type of knowledge is displayed in CLIL and L1 students' use of registers and cognitive discourse functions?

RQ1.3 What type of interaction takes place in CLIL and L1 group-work in terms of the equality and mutuality fostered in the groups?

RQ2. Are there differences in the three layers (1.1, 1.2, 1.3) above between CLIL and parallel groups working on the same activities in the L1? If so, which are they?

RQ3. Are there differences in the three layers (1.1, 1.2, 1.3) above when students in CLIL and L1 groups discuss a topic and when they solve a problem? If so, which are they?

The second part aims at evaluating the results of the Thinking Together (TT) intervention program (02). This is done by analyzing how the CLIL and L1 experimental groups reason together and how they co-construct knowledge before and after the intervention. This analysis also includes a comparison across the two groups (CLIL experimental versus L1 experimental and CLIL experimental versus CLIL control) and across the two activities (PSA and DA). The research questions for this part of the study are the following:

PART 2

RQ4. How do CLIL and L1 groups reason to solve problems in the Ravens test of progressive matrices?

RQ4.1 Is there any difference between the experimental CLIL and L1 groups (CLILA vs L1A) before and after the intervention? If so, which are they?

RQ4.2 Is there any difference between the experimental and control CLIL and L1 groups (CLILA vs CLILB and L1A vs L1B)? If so, which are they?

RQ4.3 Is there any difference between the CLIL experimental and the L1 experimental group (CLILA and L1A) after the intervention? If so, which are they?

RQ5. How is knowledge co-constructed in the CLIL experimental group (CLILA) before and after the intervention?

RQ5.1 Are there any differences when compared with the L1 experimental group (L1A)? If so, which are they?

RQ5.2 Are there any differences across the two activities (PSA after the intervention and DA)? If so, which are they?

In order to answer these research questions a three-layered analytical model was designed: a discourse layer, a knowledge layer and an interactional layer. These layers correspond to research questions 1.1, 1.2 and 1.3, respectively. The first, discourse layer examines students' use of speech functions in the data in order to see how language is used to convey meaning. The model of speech functions to analyse casual conversation developed by Eggins and Slade (1997) was adapted to

the needs, objectives and context of this thesis. The second, knowledge layer identifies the type of content talked about through speech functions. To design this layer the model of classroom registers (Christie, 2002) together with an adaptation of Dalton-Puffer's (2013) cognitive discourse functions (CDFs henceforth) was used. Finally, the interactional layer analyses the way students interact in group. For this layer, the interactional patterns based on equality and mutuality and developed by Storch (2002) for the analysis of pair work were used. It is expected that the combination of these three layers will allow to provide a full and detailed picture of the complexity of the language-content interrelation. This multi-layered model is explained in detail and layer by layer in chapter 5, section 5.2. Figure 1.1 is a representation of the multi-layered analytical model used in the present thesis.

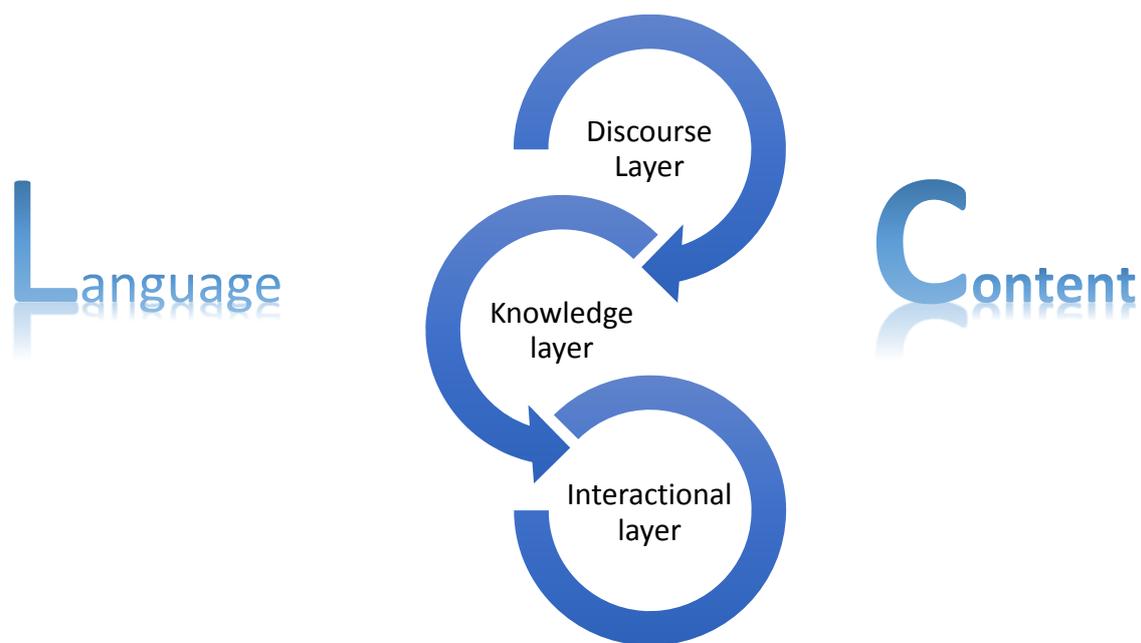


Figure 1.1: Representation of the multi-layered analytical model designed for this study.

1.4 Theoretical perspectives

1.4.1 *A combined model for the analysis of group interaction in CLIL*

The analysis of group interaction in the classroom can be approached from multiple

perspectives. In the pedagogical or educational field the debate is set around learning in general, and educational experts often focus on learning per se and build on the methodologies, the types of talk and types of interaction that promote that learning. Whereas in the linguistic field the main focus is language and language learning since linguists consider language as carrier or maker of meanings and concepts to be learnt. This twofold interest is parallel to the focus of interest shared by the CLIL research and teaching communities: how best to integrate content and language.

Some applications of applied linguistics have shown concern for investigating the way language is connected to learning in general. This is particularly the case of Systemic Functional Linguistics (henceforth SFL), an approach that has been centered on meanings and how these are built through language use (Halliday, 1977). Within the educational field, Sociocultural theory (henceforth SCT) views learning as a social process immersed in the act of communicating (Lantolf, 2000). In order to deeply analyse this twofold focus on language and knowledge, the present study combines the educational and the linguistic fields to gain the understanding of how language and knowledge are co-constructed in group-work interaction. In this way, from the linguistic field a systemic-functional and a cognitive discourse approaches to language were used while from the educational field a sociocultural perspective was taken.

As it has already been briefly mentioned above in relation to the three-layered analytical model designed for this study (section 1.3.2), the linguistic analysis comprises the discourse level (based on Eggins and Slade's model of speech functions) and the knowledge level (based on Christie's model of classroom registers and Dalton-Puffer's CDFs). The combination of these models allows to examine language as it is used in group work interaction (speech functions) and connect specific linguistic realizations to their meaning (CDFs). Meanwhile, the educationally-based sociocultural analysis corresponds to the interactional level (based on Storch's interactional patterns of pair work. The interactional layer adds the social element of interaction among peers to the multi-layered analysis of the learning process that takes place while working in groups in the CLIL and L1 class. Another part of this educational approach is the development of the intervention

program that seeks to improve the quality of classroom talk and joint reasoning (Mercer et al., 1999; Dawes et al., 2004). Therefore, by combining SFL and SCT, the present study aims at going beyond language as it seeks to analyse the process that unites and integrates language and knowledge. This combined perspective sees talk as enabling learners to reason and acquire common knowledge whilst immersed in a meaning making activity. This primacy of language and its interrelation with thought can maintain and integrate the language and content goals of CLIL. Moreover, it also “provides the fundamental basis for the negotiated relationship between these dual goals” (Moate, 2010:43).

The synergies between SCT and SFL have been demonstrated by several researchers (Hammond, 2002; Gibbons, 2002, 2008; Schleppegrell, 2004; Wells, 1999), who have combined the two models in their research on language and education. This link has been possible due to the parallel vision both frameworks have on conceiving language learning as taking place in interaction with others. Within the CLIL framework, Llinares et al. (2012) also demonstrated the compatibility of these approaches since both view language as a social process. Namely they write: “[i]n SFL, language use is shaped by what kind of activity we are doing and who we are doing it with, and for Vygotsky, such language use with others is the essential tool in our cognitive development” (2012:11). The authors make a step forward by adding social models of language learning in SLA as a third approach in their framework creating a threefold theoretical perspective (see figure 1.2 for a representation of this model).

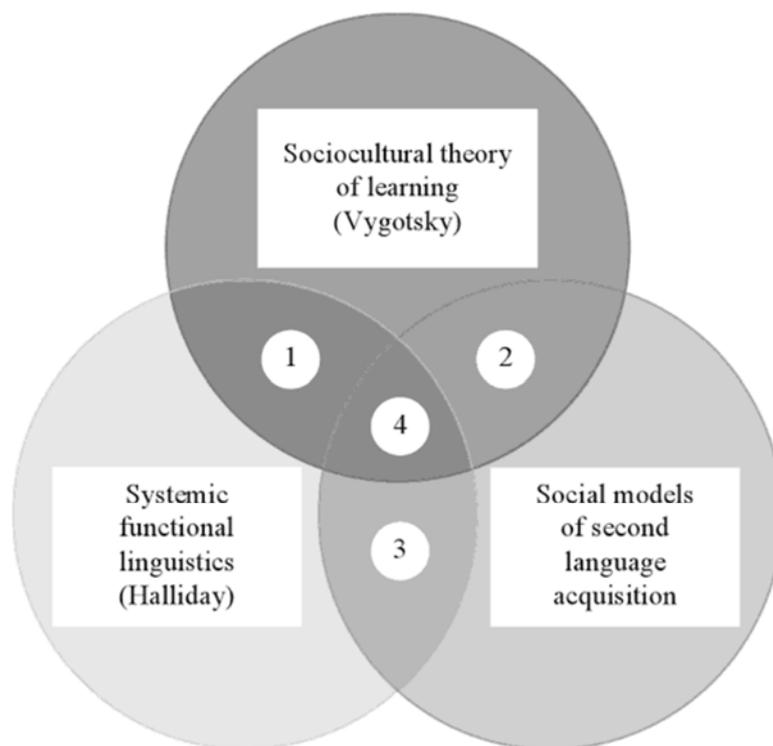


Figure 1.2: Three overlapping theoretical perspectives (taken from Llinares et al., 2012:11)

An overall social perspective brings together the various strands in this thesis' twofold framework: a social-semiotic theory of language as meaning-making activity (SFL) and a Vygotskian theory of learning in social interaction. Therefore, this study could be situated in the overlapping number one in Llinares et al.'s (2012) framework. Since this thesis examines two different learning settings (CLIL and L1), the framework should be applicable to both contexts and thus the perspective of SLA socially-oriented theories becomes less relevant for the purposes of the present study.

1.5 Thesis overview

This thesis is divided into four main parts. The first part (Chapters 1 to 4) first provides an overview of the thesis (this Chapter) and then presents two theoretical frameworks used in the study: linguistic approaches (Chapter 2) and educational perspectives (Chapter 3). In this way, Chapter 2 focuses on the Systemic Functional Linguistic perspective as the main linguistic framework of the study and provides an overview of the three linguistic aspects used for the multi-layered analytical

model: speech functions, classroom registers and cognitive discourse functions. Chapter 3 presents the Sociocultural educational perspective and exposes the third component of the multi-layered model: the interactional patterns. This chapter also provides details on the intervention programme and its theoretical underpinnings.

The second part (Chapters 4 and 5) describes the methodological approach, research design, data collection procedures and proposed analytical model used in this study. Chapter 4 revises this study's objectives and research questions and presents the research context and the main methodological and procedural aspects of the study. Chapter 5 first presents each layer of the developed multi-layered analytical and explains the designing process and the model or models each layer is based on. Secondly, the chapter presents the considerations and modifications made when using and after using the multi-layered analytical model.

The third part (Chapters 6 and 7) presents the results of the two analytical parts of the study. Each Chapter thus focuses on one analytical part. Following research questions 1-3 and their sub-questions, Chapter 6 exposes the descriptive results of the analysis of the co-construction of knowledge in each group as well as across groups and activities. Chapter 7 first presents the results on problem-solving in both groups after the intervention program, thus following research question 4 and its sub-questions, and after that provides results on the co-construction of knowledge in the CLIL group before and after the intervention program.

Finally, part four (Chapters 8 and 9) contains the discussion of the results and conclusions. Chapter 8 puts together the main findings obtained in the two analytical parts of the study, foregrounding the main points for discussion. It also proposes pedagogical and research applications deriving from this thesis. To end with, Chapter 9 gives some concluding remarks on the study as a whole, identifies its limitations and suggests topics for further research.

1.6 Chapter Summary

The aim of this introductory chapter was to present an overview of the thesis and to situate the reader in what is about to come in the rest of it. It started with the presentation of the background and motivation for the study which is framed within recent CLIL research as well as of its aims and scope. Within the aims, the general

and the specific objectives of the thesis were presented. Then, the context of the study and its participants as well as the adopted methodological approach were described. After that, the research questions stated for the study were presented and a preview of the multi-layered analytical model specifically designed for this thesis was provided. This was followed by a summary of the two main theoretical underpinnings constituting the designed model: SFL and SCT and a justification of the need to integrate both perspectives in order to achieve the integrative aim present in CLIL.. Finally, the chapter provided a brief overview of the structure of the thesis. In the next chapter, one of the framing elements of the study will be presented: the linguistic approach and, more specifically, a systemic functional conception of language.

Theoretical Framework

*This theory needs to show in a principled way how,
at the same time,
social activities such as **education** shape language use
and how **language** itself constructs **knowledge**.*

(Llinares, Morton and Whittaker, 2012:10)-

Chapter 2: Classroom discourse: linguistic approaches

Introduction

Systemic Functional Linguistics

Systemic functional linguistics and language development

Systemic functional linguistics and educational learning

Systemic Functional Linguistics and discourse in context

Language and context

Curriculum genres and classroom registers

From a SFL view of discourse to speech functions

A summary of SFL elements applied in the present study

SFL research on language learning: SLA and CLIL

SFL in SLA

SFL in CLIL

Cognitive discourse functions

The need to add the cognitive element

Types of cognitive discourse functions

CDFs and CLIL

Chapter summary

2.1 Introduction

In the introductory chapter 1, the grounds for a combined linguistic and educational model used to develop the multi-layered analytic model for this study were laid. In the present chapter, the theoretical principles of the linguistic part of the model will be featured since it served as a base for two layers of the analytical model: the discourse and knowledge layers. As already mentioned in Chapter 1, the discourse layer is based on an SFL approach to the analysis of conversation while the knowledge layer draws on the register theory within SFL and a cognitive discourse approach, and more specifically, on the notion of CDFs.

Hence, apart from this introductory section 2.1, this chapter has two main sections. Section 2.2 presents the theoretical framework employed for the discourse layer of the linguistic analysis: Systemic Functional Linguistics. It starts with an overview of how language learning processes are conceived from the SFL perspective (Halliday, 2014) in the developmental and educational planes and the presentation of the main SFL concepts and Halliday's model of the stratified language (section 2.2.1). Then, within the SFL conception of discourse, the model of speech functions (Eggins and Slade, 1997) is described, followed by an outline of the model of classroom registers (Christie, 2002) (section 2.2.2). Section 2.2 concludes with an overview of the applications of SFL research on language learning to SLA and CLIL (section 2.2.3). The second part of this chapter (section 2.3) provides details on the theoretical framework which, together with classroom registers, was used to design the knowledge layer of the analytical model in this study: the model of cognitive discourse functions (Dalton-Puffer, 2013). First, the cognitive element of this model is introduced and the seven types of CDFs are presented. And then the question of the relation between the integrative aspect of CLIL and the CDFs is addressed.

2.2 Systemic Functional Linguistics

SFL is an approach to linguistics developed by M.A.K Halliday (2014), which is based on the assumption that language is an evolving system that changes according to our needs (Thompson, 2004). From an SFL perspective, all elements in a language are constructed and designed in order to understand the functional aspect of the communication process, in other words, "how language users exploit and deploy the language choices to make meanings" (Christie 2002: 13).

2.2.1 SFL and language development

SFL understands learning as a process that goes hand in hand with language and its development since, "[t]he distinctive characteristic of human learning is that it is a process of making meaning—a semiotic process; and the prototypical form of human semiotic is language. Hence the ontogenesis of language is at the same time the ontogenesis of learning" (Halliday, 1993: 93).

As it can be seen from the citation, Halliday suggests to conceive learning as a

semiotic process. Since the human semiotic is eminently done through language, this makes the creation and development of language and its features an essential aspect of learning. Moreover, Halliday considers language not as a domain of knowledge (as many educational theories do) but as the key concept for knowing. He argues that most theories of learning, even the ones that take account of language learning, come from outside the study of language. Therefore, they tend either to ignore language development, or to treat it as just one learning domain. Halliday defends that language cannot be considered a domain of human knowledge. However, he makes an exception in the context of linguistics, where language is an object of scientific study. Thus, for Halliday “language is the essential condition of knowing, the process by which experience becomes knowledge (1993:94).

Building on this idea and drawing on the study of language development, Halliday presents his theory of language development. However, from the very beginning, two limitations are mentioned: the first, that the theory would be based on natural data (and not experimental) and the second, that it would not dissociate the system from the instance (Halliday, 1993). Bearing these two constraints in mind, Halliday enlists 21 features in language development that his theory would address which later constituted the main descriptors of the systemic functional conception of language development (see Table 2.1).

THEORETICAL FRAMEWORK

Feature number	Feature description	Comments
1	<i>A human infant engages in symbolic acts referred to as acts of meaning</i>	
2	<i>Symbols begin to be established as regular signs and they are characteristically iconic.</i>	
3	<i>These sets of symbolic acts develop into systems</i>	
4	<i>The system as a whole is deconstructed, and reconstructed as a stratified semiotic that is, with a grammar</i>	Grammar or lexicogrammar
5	<i>Symbols now become conventional, or “arbitrary”</i>	
6	<i>Children adopt the “trailer strategy in learning the language.</i>	“trailer strategy” is a kind of preview of what is going to come
7	<i>Another learning strategy is acquired which Halliday calls “the magic gateway”.</i>	“the magic gateway” is finding a special way into a new world of meaning.
8	<i>Generalization occurs</i>	The move from proper name to common name.
9	<i>The metafunctional principle is acquired</i>	Metafunctional principle: meaning is at once both doing and understanding (interpersonal metafunction)
10	<i>Children now have a range of what Halliday calls “semogenic strategies” available for expanding their meaning potential</i>	
11	<i>Emergence of information</i>	Imparting meanings not yet shared by the listener.
12	<i>Introduction of ideational term through the “interpersonal gateway”</i>	New meanings construed in interpersonal contexts and later transferred to ideational ones: experiential and /or logical.
13	<i>Dialectic of system and process appears</i>	The system of language is construed from acts of meanings and from the systems, acts of meaning are also engendered.
14	<i>The principle of filtering or “challenge zone” is used.</i>	Learners decide what is and what is not in their learning agenda.
15	<i>Children learn options and their relative probability.</i>	e.g., they learn grammar by starting with the most salient options).
16	<i>Return to the metafunctional principle (features 9 and 12) by building a third, textual, metafunction .</i>	It is the resource for creating discourse.
17	<i>The principle of complementarity in the grammar is introduced.</i>	Contradictory interpretations are used to build the whole as a result of the tension resulting from them.
18	<i>Development of abstractness</i>	Significant for the development of literacy.
19	<i>Children reconstitute reality as a result of reconstituting language</i>	
20	<i>Reconstruction due to appearance of grammatical metaphor.</i>	They reinterpret their experience in the written mode.
21	<i>Children learn through synoptic/dynamic complementarity</i>	Learning to understand things in more than one way.

Table 2.1: 21 features in language development (Halliday, 1993)

Based on Halliday's (1993) model of language development in the mother tongue, some researchers argue that this process takes a similar path in the L2 or foreign language (FL henceforth). As Halliday and Webster (2007) state:

<...> the second-language meaning potential is being elaborated just as the first one was – not of course along the same route as the first language (because the point of departure is quite different and anyway it is impossible to do anything for the first time twice), but by a process that is by now well-tried and familiar (2007:346).

Thus, Llinares (2006) adapted Halliday's (1975) and Painter's (2000) classification of the child's language to design a taxonomy of functions in order to analyse children's L2 language development in preschool contexts.

Features 1 to 3 describe how the infant engages in what Halliday calls *acts of meaning* which gradually become regular and iconic until they transform into a system, namely *protolanguage* or *child tongue*. After this, the system is deconstructed and reconstructed as a stratified semiotic with lexicogrammar (feature 4), which is the moment when the protolanguage becomes language (Halliday, 1993: 96).

The next features (features 5 to 10) described by Halliday (1993) entail significant change in the child's language. Thus, these features describe the "explosion into grammar" that the child's language suffers (Halliday, 1993:100). The most important feature at this stage of language development is described by Halliday as the metafunctional principle (see feature 9) where meaning is simultaneously doing and understanding (*idem*). He further expands on this aspect by adding how an act of meaning is formed through the intervention of both the experiential and the interpersonal. Therefore, all learning is both action and reflection (Halliday, 1993:101).

Next come features 11 to 21, which are very relevant for language learning. Feature 11 corresponds to a turning point in the child's language development, and therefore in language teaching and learning, namely the moment when the child learns to create and ask for information, that is when they learn to tell or ask people about things they still don't know. Halliday describes this telling as "a complex

operation, because it involves using language to “give” a commodity that is itself made of language” (Halliday, 1993:102). Asking for or demanding also becomes more complex moving from purely pragmatic-oriented utterances to a division in two types of demands. To the demands for goods and services or “pragmatic” ones a new type of demand is added, a demand for information. This makes language ready to be learnt and taught, making learning for the first time “a two-way semiotic process, based on the reciprocity of learning and teaching” (idem).

Feature 12 describes “the interactional gateway principle” or the process that leads to the incorporation of the ideational metafunction into the child’s linguistic system. Examples of this principle are the moments when the child gives unknown information, extends into new experiential domains, develops logical-semantic relations, learns abstract terms or moves into grammatical metaphor (Halliday, 1993:104). The dive into the ideational metafunction (features 12 to 15) is what constitutes the semiotic conception of language learning. Only one last step is missing in this process: the textual component (feature 16), which children acquire when they start learning to read and write. In Halliday’s (1993:107) words:

I have suggested that learning consists in expanding one’s meaning potential, and up to this point, meaning potential has been defined in terms of the ideational (experiential plus logical) and interpersonal metafunctions. <...> Together these make up a semiotic resource for doing and for understanding as an integrated mode of activity. The intersection of these metafunctions defines a multidimensional semantic space. This becomes operational through being combined with a further component, the textual.

This moment initiates a new phase in the child’s language development (features 17-21), whose main feature is the emergence of abstraction and the attention to language itself (feature 18). It also involves a new kind of knowledge that Halliday calls “educational knowledge”: it is mainly written and opposed to the “spoken knowledge of common sense”. However, the process of incorporating the written language is not merely an additional process, it implies a new way of building up knowledge through reconstruction and regression (Halliday, 1993: 109), thus adding a whole new dimension to language – grammatical metaphor (feature 20). This last reconstruction (feature 20) where the doings and happenings that reality

was made of are now changed into things is the process of nominalization, a kind of “thinginess” (Halliday, 1993:111) which is the central constituent of grammatical metaphor. According to Halliday, metaphor could be linked to multimodality as it reflects how all learning involves learning to understand things in more than one way (1993:112). However, he argues, children only accommodate to this phase at the age of puberty, around the age of 9. Summing up, the 21 features presented constitute what Halliday (1993:111) viewed as three-step model of human semiotic development where protolanguage represents a pre-semiotic stage: (protolanguage ⇒) generalization ⇒ abstractness ⇒ metaphor.

According to Christie and Unsworth (2007), the language development process accounted for by Halliday (1993) may clearly be divided into three phases: the protolanguage phase, the transitional phase and the final phase. The first one, the protolanguage phase (features 1 to 4), covers the period from about nine months on when utterances (or “signs”) produced by an infant reveal their use of the “communicative system to achieve certain immediate needs [and] <...> [bear] no relation to the ‘mother tongue’ the child would learn to produce, but they [are] instead his creation” (Christie and Unsworth, 2007:221). The second or the transitional phase (features 5 to 21) starts with the first attempts to use the “mother tongue” and particularly when the child’s utterances can be recognized as related either to “learning about the world” or to “participation and interaction in the world”, or “mathetic” and “pragmatic” macrofunctions in Halliday’s terms (idem). The third and final phase (beyond feature 21) corresponds to the period in the child’s language development in which mathetic and pragmatic macrofunctions further develop into three full meaning making metafunctions: ideational, interpersonal and textual.

In this section, the Systemic Functional perspective on language development has been presented. The language of the child develops into three broad metafunctions in the language of the adult: ideational, interpersonal and textual. This study focuses on the interpersonal metafunction by using Eggins and Slade’s (1997) speech function analysis in the design of the discourse layer of the analytical model. This will be further developed in section XX.

2.2.2 SFL and educational learning

According to Christie and Unsworth (2007), Halliday began to become actively involved with educational work in 1960. His account of language development, as following the three phases described in the previous section, was a useful model for pedagogy and was widely adopted in the 1980s. In the Language Development Project that was launched as a national curriculum project in Australia in 1977, and in which Halliday closely collaborated, he proposed adopting a threefold perspective of “learning language, learning through language, learning about language” (1993:113). Learning language means learning the language element or what Halliday calls the *substance* (Halliday, 1999), that is, the mother tongue or an L2 or FL. Learning through language considers language as an *instrument*, and describes using language as a medium to learn school subjects such as e.g. science, history or geography. In learning about language, the language element is the *object* and this usually takes place in language classes when children learn about grammar, styles and registers, and history of words. Despite Halliday’s threefold proposal, in practice, a more systematic attention was paid in curriculum discussions and theory literature to the first two elements, that is, learning language and learning through language and not so much to the third one, learning about language (Christie and Unsworth, 2007:222). For Halliday, “learning through language” meant situating the structural continuity mentioned in the 21 features above “with respect to those contexts where the learning is actually focussed on language” (1993:113).

This study is situated in a “learning through language” context where *language* is regarded an *instrument* for learning the science content subject both in the L1 and a FL. Next section presents what could be seen as the “learning about language” element in Halliday’s perspective, that is, how language is structured through the Systemic Functional approach. This focus will lead to the the introduction of the two elements used for the multi-layered analytical model: Eggins and Slades’s speech functions (1997) and Christie’s classroom registers (2002).

2.2.3 Systemic Functional Linguistics and discourse in context

In her book introductory book on SFL, Eggins (2004:21) declares that “SFL has been described as a functional-semantic approach to language which explores both how people use language in different contexts, and how language is structured for use as a semiotic system”. She later acknowledges that SFL “seeks to develop both a theory about language as a social process *and* an analytical methodology which permits the detailed and systematic description of language patterns” (2004:21). Eggins is not the only one who accounts SFL as an analytical methodology (Christie and Unsworth, 2007; Eggins and Slade, 2005; Kappagoda, 2007; Schleppegrell, 2004). Whether in a casual conversation or a classroom context, SFL structure of language has proven enriching for studies where language is a central element. In this study, having stated what language is and how it develops from an SF perspective, we will now delve deeper into how it is organized and the relation it has with context, a key element in SFL.

2.2.3.1 Language and context

One of the constraints mentioned by Halliday (1993) when presenting his theory on language development discussed above (section 2.2.1), was that it would not dissociate language as a system from the instance of language in use. The system and the instance are tightly connected through the concept of context. For Halliday, context must be considered as a constituent layer in the organization of language as this allows to model its variation and complexity and therefore to take into account “differing situational contexts for different levels and kinds of teaching/learning activities, as well as the processes and the institutions of education and the different cultures within which these are located” (Halliday, 1999: 1).

So, within SFL, the interest in showing how language is organized is always related to its use since there is a natural relation between the organization of language and the organization of context (Martin, 2009). This means that “by modelling both language and social context as semiotic systems in a relationship of **realization** with one another” (Martin 2005: 4), the way how language and context are organized is treated in SFL “as functionally diversified along similar lines” (Martin, 2005:4). Figure 2.1 illustrates this idea:

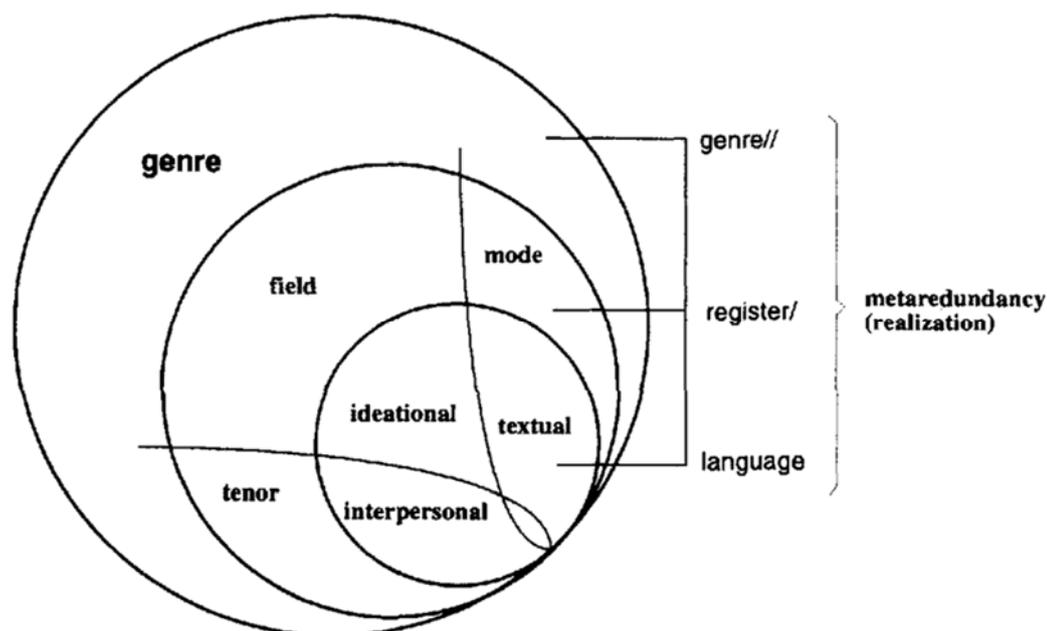


Figure 2.1: Functional diversification of language and social context (Martin, 2005:8)

Both language and social context are stratified systems. Within language, the metafunctions are related to three types of meanings, that is “that of all the *uses* we make of language (which are limitless and changing) language is designed to fulfil three main *functions*: a function for relating experience [ideational], a function for creating interpersonal relationships [interpersonal], and a function for organizing information [textual]” (Egins, 2004:110). As mentioned in section 2.2, these three metafunctions constitute the final phase of language development. Related to these meanings are what Halliday calls “the environmental determinants of text” (Halliday, 1977:131): field, tenor and mode. Following Halliday, Egins (2004:90) defines them in the following way: field is what the language is being use to talk about, that is, the topic or activity, tenor is the role of relationships between participants and mode is the role language is playing in the organization of texts. “Given an adequate specification of the situation in terms of field, tenor and mode, we ought to be able to make certain predictions about the linguistic properties of the text that are associated with it” (Halliday, 1977:131).

Social context is also stratified since it comprises two levels: register (situational context) and genre (cultural context). Instances of language in use, the specific texts

and their component parts are related to the context of situation which can be defined as the context for the language choices used in a particular situation. These language choices are shaped by field, tenor and mode which represent dimensions of the first context circle, the context of situation, corresponding to register (see Figure 2.2 above) and are described in the SFL by register theory. While texts and their instantiations are related to register or the context of situation, genre is part of the context of culture. Genres are staged-oriented activities to accomplish some goal (Martin, 1992) and differ depending on the context of culture in which they are found. In the school context, Christie refers to classroom activity as continuing curriculum genres with the purpose of accomplishing educational goals (Christie, 2002).

2.2.3.2 Curriculum genres and classroom registers

For Christie (2002), the context of culture is represented by the school, which makes possible the emergence of special language systems which she calls *curriculum genres*. These are varieties of language that constitute certain specific school registers within the classroom context. The instantiation of curriculum genres in their immediate context of situation is realized through two registers: the *instructional* and the *regulative* register. In this conceptualization of classroom discourse, Christie heavily draws on Bernstein (2000) who argued that a pedagogic discourse is constructed in two discourses, one refers to the “moral discourse which creates order, relations and identity” which he called *regulative register*. The other “creates specialized skills and their relationship with each other”, which he called *instructional register* (2000:32). Christie (2002) uses Bernstein’s work to develop an account of classroom discourse analysis and re-defines these two main classroom registers. Thus, the *regulative* register is the use of language to organize the classroom activity whereas the *instructional* register is the use of language to work on the specific content at hand. Christie (2002:3) states:

...pedagogic discourse can be thought of as creating curriculum genres and sometimes larger unities referred to as curriculum macrogenres. These... are to be analysed and understood in terms of the operation of two register, a first order or regulative register, to do with the overall goals, directions, pacing and sequencing of classroom activity, and a second order or instructional register, to do with the particular ‘content’ being taught and

learned. As an instance of classroom activity... the two registers work in patterned ways to bring the pedagogic activity into being, to establish goals, to introduce and sequence the teaching and learning of the field of knowledge at issue, and to evaluate the success with which the knowledge is learned.

Christie (2002) also demonstrated that while the *instructional* register was in hands of both the teacher and the students, the *regulative* register was primarily managed by the teacher. However, some recent studies on CLIL have shown the role student-centered activities play to get the students to participate in the *regulative* register (see Pastrana, 2010; Llinares and Pastrana 2013).

As already mentioned in Chapter 1, the multi-layered analytical model used in this study comprises three layers: the discourse layer, the knowledge layer and the interactional layer. In the knowledge layer, the categorization of the data into the *instructional* register helps narrow down the analytical focus by separating the discourse that is only related to content and categorizing it as *instructional* register, from the one that is not, that is categorized into either *regulative* register or social talk. It is in this way that only the discourse categorized as *instructional* is further analysed into speech functions (Egins and Slade, 1997) and cognitive discourse functions (Dalton-Puffer, 2013). On the other hand, in the interactional layer, the *regulative register* helps us understand how interactants control and organize the classroom activity. This is a valuable tool to determine the learners' level of engagement with their partners' contributions and it will be further explained in Chapter 3.

After reviewing the SFL concepts of genre and register and their application to educational settings, the next section focuses on the other main SFL model used in this study, namely Egins and Slade's model of speech functions for the analysis of conversation.

2.2.3.3 From an SFL view of discourse to speech functions

In this section, the SFL conception of oral discourse and, in particular, Egins and Slade's (1997) model of speech functions for analyzing casual conversation will be

presented since it was used to elaborate the discourse layer of the multi-layered analytical model employed in this study. The model will be illustrated with explanatory examples taken both from the corpus used in this dissertation and from Eggins and Slade's study.

In SFL, conversation is seen as a distinctive and organized level of language, whose structure can be related to other dimensions (such as social or cultural) by means of offering functional interpretations of discourse structure (Eggins and Slade, 1997). Martin (2009) situates SFL interest in discourse analysis in Firth's (e.g., 1957a) concern with meaning as function in context. In addition to written discourse, Halliday (1989:98) states the importance of spoken language as it is "coming into its own as a bearer of cultural value and because we learn by speaking and listening as well as by reading and writing".

For analyzing any type of interaction, SFL has two main advantages (Eggins and Slade 1997:47):

- Interactional patterns can be described and quantified at various levels and with different degrees of detail, enabling an integrated and systematic model of language.
- Language and the social dimension are inseparable, so that the linguistic patterns used in interaction both enact and construct interpersonal relationships and social roles.

Moreover, SFL is a powerful approach because "language is viewed as a resource for making not just one meaning at a time but several strands of meanings simultaneously" and it is also "rich in analytical techniques, allowing the analyst to focus on those patterns which are most relevant to specific data and research interests" (Eggins and Slade, 1997:48). Once the evidence for using SFL as an analytical model has been stated, Eggins and Slade (1997:49-50) narrow down their research focus to the interpersonal meanings since, according to the authors, casual conversation is driven by these interpersonal meanings more than by ideational or textual ones. This also results in a contextual focus "the register variable of tenor, of which those interpersonal meanings are the expression" (1997:52).

According to Eggins and Slade (1997), Halliday's interpretation of dialogue approaches interaction from a functional and semantic perspective. It is in this twofold way that it offers both a way of describing dialogic structure explicitly and quantifiably and as an expression of interpersonal relations (1997:180). That is, discourse structure patterns show how participants interact with each other through the choice of different speech functions such as e.g., "demanding", "challenging" or "supporting", with each choice leading to either sustaining or ending interactional exchanges. Through SFL, then, we can describe the meanings of discourse moves occurring in interaction by assigning a speech function to them, at different levels of delicacy (Eggins and Slade, 1997).

Speech functions enable the description of what is being done in each move relying on a linguistic base and their comprehensive identification permits the description of social roles that each interactant is playing. In other words, the social role performed in each particular situation can limit the access to certain speech functions. For instance, in an educational context, teachers can access to any type of initiation, while students are constrained as to what types of initiations they can make (Eggins and Slade, 1997).

Besides speech functions, SFL theory also allows us to connect discourse patterns with interpersonal relations since any dialogue or interaction involves two variables (Halliday 1994: 68-71): a commodity to be exchanged, which can be either information/goods or services, and speech roles to accomplish giving or demanding. The cross-classification of these two variables builds the four basic move types or speech functions that the speaker can use to initiate a dialogue: *statement*, *question*, *offer* and *command*. Whenever a dialogue is initiated, speech roles position both the speaker and the respondent, creating in this way expected responses for each type of initiation (adjacency pairs, (Halliday, 2014). Yet, the expected response may not always be produced, and that is why Eggins and Slade (1997:182) differentiate between supporting responses which lead to agreement, or "expected responses" in Halliday's terms, and confronting responses which express disagreement, or "discretionary alternatives" in Halliday's terms (Table 2.2).

Initiating speech functions	Responding speech functions	
	<i>Supporting</i>	<i>Confronting</i>
Offer	Acceptance	Rejection
Command	Compliance	Refusal
Statement	Acknowledgement	Contradiction
Question	Answer	Disclaimer

Table 2.2: Speech function pairs (Egins and Slade, 1997:183).

Hence, the analytical process starts by identifying the moves and the turn-taking organization of the conversation. Egins and Slade define the move as “the functional-semantic interpretation of the turn-constructive unit” (1997:186). They follow by giving some criteria to determine whether a particular instance is a move or a clause. Once this division is done, the coding of the talk can be done following the speech function system outlined by Halliday. However, the authors note down that “in order to capture the more subtle speech functions of casual conversation, the speech function description needs to be extended in ‘delicacy’ (i.e. sub-classification needs to be more detailed)”. It is with this need in hand that they present “a simplified set of speech functions for analysing casual conversation” (1997:191). These speech functions are firstly comprehensible, “in that all moves should be assignable to one of the classes included” and “they are shown in the form of a ‘network’” (idem).

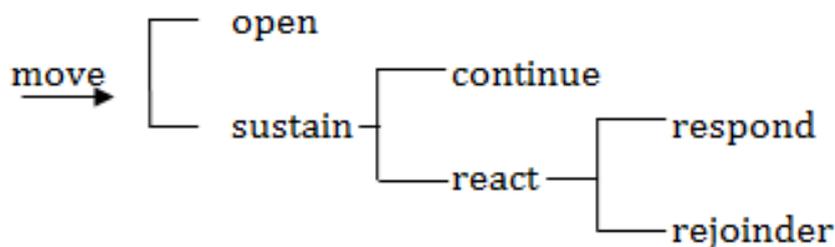


Figure 2.2: Two main move subcategories in casual conversation by Egins and Slade (1997)

As figure 2.2 shows, the two major subcategories in which speech functions are divided are *opening* speech functions and *sustaining* speech functions. The first relate to moves that begin sequences of talk or open up new exchanges, and the second are those that continue exchanges. These two broad subcategories can further be divided into more detailed types of moves. Thus, figure 2.3 shows the classification of the *opening* moves. These can be differentiated into *attending* and *initiating* moves. *Attending* moves are those that set the scene of the interaction while *initiating* moves get the interaction going. Within the *initiating* moves, a further distinction is made drawing on Halliday’s speech roles mentioned above. In Eggins and Slade’s model (1997), the speech role *demand* and the commodity *information* are further sub-divided into two subtypes: *demanding* can include *open* and *closed demands*. *Open demands* seek completion of a proposition whereas *closed demands* are expected to be supported or confronted. Finally, *information* is divided into *fact* or *opinion* for both *statements and questions*.

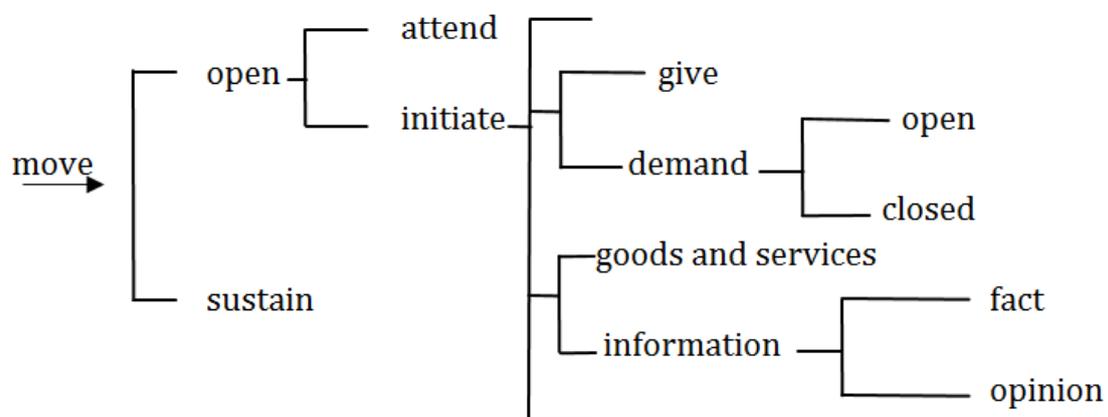


Figure 2.3: Opening moves by Eggins and Slade (1997)

To illustrate the opening moves, Table 2.3 presents examples from Eggins and Slade (1997:194) and from the data corpus collected for this study (in red and italics):

Speech function	Discourse purpose	Example
Attending	Attention seeking	Hey David! Blanca: Roberto!!*
Offer	Give goods and services	Would you like some wine? Maria: ¿Quieres escribir tú?
Command	Demand goods and services	Look Diego: Escribes tú primero
Statement:fact	Give factual information	You met his sister Jimena: Is this one
Statement:opinion	Give attitudinal/evaluative information	This conversation needs Allenby. Eva: I think that a lion... carnivorous
Question: open: fact	Demand factual information	What's Allenby doing these days? Dani: What was that?
Question: closed: fact	Demand confirmation/agreement with factual information	Is Allenby living in London now? Juan: ¿Tú eres de Alaska?
Question: open: opinion	Demand opinion information	What do we need here? Raúl: What do you think..?
Question: closed: opinion	Demand agreement with opinion information	Do we need Allenby in this conversation? Diego: ¿Estás de acuerdo?
Note: *Examples from the data corpus collected for this study are in red and italics.		

Table 2.3: Speech function labels for opening moves

Within *sustaining* moves (see Figure 2.4), Eggins and Slade's classification allows for either the speaker to keep talking (*continuing* moves) or for another interactant to take the speaker role (*react*). In the first sub-category, continuing moves, the following moves can further be distinguished: *monitoring* moves, which focus on the state of the interactive situation; *prolonging* moves, where a continuing speaker provides further information; and *appending* moves, which are midway between the current speaker's *prolonging* moves and another participant's *reacting* moves. Both *prolonging* and *appending* moves can further be classified into *elaboration*, *extension* or *enhancing* moves.

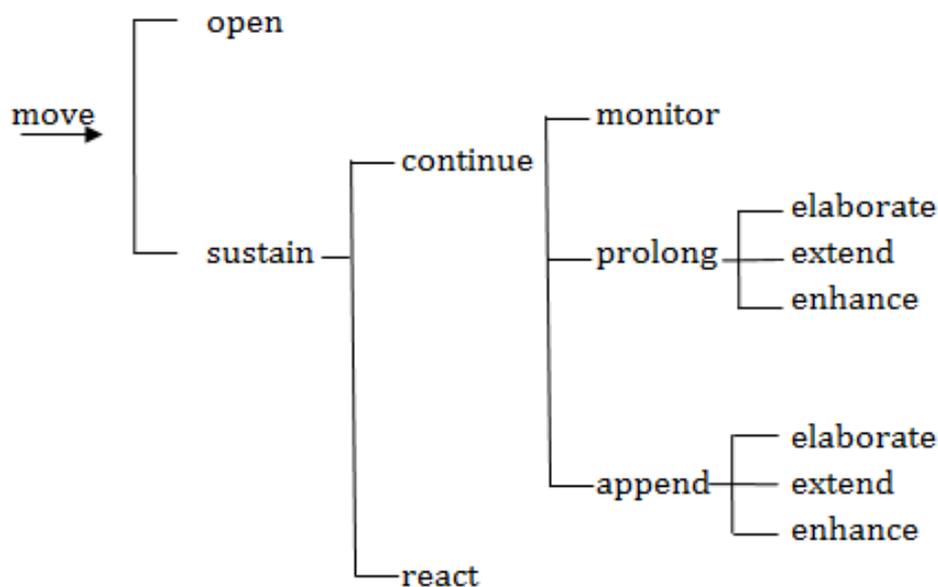


Figure 2.4: Sustaining continuing moves by Eggins and Slade (1997)

To illustrate sustaining continuing moves, Table 2.4 presents examples both from Eggins and Slade (1997:201) and the data corpus collected for this study (in red and italics). When an example includes more than the move to be illustrated the latter is marked in bold. The moves in Table 2.3 without any example from the collected data corpus were not used in the analytical model designed for this study due to their low frequency or absence in the corpus.

Speech function	Discourse purpose	Example
Continue: monitor	Check the audience is still engaged	You know? Right? Lara: That can be hurting her*, you know**?
Prolong: elaborate	Clarify, exemplify or restate	Fay: He is a bridge player, a naughty bridge player He gets banned from everywhere because of his antisocial or drunken behavior. Diego: El león, el león es carnívoro....Ehhh... el león es carnívoro porque sus dientes están afilados
Prolong: extend	Offer additional or contrasting information	Except that she sacked this guy, except Roman. Covi: ...but this is going to do Pedro... and I give him the pencil
Prolong: enhance	Qualify previous move by giving details of time, cause, condition etc.	Fay: Because Roman lives in Denning street also? David: Yep Nick: Not for much longer We are too messy for him Gerardo: Vale no... porque es muy gordo!
Append: elaborate***	Clarify, exemplify or restate previous move after intervention by another speaker	Fay: That's David's sister Liz: Oh right Fay: Jill
Append: extend	Offer additional or contrasting information to previous move after intervention by another speaker	Brad: I don't want to be involved with people, I'd rather be involved with soil erosion Fran: everybody has to be though... But I mean Brad: Or desalination
Append: enhance	Qualify previous move after intervention by another speaker	Brad: Look... see that guy... he plays in the orchestra Fran: Does he? Brad: In the orchestra
Note: *Examples from the data corpus are in blue and italics. **In extended examples, the move to be illustrated is in bold. ***Moves without examples from the data corpus reflect low frequency or absence of such moves in the corpus.		

Table 2.4: Speech function labels for sustaining continuing moves

In the second sub-category of *sustaining* moves, *reacting* moves, two main types are identified: *responding* moves and *rejoinder* moves (see Figure 2.5). *Responses* push the exchange towards completion meanwhile *rejoinders* are reactions which, in some way, prolong the exchange (Egins and Slade, 1997:200). Within *responding* moves, the difference between *supporting* and *confronting responses* proposed by Halliday is used. These categories are also developed into further levels of delicacy. Thus, in supporting moves, Egins and Slade (1997) distinguish among *developing*

moves which imply a very high level of the acceptance of the previous speaker's proposition and which in turn are further divided into *elaboration*, *extension* and *enhancing*; *engaging* moves which are the exchange-compliant reactions to *attending* moves; *registering* moves which are reactions that encourage the other speaker to take another turn; and *replying* moves which are the *responding* moves that imply more negotiation and which are also further developed into *accepting*, *complying*, *agreeing*, *answering*, *acknowledging* and *affirming*. Whereas *confronting* moves only have two types: *disengaging* moves in which the speaker refuses to participate in the exchange and *replying* moves which offer a *confronting reply*. These *confronting replies* are further divided into *declining* moves, *non-complying* moves, *disagreeing* moves, *withholding* moves, *disavowing* moves and *contradicting* moves.

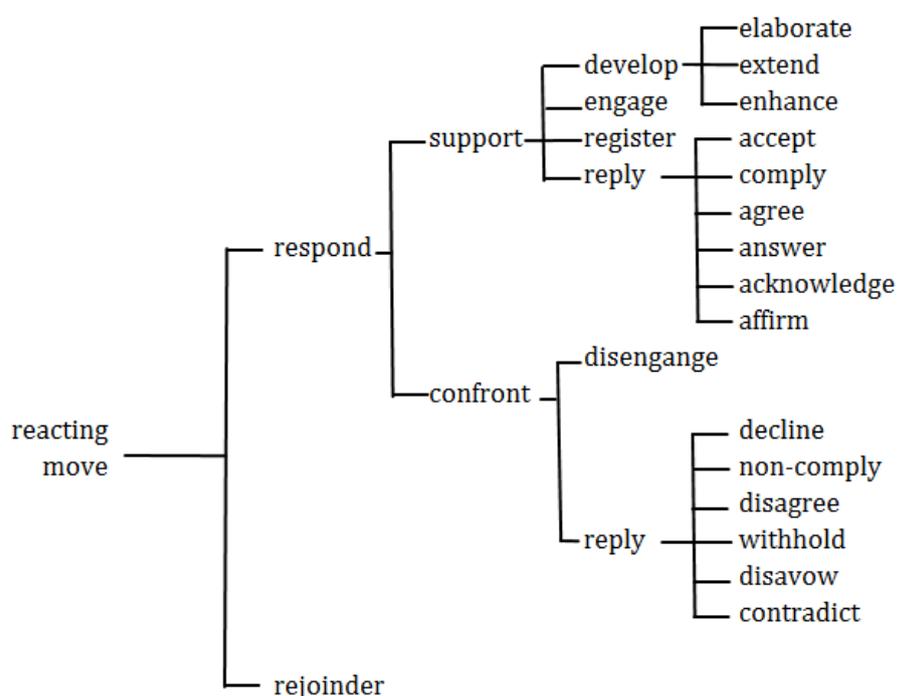


Figure 2.5: Sustaining responsive moves by Eggins and Slade (1997)

To illustrate sustaining responding moves, Table 2.4 presents examples both from Eggins and Slade (1997:194) and the data corpus collected for this study (in red and italics). In some examples a previous question or intervention was added to provide a context for the illustrated move; in this case the latter is marked in **bold**. As indicated above in relation to Table 2.3, the moves without any example from the collected data corpus were not used in the analytical model designed for this study

due to their low frequency or absence in the corpus.

<i>Speech function</i>	Discourse purpose	Example
<i>Engage</i>	Show willingness to interact by responding salutation	Hi-Hi Nick?- Yea?*
<i>Register</i>	Display attention to the speaker	Fay: That's our cleaning lady Brad: Oh! The cleaning lady**
<i>Comply</i>	Carry out demand for goods and services	Can you pass the salt, please? Here (passes it)
<i>Accept</i>	To accept proffered goods and services	Have another? Thanks (takes one)
<i>Agree</i>	To indicate support of information given	Jill is very bright actually, she is very good. She is extremely bright Irene: In that environment... in that environment they can... they can eat... Jimena: Okay, yes, that***
<i>Acknowledge</i>	To indicate knowledge of information given	Do you remember? Oh, yeah
<i>Answer</i>	To provide information	Where's Allenby? In London Saúl: daisy... what is daisy? Lara: One type of... flower
<i>Affirm</i>	To provide positive response for question	Have you heard from him lately? Yes, I have, only yesterday Laura: ¿Las serpientes? Gael: Sí, claro!
<i>Disagree</i>	To provide negative response to question	Is he in London now? No Alicia: [[They have]] they... they take the sunlight! Lara:No!! We are not talking about sunlight *
<i>Non-comply</i>	To indicate inability to comply with previous command	Could you pass me the salt, please? Sorry, I can't reach/ I've got my hands full
<i>Withhold</i>	To indicate inability to provide demanded information	When is he due back? I have no idea
<i>Disavow</i>	To deny acknowledgement of information	Did he? I didn't know that
<i>Contradict</i>	To negate prior information	Roman is absolutely the cleanest guy in the flat But he is TOO clean See example above (italics)*
<p><i>Note: * Moves without examples from the data corpus reflect low frequency or absence of such moves in the corpus.</i> **In extended examples, the move to be illustrated is in bold. *** Examples from the data corpus are in blue and italics.</p>		

Table 2.5: Speech function labels for sustaining responding moves

As already mentioned above, rejoinders are the second type of reacting moves which tend to postpone, abort or suspend the initial speech function sequence (Egins and Slade, 1997:207). As shown in Figure 2.6, there are two main subclasses of rejoinders: *supporting* moves and *confronting* moves. The first ones, supporting

moves, can be further divided into *tracking* moves, which *check, confirm, clarify* or *probe* the content of prior moves, and *response* moves, which resolve, repair or acquiesce a move performed by another speaker. The second ones, confronting moves, are differentiated in two types: *challenging* moves, which confront prior talk by attacking in one of several fronts (Eggin and Slade, 1997:211) by *detaching, rebounding* or *countering* and responsive moves, which react to prior moves by other speakers by unresolving, refuting or re-challenging.

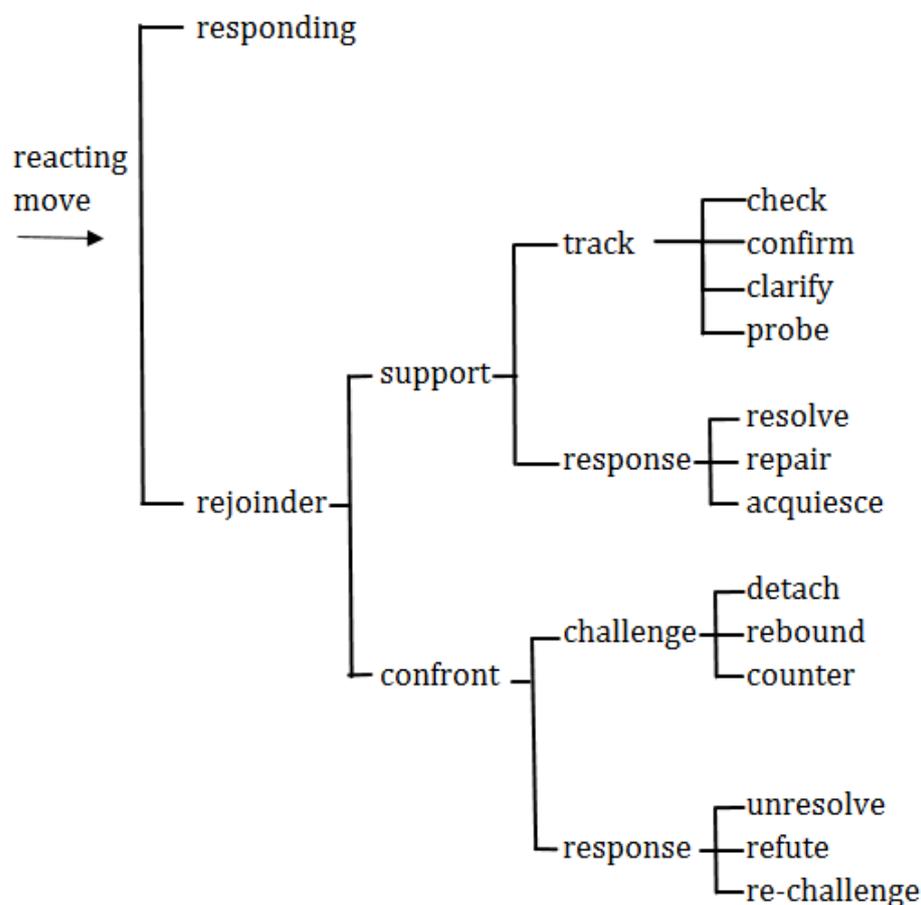


Figure 2.6: Rejoinder moves by Eggin and Slade (1997)

Examples of to illustrate rejoinder moves, Table 2.6 presents examples from Eggin and Slade (1997:213). Since the only rejoinder move used in the analytical model developed for this study is rejoinder-check, it is the only one with the example taken from the data corpus (in red and italics).

<i>Speech function</i>	Discourse purpose	Example
<i>Check</i>	To elicit repetition of a misheard element or move	Straight into the what? <i>Juan: ¿El qué?</i>
<i>Confirm</i>	To verify information heard	Well, he rang Roman, he rang Roman a week ago Did he?
<i>Clarify</i>	To get additional information needed to understand prior move	I didn't know that What he rang Denning Road did he?
<i>Probe</i>	To volunteer further details/implications for confirmation	Because Roman lives in Denning Road also?
<i>Resolve</i>	To provide clarification, acquiesce with information	Yep (answer to the example above)
<i>Detach</i>	To terminate interaction	What, before bridge? So-huh (non-verbal) So stick that!
<i>Rebound</i>	To question relevance, legitimacy, veracity of prior move	Oh, he's in London, so what can we do?
<i>Counter</i>	To dismiss addressee's right to his/her position	You don't understand, Nick, you
<i>Refute</i>	To contradict import of a challenge	You never thought of.. like putting out the garbage I..no, no, no.. I always put out the garbage
<i>Re-challenge</i>	To offer alternative position	Well, he rang Roman, he rang Roman a week ago
Note: Examples from the data corpus collected for this study are in blue and italics.		

Table 2.6: Speech function labels for sustaining rejoinder moves

This network, developed by Eggins and Slade (1997), was used to elaborate the discourse layer of the analytical model in this study because group interaction in the classroom, which is the main focus of this study, is probably more similar to conversation among equals than to other types of interaction. With this aim the model was simplified and adapted to the educational context under study, as further explained in chapter 6.

It should be mentioned however that in classroom interaction research other discourse models have been used such as, e.g. the *Initiation Response Feedback* (IRF henceforth) model developed mainly for teacher-student communication. In this pattern the teacher typically initiates with a question (initiation), the student normally gives an answer (response) and the teacher confirms whether it is correct or not (giving a follow up feedback). This triadic unit by Sinclair and Coulthard (1975) has been used by many classroom researchers. It has even been applied to group work where it was shown that such learning settings seem to facilitate students' participation in all three IRF moves (e.g., Llinares and Morton, 2012; Pastrana, 2010). Mehan (1979) suggested a slightly different version of this triadic unit which he called IRE, where "E" represented evaluation, while Wegerif (1996) adapted the pattern to dialogic teaching context by proposing Initiation Discussion Response Feedback (IDRF) sequence. Although some of these models have been frequently used for the analysis of classroom discourse, they have an important drawback since they fail to consider the meaning element of the move. It is for this reason that this study has adopted the SFL perspective.

2.2.3.4 A summary of SFL elements applied in the present study

We subscribe with Halliday (1993) that the language element should be present in a learning theory and can be seen as learning itself. Therefore, the focus on language is reflected in the discourse layer of the analytical model used for the understanding of content and language integrated learning in the present study. However, the SFL conception of language and its stratification cannot be taken in isolation as it cannot be conceived separately from its context. Two concepts are, therefore, taken from the SFL conception of language and applied in this study: the SFL description of language and its use, which helps understanding how a discussion activity unfolds in terms of speech roles or functions in an exchange between speakers and the idea of context, which has a direct relation with language use. In the present study, the context of situation in which language is used is the classroom. The designed multi-layered model, then, incorporates two elements: at level of the register theory, it draws on Christie's (2002) model of the analysis of classroom registers and, at the discourse level, it uses Eggins and Slade's (1997) model of speech functions for the analysis of casual conversation.

2.2.4 SFL research on language learning: SLA and CLIL

In this section, an overview of applications of SFL to L2/FL and CLIL educational contexts will be given.

In previous sections, we have gone through the concepts of stratification of language and context proposed within the SFL perspective on language. Thus, one of Halliday's first applications of the SF model was used to understand the child's language development process. Drawing on his results, Halliday stated that linguistic structures are developed in relation to the functions they convey. The study of these structures allowed him to produce what became one of his major contributions to linguistic analysis - the development of a detailed functional grammar of modern English (Halliday, 2014). Other SFL authors have extended and explored the grammar of metafunctions and the relation of language with context (Eggins, 2004; Halliday and Hasan, 1985; Halliday and Matthiessen, 1999; Martin *et al.* 1997; Martin and Rose, 2003; Thompson, 2004).

In the preface to his latest edition of functional grammar, Halliday (2014) accounts for 21 possible applications of SFL which reach out the field not only of theoretical concerns related to language but also historical, developmental and educational concerns (2014: xxix-xxx). Their main characteristic is that however they all deal with authentic texts immersed in their naturally occurring context. Following Halliday's ideas, some SFL researchers examined authentic texts from educational contexts, like the ones found in school settings (Christie, 2002; Christie and Martin, 1997; Unsworth, 2000), other authors analysed the language of children in different developmental stages (Painter, 1998), whereas yet the others analysed authentic texts present in everyday contexts, as is the case of casual conversations (Eggins and Slade, 1997). Moreover, nowadays, the field of SFL has extended internationally and its principles and methods are used in many other fields such as the texts present in jazz music (Martin, 2012), or in translation education (Kim and McDonald, 2012) and also in the field of English as a foreign Language (EFL henceforth) or SLA. We will delve deeper into this field in the next section.

2.2.4.1 SFL in SLA

Llinares (2013) names two areas of language development which SFL has mainly contributed to: language development and genre and register theory. The first one has provided a solid view of first language development while the second one, with research studies on subject literacies and academic language use, has resulted in many pedagogical applications (see Martin, 1993). Within these two areas, Llinares (2013) identifies three main groups of SLA studies:

- (a) Applications of Halliday's protolanguage functions to the analysis of pre-primary/primary EFL learners' language use.
- (b) Applications of genre and register theory to EFL writing development in secondary schools.
- (c) Applications of genre and register theory to CLIL secondary school contexts.

Here, the first two groups of SLA studies will be briefly commented on. The third group will be dealt with in the next section dedicated to CLIL.

In the first group, which comprises applications of SFL to L2 learning in pre-primary/primary education, studies are scarce, however there are a few recent ones worth mentioning. One of them is the work carried out by Mohan and Huang (Huang and Mohan, 2009; Mohan and Huang, 2002). In their research, the authors use SFL to analyse form-function relations in students' discourse in a Mandarin Chinese as a FL classroom at the primary level. Another example is the application of Halliday's (1975) functional description of child language to the analysis of young EFL learners' language use and development in a number of studies (Llinares, 2006, 2007a, 2007b; Llinares and Romero-Trillo, 2007). These studies adapted Halliday's (1975) and Painter's (1998) classification of the protolanguage and two-macrofunction stages in the child language to research on the frequency of different communicative functions in 5-year-old learners' oral performance in the L2, across activities and classroom contexts. It has been showed that young learners used similar functions when performing the same tasks or activities regardless of the degree of immersion in the L2, and that their use of the L2 to convey these functions

could be enhanced by implementing specific pedagogical activities adapted to each context. Another study that applied the same model to the analysis of L2 classroom discourse is Riesco Bernier's (2007), in which a tool was developed for the analysis of the regulatory function performed by EFL pre-school teachers.

In the second group, there is interesting research which delves into the application of the SFL theory to FL writing in school contexts. In this area, and contrary to the studies in the first group, SFL genre and register theory was applied for the study of students' writing development in a FL in different parts of the world (see, e.g., Byrnes, 2012; Neff et al., 2004; Yasuda, 2011). Llinares (2013) also reports on an empirical work which she labels as pioneering as it focuses on pre-university levels (Martín-Úriz and Whittaker, 2006). This research was based on the analysis of Spanish pre-university students' writing in English by looking at linguistic and rhetorical features of the produced texts as indicators of the students' development in writing. The use of SFL allowed to identify the aspects in which writing in a foreign language is similar to or differs from the expectations of the discourse community and make explicit statements in linguistic terms.

Within research on the oral aspects of FL or L2 learning, Perret (2000) used the SFL in the L2 classroom to analyse a type of classroom activity known as "oral interviews" which are often used to test adult learners of English in a second language context. He found that the contribute content system, the support discourse system and the types and proportion of dynamic speech functions used by the interviewer differed substantially depending on the proficiency level of the interviewee. In turn, Llinares (2006, 2007b) used a systemic functional taxonomy to analyse learners' speech in different FL pre-school settings. Her findings point to that particular whole class activities encouraged a wider variety of communicative functions or speech acts in students' performance than group activities.

The third group, the application of genre and register theory to CLIL school contexts, is discussed in the next section.

2.2.4.2 SFL in CLIL

As Llinares (2015:62) states, “the contributions of SFL to education, language use and language learning are not only related to the characteristics of language in different registers and genres, but also to the negotiation of social meanings in the context of the classroom”. SFL model relates linguistic choices to the contexts and situations in which these are used, which in the case of educational contexts means establishing relations with the linguistic resources used to participate in classroom activity. In SFL, discourse is interpreted functionally, for its and within its use. This meaning-making view of language can be linked to the *naturalistic* aim of CLIL, that of learning the language through its use. However, research in content-based or CLIL contexts from the SFL perspective is scarce.

In the United States we find the work of Schleppegrell (2004), who took a functional linguistic perspective to analyse one content-based classroom activity. The author examined grammar and discourse in both student-generated and textbook secondary school writing with the aim to identify language demands that students have to face and master in order to guarantee school success. In Europe, we have the study performed by Whittaker and Llinares (2009) in different secondary CLIL classrooms. Their study compared CLIL secondary students’ performance across two subjects and differences were found in their use of process types and types of circumstances (Whittaker and Llinares, 2009). In a comparative study of the use of speech functions in primary and secondary classrooms, Pastrana (2010) found certain differences across levels, but the most significant ones were across activity types. Some authors have used the SFL model through register theory. In fact, Llinares (2015) classifies SFL-based studies on CLIL in three groups depending on the register variables they have focused on. Thus, the first group contains research that examined *field* in the language of social science by analysing how CLIL teachers and students co-construct historical explanations (Llinares and Morton, 2010), how CLIL students use lexicogrammar in history and geography classrooms (Whittaker and Llinares, 2009) and the types of questions triggered when students and teachers participate orally in classroom activities involving different history genres (Llinares and Pascual, 2015). Regarding *mode*, Llinares (2015) mentions studies that have compared different *spoken modes*: explanations in whole-class discussions and one-

to-one interviews on the same topic (Llinares and Morton, 2010) or students' participation across different tasks (Llinares and Dalton-Puffer, 2015). Finally, in reference to CLIL research on *tenor*, she mentions studies that have looked at this register variable at the semantic level, by studying student use of evaluative language or appraisal across tasks, contexts and disciplines (Llinares and Dalton-Puffer, 2015; Llinares and Nikula, 2016; Whittaker, Llinares and McCabe, 2011). Meanwhile, Christie's (2002) model of classroom registers was applied in various CLIL studies (e.g., Dalton-Puffer and Nikula, 2006).

Recently, SFL has extended its presence by combining its focus with other socially-oriented theories such as the sociocultural theory or ethnomethodologically-inspired conversation analysis (see Llinares and Morton, 2010; Llinares, Morton and Whittaker, 2012; Llinares and Pastrana, 2013; Pastrana, Llinares and Pascual, forthcoming). It is in this way, as a combination with the sociocultural framework, that the SFL approach to CLIL is used in the present study.

2.3 Cognitive discourse functions

This section presents the second part of the linguistic approach adopted in this study. We have previously discussed the SFL approach to language development, language structure and linguistic context as situated within conversational interaction and the classroom context. As already mentioned, Eggins and Slade's model for the analysis of casual conversation has been used to elaborate the discourse layer of the analytical model for the present study whereas Christie's (2002) framework of classroom registers has been used for the knowledge and interactional layers. This section presents the theoretical framework which was also heavily drawn on in the construction of the knowledge layer.

Knowledge construction is essentially a meaning-making activity where cognitive mental processes intervene. Kappagoda (2007:186), applying an SFL approach to the construction of knowledge, defines it the following way:

<...> the development of knowledge, no matter how complex, abstract or theoretical, has its origins in the incremental evolution of language, in the ordinary experience of the development of children into adults and in the ways that people develop their talking and writing with each other in a

community and in a context and that each of these activities depends on actual instances of language use. Moreover, it should be said that the construction of knowledge involves a shift in the patterns of meaning in the semiotic systems of a language in order to transform the commonsense into the uncommonsense, the abstract and the technical, but, just as importantly, to engender this transformation without shutting the door on further development and redevelopment of knowledge.

Halliday (1993) describes this process as the transformation of meaning into meaning potential. This is a change that entails not only linguistic aspects, which are the elements to be transformed per se, but also the involvement of the mental abilities to execute a certain type of *abstraction*. It is in line with this need to incorporate the cognitive aspect that the last element in the knowledge layer is presented: cognitive discourse functions (Dalton-Puffer, 2013).

2.3.1 *The need to add the cognitive element*

As Dalton-Puffer states (2016:29), many educators have established classroom talk as the “chief locus of knowledge construction”. However, as she adds, classroom talk is not only a social construct. It is more than just the class activity conceived as a space for social interaction and a promoter of learning. The act of learning must be considered an independent element. In order to do so, she introduces the cognitive element missing in previous socially-oriented linguistic or educational models and identifies it as learning itself (*idem*):

Under a social and contextual theory of learning (implying a social and contextual theory of language), we must assume that participant verbalisations, which make the learning matter intersubjectively accessible and represent knowledge objects, thought processes and epistemological stance, are constitutive of learning itself.

Dalton-Puffer calls these verbal actions *cognitive discourse functions* (CDF henceforth) which appear in answer to constant demands “while dealing with curricular content, knowledge items and abstract thought” (*idem*). The notion of CDF is therefore based on the pragmatically originated claim that the speakers’ communicative intentions concern the desire to externalise their cognitive processes.

2.3.2 Types of cognitive discourse functions

In her conceptualizations of the CDFs, Dalton-Puffer (2013) assumed prototypical communicative intentions about cognitive steps that were necessary for dealing with knowledge and, once these intentions were formulated, the 50 functions obtained from the review of the literature were grouped around them. In this way, 7 types of cognitive discourse functions were obtained (Table 2.2).

The definitions of these 7 elements are accounted as the following. *Classify* (type 1) deals with the assignment of categories or grouping of a concept according to certain ideas; *Define* (type 2) is to communicate the extension of something, *Describe* (type 3) is the transmission of details about observable or metaphoric things; *Evaluate* (type 4) is to communicate one's opinion or view on something; *Explain* (type 5) is to give reasons for and causes of something; *Explore* (type 6) is to give a potential view of something, and *Report* (type 7) is to tell someone about something in which you have a legitimate claim.

As seen in Table 2.7, each of the 7 elements was conceived as a separate category; however, Dalton-Puffer signals that they are not equally populated and some categories are bigger than others. Thus, for example, type 2, *Define*, is a smaller category than type 4, *Evaluate*. Moreover, the CDFs do not differentiate between macro- or micro- functions (both can be contain in a CDF) or rhetorical techniques, like natural and logical patterns, neither do they separate lexico-grammatical from logical relations.

Function Type	Communicative Intention	Label
<i>Type 1</i>	I tell you how we can cut up the world according to certain ideas	CLASSIFY
<i>Type 2</i>	I tell you about the extension of this object of specialist knowledge	DEFINE
<i>Type 3</i>	I tell you details of what can be seen (also metaphorically)	DESCRIBE
<i>Type 4</i>	I tell you what my position is vis a vis X	EVALUATE
<i>Type 5</i>	I give you reasons for and tell you cause/s of X	EXPLAIN
<i>Type 6</i>	I tell you something that is potential	EXPLORE
<i>Type 7</i>	I tell you about sth. external to our immediate context on which I have a legitimate knowledge claim	REPORT

Table 2.7: List of CDFs types and underlying communicative intentions (Dalton-Puffer, 2013:234)

Dalton-Puffer (2013) acknowledges several limitations. Thus, the proposed categories have fuzzy borders, some seem more central than others and in some of them semantic meanings might overlap or they may even be inclusive of each other. For example, *classifying* (type 1) is always part of *defining* (type 2); however not all uses of *classify* are. *Describing* may be related to *explain* (type 5) or *report* (type 7) and sometimes even *define* (type 1); however, we might also find instances of *describe* which are none of the three. Dalton-Puffer (2013:236) declares that “the extent, closeness or looseness of these relations as well as possible hierarchical relationships between them is a matter that still awaits large-scale empirical grounding”. However, she concludes that they must be taken as “cultural models” conceived as cognitive schemas shared by communities of subject-experts and subject-educators belonging to a specific discourse community.

Dalton Puffer (2013) puts together the 7 CDFs in what she calls a “CDF construct” which aims at finding convergences in the curricular goals of second and foreign language education and subject-specific education. It is therefore an instrument for

tackling with the *integrative* aim of CLIL. The author also acknowledges that the term “construct” was used as a way of depriving the categories from essentialist qualities. The growth and specification of the construct is still on the way. In Dalton-Puffer’s words (2013:237):

It is thus not unlikely that the construct, when applied in one specific context, to one specific subject (say, for example, chemistry education in Bulgaria, social studies in Singapore), may take on a very specific shape and perhaps further elements. The same will most likely happen once more subjects and disciplines are taken into account, and once a broader empirical basis is sought for it in actual educational practice. The aim of the construct is thus to serve as a heuristic which enables such more specific explorations.

The 7 types of CDFs were simplified and used as the last element of the knowledge layer needed for this study. They were simplified reducing them to the ones that were more commonly observed in the primary classroom setting. In this way, *Evaluate* and *Explain* were used as defined by Dalton-Puffer (2013) and another CDF (*Fact*) was added that tried to mainly account for *Classify*, *Describe* and *Define*. *Explore* and *Report* were not so commonly found in the primary data however they would also fall under the third category used: *Fact*. This third category may be perceived to entail a type of content more than a communicative intention. However, it is a category that manages to contain the uses of the other three.

The use of the simplified CDFs brings a cognitive element into the multi-layered analytical model proposed in this dissertation. It also deals, like Dalton-Puffer’s “construct”, with the (content and language) integrative focus of the present study. The adaptations made to CDF model will be further explained in Chapter 5.

2.3.3 CDFs and CLIL

Apart from the incorporation of the cognitive aspect into the discourse activity, another contribution of the CDF construct has to do with the convergences in the curricular goals of second and foreign language education (language) and subject-specific education (content). As Dalton-Puffer (2013) claims, the desired dual focus on language and content is actually heralded by FL medium education in Europe, via its label CLIL, where “a dual focus on language and content” is declared (Coyle et al., 2010; Mehisto et al., 2008). However, as Dalton-Puffer (2013:219) continues, the

reality of the CLIL implementations “is driven by the logic of the content-subjects: CLIL lessons are timetabled as content-lessons, taught by specialist teachers of those subjects through the medium of English, and follow the national curriculum of the content subject”. She even adds that research has proven that even those teachers who have dual qualification don’t make a difference (Badertscher and Bieri, 2009; Dalton-Puffer, 2007a;).

Dalton-Puffer proposes to solve the problem of integration in CLIL at the level of different pedagogies. The need is therefore re-directed towards linking the pedagogies of the different content subjects with the pedagogy of language teaching: in developing the understanding of integration, there is a need to look for convergences in the curricular goals of second/foreign language education and subject-specific education(s) and understand how classroom teaching and learning can work towards these goals (2013:219-220). She proposes to answer to this need for integration of the “subject specific cognitive learning goals with the linguistic representation they receive in the classroom interaction” through her CDF construct (idem:220):

Since learning as a cognitive event is not directly observable, the nearest we can hope to get is its observable analogues – in this case classroom interaction between teachers and learners as they construct knowledge together through interacting verbally (e.g. Wells 1999; Mercer 2000).

Dalton-Puffer proposes this construct after analysing the cognitive learning goals from the point of view of subject-specific education and curriculum theory as well as from the applied linguistics perspective. In her words, this construct “has a conceptual foundation in both linguistics and education to stand up to the requirement of ‘integration’ while at the same time being sufficiently constrained to be operationalise in empirical research” (2013:220). This same educational and linguistic foundation has driven this study to unite this model with two theoretical frameworks (SFL and SCT) in order to be able to develop a multi-layered analytical model that seeks to reflect the integrative need of the globalised learning present in the classroom nowadays.

2.4 Chapter summary

This study is set within the integrative context of content and language. To account for this integration, linguistic and educational features have combined to elaborate a complete analytical model destined to suit the needs of this integrative aim present in any learning setting in general and particularly in CLIL. This chapter has specifically focused on the linguistic models, while the next chapter will address the more educational features. The linguistic elements shown here were used to elaborate several layers of the multi-layered analytical model proposed by this research, namely the discourse layer, the knowledge layer, and partially the interactional layer. First, the chapter presented the SFL conception of learning as a social semiotic referring to language development and Halliday's concept of learning a language. Later it delved deeper into the stratified elements of language put forward by SFL theory. Within this perspective, the elements used in the discourse and knowledge layer of this study's analytical model were presented in more detail. In this way, at the discourse level, Eggins and Slade's speech functions for the analysis of casual conversation were discussed, whereas at the knowledge level and within the register theory, Christie's classroom registers were outlined. The last part of this chapter has dealt with the more cognitive approach present in this study: Dalton-Puffer's CDFs.

This chapter has, then, presented the need to approach the language component of this study from a meaningful and functional perspective. It has also added a cognitive concept of learning. The road from the linguistic site of the study aims now at reaching the next stop, the educational part of the model drawing on socio-cultural approaches to learning which will be discussed in detail in the next chapter.

Chapter 3: Learning through talk: educational approaches to group work

Introduction

The sociocultural approach

Vygotsky and the social nature of learning

Development and language

Development and learning: The ZPD

Theoretical approaches to learning

Two views of learning

A sociocultural learning theory

Sociocultural Theory and SLA

SLA as a mediated process

SLA and activity theory

The sociocultural model in CLIL

Classroom interaction

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Exploratory talk and other types of talk in group work

The Thinking Together programme

Raven's test of progressive matrices

Key elements of the TT programme

Results of the TT programme

Exploratory talk in CLIL

Patterns of interaction in group work

Small group talk in the L1

Small group talk in a second or foreign language

Mutuality and equality based interactional patterns

Small group talk in CLIL

Chapter summary

3.1 Introduction

As stated in the previous chapter, to have a full understanding of the integrative perspective in today's globalised learning contexts and particularly of the way content and language are best learnt in integration in group work activities in CLIL settings, there is a clear necessity for two complementary theoretical approaches.

Thus, Chapter 2 presented a linguistic approach to CLIL, framed within systemic functional linguistics, with a special focus on language through the lens of speech functions and register theory. The need for a cognitive-discursive model, represented by the CDF construct, was also foregrounded since it may contribute to a better understanding of the link between language and cognition. This chapter provides an overview of the educational approach adopted in the present dissertation.

The combination of theoretical and methodological approaches in CLIL research has recently received a lot of attention. Llinares et al. (2012:10) underline the need for combined approaches in CLIL research as it allows exploring how language constructs knowledge and how educational activities shape language. This objective is hoped to be achieved in the present study as it is the basis for the elaboration of our multi-layered analytical model. The two aspects highlighted by Llinares et al. (2012) are addressed in this study: Chapter 2 focused on *how language constructs knowledge* by outlining the theoretical basis for the discourse and knowledge layers while this chapter dives into the second aspect, namely *how educational activities* such as e.g. group work in the CLIL and L1 classroom *shape language* and favour *joint reasoning*. This chapter therefore starts with an overview of Vygotskian and sociocultural approaches to learning (section 3.2). Next, an educational perspective on classroom talk will be explained (section 3.3), with a particular attention to the work of Barnes (1977) and Mercer (1995). Section 3.3.3 provides a detailed account of the *Thinking Together* programme (Mercer et al., 1999) developed specifically to improve classroom talk in L1 contexts and adapted to the specific context and aims of this study. Finally, research done on group work interaction and more specifically on interactional patterns within this type of classroom activity proposed by Damon and Phelps (1989) and Storch (2002) will be presented (section 3.4). The model of group work interaction and interactional patterns was used to develop the *interactional layer*, the third and last layer in the analytical model in this study.

3.2 The sociocultural approach

In the previous chapter, the role of SFL and Hallidayan conception of learning, where language has a prominent role, were discussed. However, as Halliday (1993:94) rightfully argues, “most theories of learning, including those that take account of language learning... tend either to ignore language development, or to treat it as just one learning domain”. Yet, his vision of language as social semiotic has been frequently related to Vygotskian conception of learning. Thus, Christie and Unsworth (2007) mention that there is a strong common ground between the SFL and the sociocultural theories (SCT). The work of Hammond (2002) is an example of this common ground since the author elaborates on the notion of scaffolding using both the work of Vygotsky and Bruner and the SFL work as a theoretical background. Gibbons (2002, 2006) also applies SFL principles and Vygotskian notions to give teachers a set of tools and recommendations on how to teach English as a Second Language (ESL henceforth) in mainstream classrooms. Another example is Schleppegrell’s (2004) discussion of the relationship between Vygotsky’s ideas and the SFL principles of language. Wells (1999) also combines these two models to develop a concept of *dialogic inquiry*, which refers to the way dialogue between teachers and learners is considered a determining factor in the process of knowledge construction in different content-subjects.

As Llinares et al. (2012:11) note, both Vygotskian sociocultural theory and the SFL have an eminently social conception of language and learning. According to Vygotsky, an individual socializes with more capable peers through language and this process results in learning and cognitive development. In SFL, language is determined by what we are doing and who we are doing it with and it is through language that experience becomes knowledge. The difference between the two perspectives lies in the focus of attention. Halliday, as a linguist, emphasizes the value of language; while Vygotsky, who has a more pedagogical view, is interested in learning per se. The combination of these two foci is considered highly enriching in a study such as this one. A study set in an oral group work classroom setting can only benefit from the combination of these two theoretical frameworks that bond

through their socially based ideas and incorporate two key elements: SFL - a focus on language for and from its use and SCT - an interactional approach to learning.

In the next section, Vygotsky's theory on development and learning will be presented in more detail in order to help us see how his work became the main building block of the sociocultural theory of learning.

3.2.1 Vygotsky and the social nature of learning

Lev Vygotsky was a Russian psychologist who lived and worked at the beginning of the twentieth century. However, it was not until the 1960s that his work started being translated into English and from the 1980s onward his theory and experimental work on development, language and learning have strongly influenced education in Western Europe, North America and Australia, being considered the anchors of the SCT (Mercer and Littleton, 2007).

In his times, the child's cognitive development was predominantly conceptualized as a constructive process. However, whilst one of his contemporaries, Piaget, viewed this process as highly individualistic involving only the child, Vygotsky claimed social interaction to be at the heart of the developmental process (Mercer and Littleton, 2007:13), emphasizing historically shaped and culturally transmitted psychology of human beings (Steiner and Soubermann, 1978:122). According to Vygotsky, child's development is not a slow accumulation of changes but rather "a complex dialectical process characterized by periodicity, unevenness in transformation of one form into another, intertwining of external and internal factors, and adaptive processes which overcome impediments that the child encounters" (idem:73).

His conception underlined developmental change and showed humans as active participants: at each developmental stage, children acquired the means by which they could affect their world and themselves (idem:123). Cognitive development is presented as a social activity where the child interacts with more capable members (at first, their parents and caretakers) who "mediate the child's encounters with the world-to-be-learned" (Mercer and Littleton, 2007:13). Though this interactional

process the meaning making the resources that society has become slowly available to the child. These ‘cultural tools’, used by the child to interact socially, can be physical tools or objects but also symbolic tools, among which language is regarded as the most important one. As Lantolf states (2000:2), these artefacts are not static and permanent but rather they “are generally modified as they are passed on from one generation to the next...”. In the same way, languages are under continuous change and re-modelation by their users to serve their communicative and psychological needs (Lantolf, 2000).

3.2.1.1 Development and language

For Vygotsky language is a central element of development, as he states that

<...> the most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge... (1978: 24)

Vygotsky defends that it is through speech that the child begins to master his surroundings and, as a result of this, he produces new relations with his environment as well as a new organization of behaviour. It is the creation of these “uniquely human forms of behaviour” which “later produce the intellect and become the basis of productive work: the specifically human form of the use of tools” (idem:25). And the competence in the use of these tools is the key feature in intellectual development; it is also determinant in becoming an effective member of society (Mercer and Littleton, 2007:13).

Learning, for Vygotsky, is a two-dimensional phenomenon: it has a social and a psychological plane. And it is through language that this double dimension is connected. Vygotsky (1978) claimed a close relationship between the use of language as a cultural tool (in social interaction) and the use of language as a psychological tool (for organising our own individual thinking). This is the connection that Lantolf (2000) refers to as “intermental” and “intramental” activity.

The concept of “inner speech” has been frequently connected to the psychological dimension of language and learning (Gibbons, 2008). Inner speech refers to the

private or egocentric speech children use when reflecting on what they are currently doing. The framework is built up as follows: first, the child internalizes the mental processes made evident in social activities and later he moves them from the social to the mental plane. It is through inner speech that this connection is done. Lantolf (2000:15) provides a very clear overview of this process:

[Inner speech] <...> has social origins in the speech of others but that takes on a private cognitive function. As cognitive development proceeds, private speech becomes subvocal and ultimately evolves into *inner speech*, or language that at the deepest level loses its formal properties as it condenses into pure meaning. According to Vygotsky, it is the process of privatizing speech that higher forms of consciousness arise in the inner plane and in this way our biological capacities are organized into a culturally mediated mind.

In Vygotsky's theory of learning, then, language is very important. And talk is not a mere mirror of the child's inner thoughts and processes, it actually does construct and shape thinking (Gibbons, 2008:23).

3.2.1.2 Development and learning: The Zone of Proximal Development

According to Vygotsky (1978:85), "learning and development are interrelated from the child's first day of life". This relation, then, must be taken into account when the child reaches school age since for school learning, at least two developmental levels must be determined: the *actual development* level and the *potential development* level. These levels constitute the concept of the zone of proximal development (ZPD henceforth), which Vygotsky (1978:85) defines as the following:

It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

The child's ZPD would be the attainment or understanding of something he can achieve with support or guidance. For Vygotsky, hence, the ZPD defines the functions that are in process of maturation. As he argues, there is no objective in learning if it is oriented towards developmental levels that have already been attained. The good learning is the one "that is in advance of development" (idem:89) and creates the ZPD. This means that learning triggers a variety of internal

developmental processes which can operate only when the child is interacting with people in his environment, being these adults or in cooperation with peers. Once these processes are internalized, they become part of the child's independent developmental achievement. It is clear that an important role is given to peer interaction since Vygotsky considers it central to learning and development. It is also worth noting that when discussing the concept of peer interaction, whilst Piaget emphasizes the role of interaction between children of similar developmental level, Vygotsky refers to the interaction between the more and the less knowledgeable peers.

In Gibbons' (2008) words, the ZPD is the "cognitive gap" between what a learner is capable of doing alone and what he can do together with a more skilled other. Bruner's (1985) interpretation of the concept adds important implications for teaching, as it is the teachers' task to organise the appropriate environment for the child to reach higher developmental levels. In the field of L2 learning, SLA researchers have developed a series of concepts which are quite similar to the ZPD. One of them is Krashen's "input hypothesis" (Krashen, 1985) which states that for the L2 acquisition to take place, the learner needs access to what Krashen calls "I+1" or input which is slightly complex and challenging for the learner since it contains structures that are slightly ahead of the learner's current level of competence. Another SLA concept closely related to the concept of ZPD is Swain's (1985) output hypothesis which establishes a direct correlation between learner's language proficiency and their linguistically accurate *extended output*. Swain differentiates the decoding of language from the production of linguistic systems that carry meaning. Therefore, when producing output, students are encouraged to deeply process the language or, in Swain's terms, to 'push' or 'stretch' language (Swain, 1985). This concept of 'pushed' language strongly relies on Vygotsky's notion of learning within the ZPD since it is the leading element in students' developing interlanguage.

For Vygotsky, learning and development are two closely interrelated but still different concepts which can never be accomplished in parallel. Development "lags behind" learning and it is this difference that creates the ZPD: "... the initial mastery of, for example, the four arithmetic operations provides the basis for the subsequent

development of a variety of highly complex internal processes in children's thinking" (Vygotsky, 1978:90). From this viewpoint, school learning has to undergo a transformation process in which students should be taught to take into account different ZPDs:

Development in children never follows school learning the way a shadow follows the object that it casts. In actuality, there are highly complex dynamic relations between developmental learning processes that cannot be encompassed by an unchanging hypothetical formulation... This leads us directly to the re-examination of the problem of formal discipline, that is, to the significance of each particular subject from the viewpoint of overall mental development (idem:91).

Each individual can be seen as having a different ZPD for any domain or skill and the guidance needed to achieve a constructive intellectual "re-invention" of some piece of culturally elaborated knowledge (Mercer and Littleton, 2007:17) cannot be the same for everyone and in every skill. Learning is seen thus as mainly a dialectic and social process. This questions the ideas of many educators who, recognizing a varied learning rate among individuals, tend to isolate "slow learners". In order to solve this problem there cannot be only one formula, and Vygotsky proposes to carry out research on the concept of ZPD.

Many researchers have extended on the concept of mediation within the ZPD. The metaphor that has been most widely used is "scaffolding" suggested by Wood, Bruner, and Ross (1976). They describe scaffolding as "a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (1976: 90). In Mercer and Littleton's words, scaffolding "captures the forms of guidance that support learners through the ZPD" (2007:15). Scaffolding happens when a more knowledgeable partner or adult supports the learner in mastering a certain task until the mastery is achieved. This process provides support until the new level of understanding has been obtained. Some psychologists have used this concept for the examination of what constitutes effective instruction. Thus, Wood and Middleton (1975), for example, conducted several studies on how 4 year olds can be taught to assemble a 3D puzzle with wooden blocks and pegs. They observed mothers' attempts to teach their own children how to complete the puzzle. More successful mothers were those who adjusted their level of intervention and support depending on how well their child

was doing. Some authors understand this concept as an “one way” process, that is the expert providing a ready-made scaffold to the novice all at once (e.g., Daniels, 2001). However, other authors view scaffolding as a negotiation process (e.g., Newman *et al.*, 1989). In the SLA field, there is substantial research now that builds on the concept of ZPD and mediation (see e.g., Donato, 2000; Swain, 2000; Van Lier, 2000). However, all in all, the development of the key concepts of Vygotskian theory has only recently begun to address the realities of the classroom (Mercer, 2000).

Lev Vygotsky, then, is considered the founding father of the SCT which put forward the social and cultural element in the developmental and learning process. Within this theory, both processes are circumscribed in the context (social and cultural situations) in which they occur. As the present study is based on a sociocultural view of learning, the following sections outline the main characteristics of the SCT in terms of learning in general and language learning in particular.

3.2.2 Theoretical approaches to learning

3.2.2.1 Two views of learning

At the beginning of the twentieth century and prior to the emergence of the SCT, two main approaches to teaching and learning implicitly influenced by language dominated the educational minds: “banking education” and “progressive education” (Wells, 1999). These two orientations, one more traditional and the other more progressive, as its name indicates, entail very different conceptions of teaching and learning. However, they are based on two common assumptions. The first one is that learning is an individual phenomenon and psychological in origin, and the second is that language is considered to be secondary in the learning process, being a mere vehicle for the transmission of ideas or knowledge. The collaborative and meaning-making nature of learning is left out. These common aspects led Halliday (1993) to strongly claim the necessity to reconsider the lack of importance given to language in learning theories.

The first learning theory can be identified as the traditional transmission theory, the “empty vessel” model of teaching and learning or, as put forward by Freire (1983), “banking education”. In this model the teacher has the main role, being the “possessor of all *knowledge* and *skills*” and whose duty is to “transmit” that knowledge or skills into the empty minds of students who are viewed as “passive recipients”. Learning and development are identical in this approach and the environment is limited to providing ready-made concepts that must be assimilated by children. From this perspective a classroom is a place run and controlled solely by the teacher who transmits skills and knowledge categorized and organized in terms of their complexity through memorization and repetition techniques; thus, there is a minimal negotiation between teacher and student. In this conception of learning, language, when it is at all considered, is seen as a mere conduit of knowledge, being it content or information.

It is often believed that the supremacy of this model in the twentieth century might be due to its connection to the predominant model of communication that existed at that time in which communication was defined as information transfer and language as the means of transport used to fulfil this mission. Such perspective results problematic for some SLA researchers since it implies a separation between language and content in ESL context “where the target language is also the medium of teaching and learning in the curriculum” (Gibbons, 2008:16). This concern can be extended to CLIL context under study, where content and language integration is its determining factor.

The second predominant learning theory is sometimes referred to as “progressive”, being developed from the work of Dewey and Piaget. In their perspective, the learner is at the center of the educational process. This means he is not seen as a mere receiver of information but is positioned in the center of an activity of intelligent inquiry and thought. The child is an active learner and constructs his knowledge by integrating new concepts into his previous experience. It is a theory that is concerned with the learner’s struggle to understand and, thus, with individual cognitive and personal development (Gibbons, 2008:18).

In this framework, the teacher's role becomes to stage-manage appropriate learning experiences or to be the learning facilitator whereas the child's language abilities are seen, largely, as resulting from more general and cognitive abilities. When applying this theory to the classroom, the major organizing principle is the individual child's active construction of knowledge, with the teacher's role being to choose the appropriate learning experience and organize it. Learning is only possible when the student is ready to move forward and, as Piaget explained, it is the child's developmental processes in interaction with their environment is what provides timing and motivation. Teaching is therefore seen as mere "facilitation" of this process and learning is mainly developed along a defined set of biologically determined stages.

These ideas led to a pedagogical approach in which the curriculum needs to be connected to the developmental stages of the learner, and students are responsible for their own learning once provided with a supportive learning environment. Moreover, students are also seen as the sole responsible of their success or failure as the role played by educators in the teaching and learning process is minimized. In this view, the language is the outcome of the sensimotor activity involved in the child's exploration of the physical world or more general cognitive abilities (Gibbons, 2002, 2008). This approach is undoubtedly more "child-centered" than the first one which allowed to start considering the role of language, and of spoken language in particular, in the learning process. Thus, for example, the Plowden Report, published in Britain in 1967 (Blackstone, 1967), highlighted the importance of discourse in the development of understanding in the classroom. That was the starting point to place spoken language in a leading role across all areas of the school curriculum. Meanwhile, some researchers also turned their attention to the spoken language in the classroom (e.g., Barnes, 1976; Wilkinson, 1965). However, this interest was peripheral and in minority since the predominant conception held by the progressive theorists viewed language as a mere means for representing and transmitting already-formed inner meanings rather than a matter of analysis per se.

These two "apparently" different visions of learning and conceptions of the teacher role are, however, very similar in their perception of the child as a lone and "self-

contained” learner and the idea that learning takes place *within* the individual. The sociocultural approach to learning, on the contrary, sees it as occurring *between* individuals and is therefore an alternative model which has become increasingly influential both in research community and among practitioners. The most relevant contribution of the SCT is its emphasis on the social and collaborative nature of learning and language development. The roles of teacher and learner are interrelated, with both parties taking active roles in the learning process (Gibbons, 2008:8). The next section discusses this approach in more detail.

3.2.2.2 A sociocultural learning theory

From a sociocultural perspective, learning must be understood within its context or within the learning situation it takes place. The intertwined conceptions of learning and development, the idea of cultural and symbolic tools and the ZPD put forward by Vygotsky are the main elements and home of further development within the stakeholders of the sociocultural framework.

Language becomes a central element and a subject to critical analysis in the sociocultural view of learning since classroom interaction is considered the basis for the teaching-learning process to take place, as it is language that takes students to the thinking sphere. Sociocultural theory strongly links speech and thought in such a way that “publicly derived speech completes privately initiated thought” (Lantolf, 2000:7). Therefore, any analysis of the spoken word must be connected with thinking and cognition. This view goes hand in hand with the Hallidayan (1993) conception of language as a social semiotic as many researchers have pointed out (Christie and Unsworth, 2007; Gibbons, 2002, 2008; Hammond, 2002; Llinares et al., 2012; Schleppegrell, 2004).

Mediation is another very important aspect in the SCT. As explained in section X.X, human beings use physical or symbolic tools to build their relationship with the world around them. Since these tools change through time, each generation must “rework its cultural inheritance to meet the needs of its communities and individuals” (Lantolf, 2000:2). The sociocultural concept of learning is, therefore,

eminently social and mediated. It is in this context that Vygotsky's (1978) notion of the ZPD, that is, learning through a collaborative dialogue between the expert and the novice, and other related concepts such as collective scaffolding (Wood *et al.*, 1976) are situated.

Discourse as learning becomes yet another key aspect and a determining factor in the sociocultural approach to learning. In section 3.3, we will delve deeper into the specific aspects that this concept entails for the present study, which explores the role of talk in small groups as a form of collaborative learning. However, before that sociocultural approaches to SLA and CLIL will be examined.

3.2.3 Sociocultural Theory and SLA

Drawing on Vygotsky's work, SCT has gradually evolved into two branches of research: mediation research and activity theory research. The first branch is the one more present in the field of SLA. Its basic principle is that the human mind is primarily mediated by linguistically based communication (Lantolf, 2002). The second branch, centred in activity theory, also defends that mental functioning is mediated. However, it adds a framework to theorize mediation as originated by: i) the experiences of others in the present (social aspect); ii) the experiences of others from the past (cultural aspect); and iii) the immediate experiences of the individual with these others and with the artefacts they constructed (Lantolf, 2002:104). This section hence provides an overview of significant SLA research in both branches. More detailed attention is given however to the aspects directly connected with the analytical focus of this study, namely peer interaction within the first branch and task-based learning within the second branch.

3.2.3.1 SLA as a mediated process

Two general perspectives have emerged from the first branch within the SCT: social mediation by experts and peers and self-mediation. As this study is contextualised in peer interaction, more attention will be given to the first perspective.

Most of the research on expert and novice interaction has tried to relate good mediation practices to the L2 attainment. Thus, some researchers have found that teachers' support has a positive effect on the learners' ZPD (e.g., Aljaafreh and Lantolf, 1994; Nassaji and Swain, 2000); yet others have put to doubt the casual relationship between teachers' scaffolding in the ZPD and learning (e.g., Hall, 1995; Mitchell and Myles, 1998). For example, Aljaafreh and Lantolf (1994) examined mediated learning in the ZPD and found a positive interrelation between the two factors as mediation decreased as the students' level of the L2 attainment increased. Meanwhile Hall's (1995) study of secondary school Spanish FL classroom revealed a highly negative relation as it showed how when the teacher held an authoritative role in the class and tried to impose on the learners what needed to be done, the learners reacted with a closed up attitude that made it impossible for the teacher to interact with them in their ZPD.

A comparative research in this field has enlightened the way teachers can engage learners in their ZPD. Donato and Adair-Hauck (1992) compared teachers' monologic instructional style with a dialogic style. In a similar way, Anton (1999) compared teachers with different classroom control techniques. These studies have shown that a more dialogic type of teaching results in a more engaged and active participation of students and a more enriching L2 acquisition (Kramsch, 2000) where students not only learn how to use new linguistic signs but also become aware of the semiotic choices offered by the target language. Kramsch (2002) analysed how a dialogic teacher working on the students' written summaries of a story, managed not only to make her students aware of the intended and potential meanings of what they had written, but also scaffolded them into experiencing themselves as authors, interpreters, narrators and critics in their L2.

Moving to social mediation among peers, the most important work on the collaborative construction of knowledge in the FL in group work was done by Donato (1994). In his study, Donato (1994) investigated L2 French learners working on a familiar task with the objective of determining how students co-constructed language knowledge and communicative performance in classroom settings. After performing his study he concluded that dialogic interaction among learners had the

potential to foster appropriation of linguistic knowledge. He argued that individuals worked together to form a “collective expert” and could this way perform tasks collaboratively that they couldn’t accomplish individually. Drawing on his results, other researchers also started examining peer mediation. Thus, Ohta (2001) found that learners seem to be aware of the moments when and when not to offer help in a way that shows them sensitive to each other’s ZPD. Platt and Troudi (1997), however, proved that elementary school children had more problems being sensitive about their classmates’ ZPD than secondary level learners. Another important study is Swain and Lapkin’s (1998) on language related episodes (LRE henceforth) during collaborative dialogues among French immersion students. The authors found that when facing problems students generated talk that produced and assessed solutions to problems. The effectiveness of learner verbalization of problem solving strategies in collaborative dialogue is also examined in Swain (2000). Di Camilla and Anton (1997) have also proven the effectiveness of self- and other repetition in peer mediation as it seems to stabilize mutually constructed scaffolding. Finally, Villamil and Guerrero (1996) examined the effectiveness of mutual mediation in a writing activity.

Within research on peer mediation, some studies have focused on the students’ use of the L1. This is a controversial issue in SLA as some researchers view the use of the L1 as inhibiting the FL development whereas others consider it either a meta-talk that would eventually shift into the L2 or merely a psychological tool that students need to resort to sometimes and that need not be banned from the L2 classroom. In spite of the number of studies that have addressed this issue (e.g. Brooks and Donato, 1994; Di Camilla and Anton, 1997; Swain and Lapkin, 1998, 2000), we will not delve into this field as it is not the focus of the present study.

The second type of mediation is self-mediation, defined by Vygotsky as the private speech in which we gain control over our ability to remember, think, attend, plan, evaluate, inhibit and learn (Vygotsky, 1987). Private speech has been well attested among L2 speakers (Appel and Lantolf, 1994; Frawley and Lantolf, 1985; Guerrero 1999); however, its function in acquiring an L2 is a complex topic that is still in its incipient stages.

3.2.3.2 SLA and activity theory

While acknowledging the essential role that language plays in the teaching and learning process, being the most powerful cultural artefact, activity theory accounts for other artefacts that also mediate human mental activity (e.g. computers, videos, tasks). This branch is the least developed in the field of SLA; however, some authors anticipate it as a future growing field (Lantolf, 2002). Within this branch we find task-based language learning (TBLL henceforth also known as Task Based Learning, TBL) and technology-mediated language learning, one of the most popular types of which is computer-based or computer-assisted language learning. Due to the objectives of the present study, this section focuses only on the TBLL.

TBL is a Task-based language teaching and learning answers to the need of a multidimensional learning, as it engages the student in an activity that requires the integrated use of several skills. It is centrally constructed on the semantics of the language, as the primary goal of the student while performing the task is to find that 'meaning' and it is learner centered, as students are the main actors and have many opportunities for using their initiatives and interacting with others. Foley (1991:73) defines task based L2 learning as "an enabling process that gives learners the opportunity to realise their agency as linguistically constituted beings and therefore to participate fully in the community of practice". Some of the most important research performed in this field has been done by Roebuck (1998), who investigated how learners positioned themselves as agents in carrying out written recall tasks. Other authors that have investigated this field are Coughland and Duff (1994), who examined how the same learner and different learners employ their L2 agency in different ways. Ellis (1999) problematized the fact that in TBL, the activity theoretic perspective fails to sustain the grading of task independently of learners' ZPD. His view emphasizes language acquisition over learner agency. The advantages and drawbacks of each stance cannot be addressed in this study. However, as Lantolf points out (2002) problems may arise whenever learners fail to show the behaviours predicted by the task in determining whether the fault resides in the learner or in the task (idem: 112). The present thesis cannot address these discussion points nor can it give a more a more in-depth overview of TBL and TBT, therefore for a more detailed account of this approach see Ellis (2003).

This thesis overview has aimed to give a perspective of the SCT present in the SLA field and, especially of those areas more connected to this study. In the next section, the sociocultural theory will be situated within the CLIL context by relating the integrative aspect of CLIL to the sociocultural conception of learning and the role of language in learning.

3.2.4 The sociocultural model in CLIL

The recognition of the social nature of learning and the importance of language as the tool mediating the construction of knowledge have been highlighted as the most relevant characteristics of the sociocultural theory which can be applied to the integrative aspect of the CLIL classroom (Moate, 2010).

From a sociocultural perspective, language learning is the locus “where language use and language learning can co-occur. It is language use mediating language learning. It is cognitive activity and it is social activity” (Swain, 2000:97). Language learning is oriented thus not only at the students’ individual development of the L2 but also to the expansion of the linguistic resources of the L2 learning community students belong to. This concept of language learning as “a resource for participation” (Zuengler and Miller, 2006:37) in the community clearly aligns with the conception of learning a language in a *naturalistic* way predominant in CLIL (Dalton Puffer, 2007).

In the CLIL classroom, students are being simultaneously apprenticed into two communities: the educational community of the classroom and the expert community of the school subject (Moate, 2010). Sociocultural research defends the fact that learning the language of a subject community is actually learning the way this community thinks and that one cannot be learnt without the other (Lemke, 1989; Mercer and Littleton, 2007; Mortimer and Scott, 2003). Participation in these two communities creates different language demands, which are present in L1 settings but are more salient in CLIL contexts (Moate, 2010:40).

The similarities between the SCT and CLIL have been put forward by several authors who have applied the sociocultural framework to the CLIL context (Moate, 2010; Llinares and Morton, 2010; Llinares et al., 2012). Similarities have been drawn mostly from the social or interactive conception of language learning both present in the SCT and CLIL. Thus, in her article Moate (2010) explored the integrated nature of CLIL and proposed a more in-depth understanding of this integrated relationship from a sociocultural perspective. Llinares and Morton (2010) focused on historical explanations in CLIL classrooms. They combined SFL, and more specifically the history genre, and conversation analysis approach with sociocultural applications to the analysis of interaction and participation in the classroom in order to determine the role of different types of activities in displaying language and content knowledge by CLIL students. Llinares et al. (2012) also combined three theoretical perspectives namely the SCT, SFL and social models of SLA to examine the roles of language in CLIL and depicted as subject literacies (genres and registers), classroom interaction (dividing classroom talk into focus, approach and action) and language development (expressing ideational, interpersonal and textual meanings). The next section provides a review of research on classroom talk which was used as a base for the interactional element of the multi-layered analytical model in this study.

3.3 Classroom interaction

Classroom interaction has been studied using different perspectives: interactionist approach which used observational instruments that could be ad-hoc or system-based, discourse analysis approaches, with Sinclair and Coulthard's (1975) IRF model being one of the most popular ones, conversation analysis (CA henceforth) which is interested in language as a means for social interaction, and sociocultural approach which sociocultural perspective establishes educational success and failure in the quality of educational dialogue. However, given the focus of this study, here we will only examine classroom interaction from a sociocultural perspective.

3.3.1 A sociocultural perspective on classroom interaction

It has often been stated that interaction is the most important aspect in the curriculum and classroom learning because it is through language in interaction that learners access new knowledge (van Lier, 1996; Walsh, 2011). This is the case in any type of learning that is set in the school context. More so, if we are dealing with language-related activities such as learning a FL, learning a content subject through a FL or simply learning any discipline through language. In 1976 Douglas Barnes already had a clear idea of this central element in formal education since he considered school to be more than simply a place where communication goes on. If it were so, schools would be comparable to other places like a bus, a shop or a building site. As this author explains, schools are different: “In one way schools are different... *they are there purely for the talk*” (Barnes, 1976: 14, original emphasis). According to Barnes (2008), one of the first psychologists to acknowledge the role of talk in organising learners’ understanding of the world was Vygotsky. Meanwhile, Hardman (2008:134) resorts to the work of a Russian philosopher Bakhtin as having “a similar emphasis on the social origins of the individual’s language repertoire”. In Hardman’s words:

Bakhtin argued that dialogue pervades all spoken and written discourse and is essential where meanings are not fixed or absolute. It is therefore central to educational discourse and learning because of the need to consider alternative frames of reference (2008:134).

These early theorists worked within a social-constructivist view of learning which entails students’ active involvement in classroom discourse for learning to take place. Authors like Barnes, Britton and Rosen (1969) also critiqued teachers’ abuse of transmission ways of teaching and suggested introducing the student as an active participant in the classroom dialogue. Such actively engaged forms of talk became known as *exploratory forms of talk* (Barnes, 1976).

Barnes (1976) sought to make visible what was happening in classrooms by analysing the different discourses held by teachers and students. According to Green, Yeager and Castanheira (2008: 117), “he showed how classroom life was socially constructed in and through the discourse-in-use, and how individuals as

well as the collective construct opportunities for learning, and social and academic identities”.

According to Barnes (1976), in the study of classroom interaction two major agents should be taken into account: teachers and learners since “the communication system indicates to pupils the boundaries of who they are and what they may do” (1976:17). The teacher and the student jointly set up the context or the communication system of the classroom; however, it is the teacher who shapes “every pupil’s participation in learning” (idem:33). In order to show how this takes space in the classroom, Barnes (1976) elaborates a learning diagram (see Figure 3.1).

As shown in the diagram, the teacher has control of communication, it is an authoritative figure that dominates the discourse. The arrow representing variable strength determines how authoritative the teacher is, that is, whether she has a tight control of the class exercising a monologic type of discourse or allows for a higher participation of students through a more dialogic type of teaching. However, classroom talk involves two participating parties, teachers and students. Therefore, pupils’ expectations also affect interaction and are represented at the opposite side of the diagram. Students have certain ideas about their role and that of the teacher and can be more or less flexible in these ideas. The resulting interactions are immersed in the social context and include the use of the communicative system. Therefore, such interactions can be of different kinds, creating also very different discourse structures. Pupils’ knowledge and skills are used in these interactions and projected into the use of strategies for learning, this generating the possibility of different types of learning.

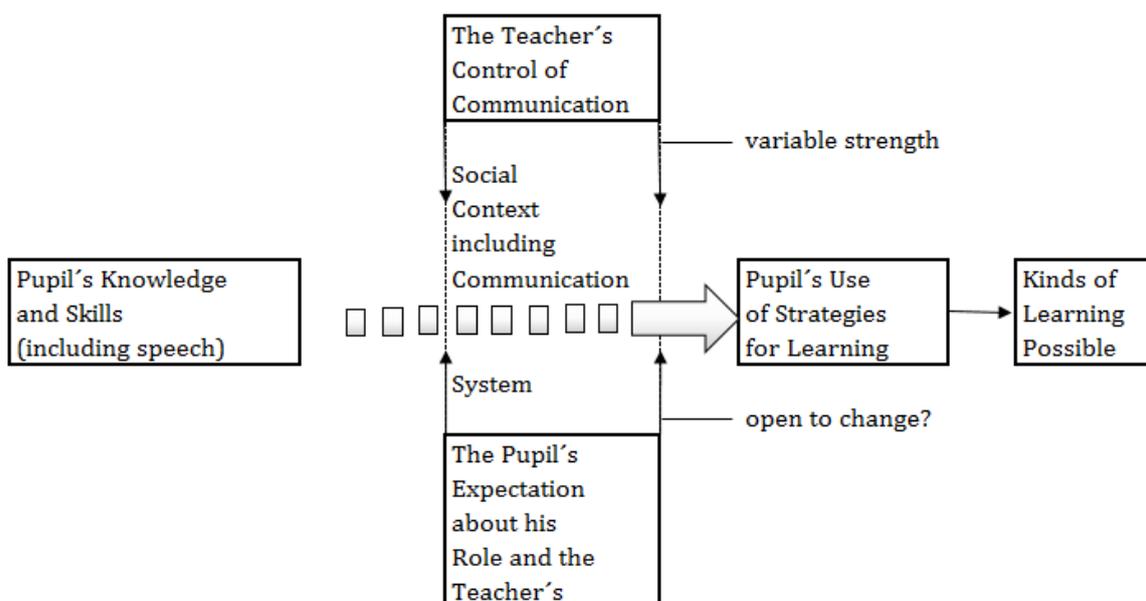


Figure 3.1: Learning diagram (Barnes, 1976:33)

Drawing on Barnes (1976) learning scheme, Hardman (2008) describes these discourse structures. He divides educational talk into talk either between pupils and teachers or only among pupils. He describes the first, teacher-student talk as usually 'asymmetrical', "by which we mean one of the participants (usually the teacher) leads the interaction and has the privilege, and responsibility of being in control" (idem:56). The second he describes as more 'symmetrical' talks, "in which partners have a more equal status and potential for control" (idem:56). This second type is frequent when groups of pupils work together. Finally, Hardman states how "classroom talk does not fit neatly into these two categories". (Hardman, 2008: 56). The "asymmetrical" talk referred to by Hardman can be linked to the IRF pattern, which has often been observed to constrain and restrict students' possibilities of participation in the construction of knowledge. This is so because it is the teacher who selects the topic and the next speaker, often preventing students from pursuing their own ideas and interpretations (Barnes, 1976; Cazden, 2001). Hardman also adds that, from an educational perspective, it is important that both asymmetrical and symmetrical types of dialogue happen in classrooms. However, there is a tendency to reduce classroom dialogue into teacher-students asymmetrical interaction where the IRF pattern prevails. In the opposite direction, teaching drives

away from being merely transmissive or following an IRF pattern or “recitation script” in Hardman’s (2008) terms and delves into a more “dialogic pedagogy where teachers are helped to break out the limitations of the recitation script through higher order questioning and feedback strategies which promote a range of alternative discourse strategies” (idem:133).

Other researchers have also worked along these lines. For example, Alexander (2004) suggests a notion of “dialogic talk” which is described as being:

- *collective* (teachers and students address the learning task together),
- *reciprocal* (both parties involved listen to each other to share ideas and consider alternative viewpoints),
- *supportive* (students articulate their ideas freely without fear of embarrassment over “wrong” answers and support each other to reach common understandings),
- *cumulative* (teachers and students build on their own and each other’s ideas to chain them into coherent lines of thinking and enquiry), and
- *purposeful* (teachers plan and facilitate dialogic teaching with educational goals in mind).

Although all the above listed features of dialogic teaching are important, managing the quality of classroom discourse is considered essential (Nystrand *et al.*, 1997; Cazden, 2001). As Alexander (2008:112) argues, it is highly recommendable to first concentrate on promoting those features which are related to the ethos, dynamics, and affective climate which means that the teacher should aim to foster collective, reciprocal and supportive aspects of classroom talk.

Wells’ (1999) notion of “dialogic inquiry” is concerned with students being actively involved in the ongoing activity and having a certain sense of agency. Mortimer and Scott’s (2003) “dialogic communicative approach” provides a perspective on *how* science teachers can work with students to successfully develop their ideas in the classroom. This approach allows to characterise teacher-students talk in the classroom in terms of whether it is *interactive or non-interactive* and *dialogic or authoritative*. Interactive/non-interactive dimension refers to participation rights and describes whether the teacher allows or not for the participation of students whereas

authoritative/dialogic dimension refers to the openness of classroom talk to exploring different points of views and ideas.

Dialogic teaching and learning goes hand in hand with the sociocultural conception of learning and understanding. According to Mercer and Littleton (2007:135), the moment has come to develop a unifying sociocultural, dialogic theory of how knowledge is jointly constructed and how learners achieve greater understanding. Following Barnes (2008:3), “[m]ost of our important learning, in school or out of it, is a matter of constructing models of the world, finding out how far they work by using them, and the reshaping them in the light of what happens”. This implies that in school, knowledge is continuously being shaped and re-shaped and although both students and teachers are actors in this process, it is students who gradually achieve greater understanding and the best way to do it is through talk. Therefore, teachers are given the encouraging and supporting role but they cannot work on understanding for the students. According to Barnes (2008:5), the flexibility of speech makes it easy for students to try out new ways of arranging what they know, and it is also easy for them to change these ways if they seem inadequate. However, not all types of talking – and in Barnes’ opinion, of writing too – foster this conception of understanding since it is often “a matter of imitating what other people have said or written” (idem).

In sum, to account for the important role of classroom talk and the need to improve its quality in the educational settings, the words of Mercer and Hodgkinson (2008: xi) can be recalled: “It is now appreciated that classroom talk <...> is the most important educational tool for guiding the development of understanding and jointly constructing knowledge”. Nowadays, as constructors of their own knowledge, learners must be given the active role and more responsibility for their own learning as well as for “its relationships to the world of understandings, beliefs and values that [the student] inhabits” through “conscious participation” and “active learning” which should be *reflective* and *critical* (Barnes, 2008:14). This can be done by requiring them to think about their learning and “giving them more access to the grounds upon which the knowledge they were learning was based” (idem) in order to help them avoid the mere rehearsal of inert information. The idea behind this is

establishing and engaging students in a meaningful “culture of talk”. Scott (2008:34-35) describes it as a classroom climate or working atmosphere where students feel happy and confident in expressing their views and where they will listen thoughtfully to the contributions of others and to the words of the teacher.

Symmetrical interactions in which students work together, therefore, offer a different way of working on understanding. They entail the active participation of students, which enable some of them to ‘talk themselves into understanding’. In this scenario, when the learning theories started considering the *social* element of learning, the use of group work in the classroom has begun to be highly valued as students can share in and practice forms of academic discourse of the classroom that are normally used only by the teacher (Mercer, 1995). This means sharing, comparing, contrasting and arguing from different perspectives, providing opportunities for instructional conversation or the shared construction or negotiation of meaning (Hardman, 2008:136). It also means that group or pair work affords students more opportunities to develop linguistically and cognitively (idem). Yet, it has to be mentioned that even in a symmetrical interactional structure such as group or pair work, not all talk among students leads specifically to a better understanding or fosters learning.

3.3.2 Exploratory talk and other types of talk in group work

In his research on classroom interaction in groups, Barnes (1976) identified what he called *Exploratory Talk* (ET henceforth), a type of talk which he thought drove towards meaning because it involved the active participation of the learner and reflected an ongoing thinking process. ET helps learners to assimilate and accommodate newly gained knowledge to the old one (idem:28). According to Barnes (2008:5), “[e]xploratory talk is hesitant and incomplete because it enables the speaker to try out ideas, to hear how they sound, to see what others make of them, [and] to arrange new ideas and information into different patterns”.

Dawes et al., (2004:7) refer to ET as the talk that happens in groups “when people engage critically but constructively with each other’s ideas”. In classroom contexts,

student engagement in this type of talk while carrying out collaborative activities has several advantages: (i) children learn to produce their own ideas; (ii) they learn from the ideas of others; and (iii) they develop speaking and thinking skills which enable them to work more effectively in teams and to take an active role in society (idem:3). However, Dawes et al. report that this learning-promoting type of talk hardly ever occurs in primary classrooms.

In their extended research on group problem solving activities among primary school students, Neil Mercer and his colleagues (e.g., Mercer, 1995; Wegerif and Mercer, 1996; Wegerif and Scrimshaw, 1997) found that when students produced ET, suggestions were offered for joint consideration, which often were challenged and counter-challenged, but the challenges were justified and alternative hypotheses were offered, and individual and joint reasoning was visible in the talk. Yet, the authors also noted that students more frequently were engaged in two other types of talk which they called *Disputational Talk* and *Cumulative Talk* (see Table 3.1). Thus, in the former, decisions were taken individually and expressed by short statements and counter-statements, whereas in the latter, group members proposed one opinion after another without explaining the reasons for exposing them and every participant intended to please the rest of the group or at least to avoid confrontation. So, according to Mercer (1995), only ET promotes actual learning since it is essential to achieve effective and sound communication, grounded in accountable and visible reasoning.

Type of talk	Main characteristics
<i>Disputational talk</i>	Predominance of disagreements among group members.
<i>Cumulative talk</i>	A sum of opinions and ideas that are exposed without arguing.
<i>Exploratory talk</i>	Critical but constructive engagement of participants with each other's ideas.

Table 3.1: Three types of classroom talk (adapted from Mercer, 1995).

Yet, it is undeniable that group work per se is not necessarily better than other types of interactional formats. Simply putting children to work in groups and making them

interact and solve problems by themselves is insufficient to ensure that they use cooperation and dialogue to good effect since it does not always lead to the construction of relevant knowledge (Mercer and Dawes, 2008; Rojas-Drummond *et al.*, 2003). As Barnes (2008:7) himself stated, “[s]uccessful group work requires preparation, guidance and supervision, and needs to be embedded in a sequence of work that includes other patterns of communication”. Jadallah (2000) also argues that it is essential to create learning experiences that involve students in exploration, analysis, evaluation and/or synthesis of knowledge; whilst Maybin (1994) points out that children need guidance into how to use language effectively.

Many researchers acknowledge that the quality of group work is very often unsatisfactory and fairly unproductive as they find many examples of children not really grasping how they are expected to work together (e.g., Dawes *et al.*, 2004). In order to improve this situation, several intervention programmes were designed to promote students’ reasoning skills and ET in the classroom. Some of these include Jaworski’s (2004, 2007) project to promote the learning of mathematics through workshops developed in Norway; Wells’ (1999) work on *dialogic inquiry*, who encouraged teachers to develop small-group work tasks which enabled all group members to contribute to the emergent outcomes of the activity and to collaboratively reach consensus on what was to be done and why; Jo Boaler’s (2008) intervention programmes aimed at promoting ET in a climate of collaborative learning, which turned out to be key in developing pupils’ identities as active mathematic learners in socially deprived areas where expectations regarding students’ ‘performance’ were not high; as well as Mercer *et al.*’s (1999) and Dawes *et al.*’s (2004) *Thinking Together* Project, which trained students to use ET in order to gain improvements in reasoning abilities.

According to Barnes and Sheeran (1992:77), all these interventions contribute to engaging students and encouraging meaningful learning by “<...>fostering discussion between pupils, enabling exploration and exploratory talk (which includes challenge and justification), and assisting learners to connect ideas and formulate them in a mathematical but critical way”. As the present study uses an adapted version of the *Thinking Together* programme (TT programme henceforth)

to improve the quality of CLIL and L1 talk, in the next section we will only present this programme in further detail.

3.3.3 Promotion of exploratory talk in group work: The Thinking Together Programme

In the early 1990s, Neil Mercer and his colleagues were in a Spoken Language and New Technology (SLANT) project, which observed how primary school children engaged in computer-based group activities. As a result of this project a classification of children's effective use of language for joint, explicit, and collaborative reasoning was developed (Mercer and Wegerif, 1996). However, the incidence of ET in the observed primary classrooms was very low. Drawing on these results, Mercer et al. (1999) carried out a research aimed at developing and evaluating a pedagogical programme for "scaffolding" children's effective use of language for reasoning. This was the origin of the TT programme, which was initially implemented in several primary schools in the UK and later adapted for schools in Mexico and Japan. As the aim of the programme was training children on joint reasoning scaffolding techniques, the results of the first programmes both in the U.K (Mercer et al., 1999) and Mexico (Rojas-Drummond *et al.*, 2003) were measured using a special reasoning test: Raven's test of progressive matrices.

3.3.3.1 Raven's Test of Progressive Matrices

Raven's Test of Progressive Matrices (RTPM henceforth) is frequently referred to simply as Raven's Matrices which is a multiple-choice intelligence test of abstract reasoning originally developed by John C. Raven in 1936. In each test item, students are asked to identify the missing item that completes a pattern presented in the form of a 4x4, 3x3, or 2x2 matrix. This is what gives the test its name. According to Raven, Raven and Court (1998, 2003), Raven's Matrices and Vocabulary tests measure the two main components of general intelligence as originally identified by Charles Spearman in 1904. These are the ability to think clearly and make sense of

complexity, which is known as *deductive ability*, and the ability to store and reproduce information, known as *reproductive ability*.

Although over the years different versions of the Raven's Matrices have been elaborated, the matrices are usually presented in three ways according to the participants' abilities:

- (a) *Standard Progressive Matrices*: First published in 1938, these are the original matrices. Designed for average adults or adolescents, they comprise five sets (A to E) of 12 items each (e.g., A1 through A12) in a black-and-white format. Items within each set become increasingly difficult, requiring a progressively greater cognitive capacity to encode and analyze information. This version was the one used in this study as it was employed in the first study on the programme implementation and its results (Mercer et al., 1999) (see Appendix 7).
- (b) *Coloured Progressive Matrices*: This version of the test was designed for younger children, the elderly, and people with moderate or severe learning difficulties. It contains sets A and B from the standard matrices, with an additional set Ab inserted between these two and also containing 12 items. To make the test visually stimulating for participants, most items are presented on a coloured background. However, several last items in set B are black-and-white; in this way, if a subject exceeds the tester's expectations, transition to sets C, D, and E of the standard matrices is facilitated.
- (c) *Advanced Progressive Matrices*: The advanced form of the matrices is considered appropriate for adults and adolescents of above-average intelligence since it contains 48 items, presented as one set of 12 items (set I), and another set of 36 items (set II), all in black-and-white format. As in the case of standard matrices, items in this test also become increasingly difficult as progress is made through each set.

In 1998, "parallel" versions of the Standard and Coloured Progressive Matrices were published to address the problem of the Raven's Matrices being too well known among general population. In addition, an extended version of the Standard Progressive Matrices, *Standard Progressive Matrices Plus*, was published at the same time, offering greater discrimination among more able young adults. Some scientific societies, such as The Tripe Nine Society or the International Society for

Philosophical Enquiry, accept the Advanced Progressive Matrices version as one of their admission tests.

In studies done by Mercer and his colleagues (Wegerif and Mercer, 2000; Mercer *et al.*, 1999), the Standard Progressive Matrices test was administered in experimental and control groups both to students working in groups and individually before and after the TT programme. Results obtained on the implementation of the programme both in the UK and Mexico (Wegerif and Mercer, 2000; Mercer *et al.* 1999; Rojas-Drummond *et al.*, 2003) showed that it was possible to improve the ability of primary school children to use ET and the promotion of this type of talk resulted in notable improvement of reasoning in group and individual problem-solving in the children. Since the results were also confirmed in Mexico, it was concluded that the programme functioned well with children coming from very different cultural, linguistic and educational contexts. In this study, the TT programme was adapted to L1 Spanish speakers and EFL CLIL students with the aim to improve the quality of group talk in both settings. The next section presents the programme in more detail.

3.3.3.2 Key elements of the TT programme

Drawing on the original version of the programme (Mercer *et al.*, 1999), Dawes *et al.* (2004) elaborated a guidebook for teachers interested in applying the TT programme to their classrooms. The first part of the book establishes the aims of the activities in the programme which were designed to develop speaking, listening and reasoning skills of children aged 8-11. It also explains that this is done by raising children's awareness and understanding of their use of the spoken language, supporting them in communicating with each other and working together more effectively in groups and improving their critical thinking skills. Research results are also provided to show how the appropriate development of students' speaking, listening and reasoning skills improves their general educational or academic achievement (Dawes *et al.*, 2004:2).

One of the key elements in the programme is ET. To make this concept easily accessible for teachers, Dawes *et al.* (2004) define it and explain how it entails that

everyone in the group shares relevant knowledge, that contributions are actively sought from every participant and that challenges and alternative proposals are accepted, yet justified with reasons, and agreement is sought and achieved wherever possible (idem:3). They also argue that through ET children not only learn to engage in their own ideas and learn from those of others, they also learn skills in talking and thinking which enable them to work more effectively in teams which can help them take an active role in society. According to the authors, the success of the programme is in the hands of the teacher who should bear in mind some important pedagogical aspects when implementing the programme. These aspects are the following (Dawes et al., 2004:3-5):

1. *Establish the ground rules of talk:* These rules are built by children in the first three lessons of the programme and ensure that children begin to use ET as soon as possible.

2. *Make the aims for each lesson clear.*

3. *Combine whole-class and group activities:* Each lesson has three main sections that are composed of a whole class introduction, a group work activity and a whole-class plenary.

4. *Make the most of group work:* Children need help to learn how to use spoken language effectively; therefore, as educators, teachers need to make clear what they expect when they ask groups to “discuss” or “talk together to decide” on something.

Although all these indications to teachers are essential, the authors particularly highlight the importance of the first and the last items. Thus, in regards to the first one (establishing the ground rules for talk), and as we will see in the data presented in this study, the teacher’s constant reminder of these rules and the insistence on their use can have a significant effect on the students’ use or not of ET in group interactions. In respect to the last item (making the most of group work), Dawes et al. (2004:5) give a series of recommendations on how to ensure a productive and fulfilling group activity:

- All members of the group take an active part.
- Everyone’s ideas and suggestions are accepted openly for consideration.
- Everyone accepts that their ideas can be questioned.

- Everyone gives reasons to support their objections and proposals.
- Members of the group take joint responsibility for decisions.

These recommendations are reflected in the ground rules for talk group members should agree upon, which means that the last point in Dawes et al.'s (2004) list is actually connected with the first one, thus emphasizing the need to make sure groups are really working in a collaborative way. The authors also point out that group interaction with a high amount of ET not only results in better group activity, but “it can also help individual children to improve their ‘critical thinking’ or reasoning” (idem:5).

For the successful implementation of the programme, Dawes et al. (2004:6) also suggest teachers to *use appropriate teaching strategies* aimed at guiding the development of children’s language use and understanding. Some of these strategies are the following:

- Make the learning intentions for each activity clear.
- Regularly remind students to use their “ground rules” for talk.
- “Model” for children the kinds of language they should use to talk to each other in group
- Use a series of related questions to guide children through a line of reasoning.
- Help children recognise and value the language and reasoning skills.

In reference to how assess students’ “thinking together” process, teachers are recommended to assess children’s talking and thinking during group work using a list of questions suggested by the authors. As for students, they should use self-assessment during plenary time and through a talk diary reflected in an individual rubric to check if they followed the ground rules for talk during group activities and reflect on the quality of their talk (idem:7).

Since the developers of the TT programme were concerned with the British national curriculum, they established links to different curricular objectives with the aim “to promote speaking and listening for learning within all areas of the curriculum” (Dawes et al., 2004:9). Thus, in the programme they make links to literacy skills, key

skills, thinking skills and values as stated in the national curriculum. When adapting the TT programme to the context of the L1 classrooms of the present study set in the Spanish national curriculum, although this section was approached with caution and expecting many changes, few problems were encountered in this regard. However, slightly more problematic was the use of the English version for CLIL students. The proficiency in the L2 required of the CLIL students to understand certain words in the original version which was designed for native English-speaking children was the field where more adaptation has to be done. On the contrary, in the curriculum topics which were more related with content-subjects, the content was found to be adequate for both the CLIL and the L1 students.

The TT programme is divided in two sections: *Focus on Talk* which comprises 5 lessons and *Talking, Thinking and Learning* which contains 11 lessons. Thus, the whole programme is made of 16 lessons:

SECTION A: FOCUS ON TALK

Lesson 1: Talk about talk

Lesson 2: Talking in groups

Lesson 3: Deciding on ground rules

Lesson 4: Using the ground rules

Lesson 5: Reasoning with the ground rules

SECTION B: TALKING, THINKING AND LEARNING

Lesson 6: Persuasion

Lesson 7: Kate's choice

Lesson 8: Who pays?

Lesson 9: Water volves

Lesson 10: Town Plan

Lesson 11: A fair test

Lesson 12: Non-fiction

Lesson 13: Looking into poems

Lesson 14: Staying friends

Lesson 15: Strategy

Lesson 16: ICT and learning conversations

Section A: Focus on Talk is the introductory section with 5 lessons where the ground rules are established. The authors state that in these five lessons children are

encouraged to become more aware of the ways they talk together and, based on their first discussions, they have to establish specific ground rules for group talk. These rules, if followed, will help them use ET effectively in their group discussions. The rules are established in lesson 3 with the guidance of the teacher who is instructed to make sure that the ground rules reflect the following ideas:

1. All relevant information is shared amongst the group.
2. Assertions and opinions should be backed up by reasons.
3. It is important to challenge and discuss suggestions and opinions.
4. Alternative options are carefully viewed before any decision is made.
5. Everyone in the group should be considered to speak by the other members.
6. Contributions are treated with respect.
7. The group should try to reach agreement.
8. The group accepts collective responsibility for decisions made and actions taken because of those decisions (Dawes et al., 2004:30).

After establishing the ground rules for talk by the students in section A of the programme, ground rules the class is supposed to agree upon, these will be displayed prominently in the classroom, and referred to frequently during the duration of the whole programme (idem:14). Each lesson in section A focuses on a different ground rule or sub-component of effective thinking together (idem:12). For example *Lesson 2: Talking in groups* is about two members of the group interviewing the third member about their personal preferences with an available set of questions. When one member is interviewed, the roles change and one of the interviewers becomes the interviewee until all of the members have performed the two roles. Later in the whole-class session a speaker is chosen to tell the rest of the class about their group members' preferences. This lesson aims to establish group cohesion and to make children practice taking turns to talk and listening to each other.

Section B: Talking, thinking and learning is made of 11 lessons, where the ground rules are put to practice. In it, children apply the ground rules for thinking to problem-solving and collaborative learning in different curriculum areas. As in section A, here each lesson also highlights specific ground rules and aspects of thinking together (idem). For example, *Lesson 9: the Water voles* introduces the

endangered situation of water voles in the UK caused by the drastic alterations riverbanks have suffered in order to play a board game where students have to try to expand the population of water voles and deal with the interests and opinions of the different members of the community. This lesson aims to (i) encourage students' critical thinking and reasoning by affording them opportunities to practice taking decisions and presenting ideas (as they have to take the roles of the different community members) and (ii) deepen their awareness of ecology issues.

In the TT program each lesson plan has a specific *structure* and is divided into the following parts (Dawes et al., 2004:14):

- Resources: materials needed for each activity.
- Aims: as each lesson starts, the teacher explains the lesson aims to children. It helps to establish a shared purpose for each activity and keeps the purpose firmly on the talk.
- Whole-Class Introduction: explanation of aims, talking about themes and setting up of activities.
- Group Work: Students join designated talk groups.
- Plenary: brings the class together for groups to share their work, lead a class discussion and review lesson aims.
- Extension Work: extra activities for students to work on.

Therefore, although each lesson has a varied activity type, the same lesson pattern is followed in putting together a whole class introductory session, a part where students work in groups and finally a plenary in which students can reflect and, finally, although not mentioned here, writing the talk diary is another individual reflecting activity of self-assessment. For a more complete account of the program, see Dawes et al (2004); for a more detailed presentation of the TT programme as adapted to this study, see Appendix 11.

3.3.3.3 Results of the TT programme

Two studies have accounted for results of the TT programme in an L1 setting. The first was the study performed by Mercer et al. (1999) in the U.K, which included 60

primary year 5 school children (age 9-10). This study used an earlier version of the TT programme, the *Talk, Reasoning and Computer* (TRAC) programme. All participating children were divided into 4 classes which constituted the experimental group that followed the programme. These four classes were matched with 4 similar classes (64 children in total) that constituted the control group. Both the teachers and the students in the experimental classes followed the TT programme whereas the control classes didn't.

The programme was developed in 10 weeks (2 months and a half). In the experimental classes children were divided into mixed-ability and mixed-gender groups of three. The study sought to test three hypothesis: (i) following the ground rules of ET would benefit joint reasoning; (ii) children's use of ET could be increased by especially designed teacher-led and peer-group activities, and (iii) children in the target classes would make significantly greater gains in their scores on the RPMT over the period of implementation of the TRAC programme. Therefore, the first hypothesis aimed to investigate whether ET was useful for reasoning; the second, whether the TRAC programme increased the use of ET and the third, aimed to evaluate changes in the students' performance in the RPMT before and after the intervention. Since only the third hypothesis was replicated in this study, it will be presented in more detail. The rest of the results will be commented on more briefly.

In order to prove the first hypothesis, the authors tested whether *ET was useful for reasoning* by analysing the data from one group qualitatively. This group was chosen because it had obtained the highest punctuation difference in the RPMT in the comparison between the pre- and post-test. In this part of the study, the discourse of the students while dealing with 8 out of the 60 problems in the RTPM, which had been solved incorrectly in the pre-test and correctly in the post-test, was examined. The comparative analysis of the successful talk and unsuccessful talk of the group showed that the successful talk contained a much higher number of incidences of the linguistic features linked to ET such as the use of long turns, of the words *because* or *cause, I think* and *agree*).

In order to prove the second hypothesis, the authors tested whether *the TRAC programme increased the use of ET*, for which, first, a qualitative analysis of the several focal groups was performed. This analysis confirmed the link between certain linguistic features and ET. Later, a quantitative analysis of the key discourse features produced in the focal groups was compared with those of the control groups. Results showed a fourfold increase in the use of the key linguistic features of the ET in the experimental groups, while in the talk of the control groups the incidence remained the same.

Lastly, to prove the third hypothesis, *the changes achieved in the target group in the RTPM* were tested. In Mercer et al. (1999) study, the children performed the RTPM both in groups and individually in the pre- and post-test. Results showed a relatively greater improvement in the experimental groups (4.05 mean punctuation increase) as compared with the control groups (1.36 average punctuation increase). However, the difference when comparing individual results was even greater (2.11 average in the individual scores of the experimental classes; 1.01 in the individual scores of the control classes).

The second study was the one performed by Rojas-Drummod, Pérez, Velez, Gómez and Mendoza (2003), with 84 primary school Mexican children (age 10-12). In this study two schools participated, one was assigned the experimental and the other the control condition. The Mexican version of the TT program was developed by adapting it to the specific cultural and linguistic context of the Mexican school as well as to the Spanish language and of the Mexican curricular content. The 16 lessons that the original TT programme comprises were reduced to 10 lessons and these were developed during 20 weeks (5 months) period. Six teachers taught the experimental group and other six taught the control group in a big multi-purposed classroom. Rojas-Drummod et al. (2003) developed a method for analysing symmetric interactions and discourse based on a previous model by Mercer and Wegerif (1996). This model comprised a quantitative and qualitative analysis of observations at three levels: interaction level (level I); discourse level (level II) and problem-solving level (level III). These levels can be paralleled to the three hypotheses formulated in Mercer *et al.* (1999).

In *Level I (interaction level)*, a focus group was qualitatively analysed through videos and transcripts. Results showed that the group used an exploratory type of talk both in the pre- and post-test, which seemed to meet the criteria of an elaborated ET. When analysing the data, Rojas Drummod et al. (2003) saw the need to make a further distinction between what they called *Incipient Exploratory Talk* and *Elaborate Exploratory Talk*. The first type suggests that ET is neither very consistent nor very prominent in the way children talk, whereas the second type indicates that ET is more consolidated and sophisticated (Rojas-Drummod *et al.*, 2003).

In *Level II (discourse level)*, a quantitative analysis of several features of three experimental groups were analysed in order to determine whether the results found in these focus group could be generalized. Three aspects were quantified for this analysis: types of talk used per problem, features of talk used and key words in context. This last aspect is similar to focal aspect of the second hypothesis in Mercer *et al.*'s (1999) presented above where they sought to find out whether the TRAC programme increased the use of ET in relation to specific linguistic features. On the basis of the ground rules for talk developed by groups, Rojas-Drummond et al. (2003) used specific criteria to decide the orientation towards the three types of talk exhibited by the children to solve a problem. Additionally, and in this level, they looked at various features of the language used, including the speech acts implied by the talk and, particularly, the use of arguments. Once quantified and compared, the results of the analysis in this level showed that after received training through the TT programme the experimental group, in contrast to the control group, significantly increased their use of ET, and particularly of the more sophisticated type of the ET.

In *Level III (problem-solving level)* the way the children solved the RTPM, which following Mercer et al. (1999) was also administered both individually and in groups, was qualitatively analysed. There was also a quantitative analysis of the scores obtained by each triad and each individual. Results in this level showed that both the experimental and control groups performed very similarly in the pre-test. In contrast, results in the post-test showed that the experimental group increased

substantially while the control group remained at a similar level to that in the pre-test.

In sum, results shown by both studies prove an increase in the use of ET and, as a consequence, in problem-solving reasoning (measured by RTPM) in the experimental groups that followed the TT program more than in the control groups that didn't. Both studies are set in the L1 context. In the present study however it will be examined whether this change is also present in a CLIL context and to what extent it is similar to the performance of an L1 group of parallel characteristics. In the next section, we will refer to ET in the specific context which is the focus of this study, the CLIL context.

3.3.4 Exploratory talk and CLIL

Researchers on group work interaction and problem-solving and reasoning skills in primary classrooms in L1 context (e.g., Barnes, 1975, 2008; Edwards and Mercer, 1987; Mercer, 1995) have identified ET as the type of language in which learners construct thinking together which leads to a collaborative understanding of learning, thereby going beyond interaction to “interthinking” (Mercer and Littleton, 2007:4). This approach places talking at the centre of teaching and learning. Moate (2010) proposes to apply this view of learning to CLIL. The use of ET in CLIL would not only increase the opportunities to use the FL through oral group work activities, thereby helping learners acquire more content-matter through the improvement of joint reasoning (Baetens Beardsmore, 2008:9).

These ideas seem to also support the suggestion that “an ability to understand interactional processes at work is crucial to facilitating learning opportunity” (Walsh, 2006:16). The collaborative view of learning and thinking seems therefore to be a perfect match to the CLIL context because it affords students opportunities to put the FL *into use* in order to carry out content-related tasks. For Moate (2010:42), in ET, “both language and content learning goals come together as learners draw on growing awareness and ability”. In line with Moate's (2010) defence of the necessity to promote the use of ET in CLIL classroom interaction,

other studies (e.g. Llinares et al., 2010) have also aimed to show “the importance of encouraging critical thinking through providing students with opportunities to discuss, build on, and challenge each other’s ideas, thus bringing together content and language objectives” (Llinares et al., 2010:67).

Following this strand, the present study has taken a step further and used the TT programme developed by Dawes et al. (2004) to promote the use of ET in CLIL (and L1) contexts. The programme has been adapted to the particularities of this study in its aim to promote ET in the classroom since “the interactive, structured culture surrounding ET clearly represents a different type of classroom environment compatible with the active participation encouraged in CLIL” (Moate, 2010:42). Moreover, this study pretends to cover the gap acknowledged by Moate (2010:43) when she calls for the necessity to experiment this culture within the CLIL context: “[w]hilst the value of ET as an educational tool in mainstream education is already established, the potential of ET to support the dual-goals of CLIL requires increased intentional support in the FL-mediated context of CLIL”.

Hence, ET is a way of learning through language that involves and develops inter-thinking within the group. Learning through talk which moves into the sphere of thinking is a desired aim for many teachers. But just like not all types of talk foster group learning or promote problem-solving, not all types of group interaction help learners reason together. In the following section, we will delve deeper into the patterns of interaction that have been identified in small groups.

3.4 Patterns of interaction in group work

As already mentioned in section 3.3.2, small group work activities are activities where symmetrical interactions are held between students (Hardman, 2008). Within sociocultural theory, this type of interaction has been considered a mediated activity occurring between peers where ZPD is worked on. However, the type of work described here as group work wouldn’t fit Vygotsky’s conception of peer mediation, as in the SCT mediation refers to the guiding process between a more

capable peer and another less capable. In this section, however, we relate to interaction between *equally capable* peers.

As explained previously in section 3.3.1, the interest in a dialogic way of teaching has led to the emergence of an intensified teacher-student dialogue that later drove the path towards peer or small group work. As the interest in classroom talk increased within educational settings, the possibility of making students work together and talk appeared. Quite recently peer interaction was defined by Philp et al. (2014:3) as “any communicative activity carried out *between learners*, where there is minimal or no participation from the teacher”. The two important elements to underline here is the fact that interaction takes place between learners only, thus persons beholding the same status, and it involves a communicative event, most of the times this being oral interaction. This section examines the origins and evolution of small group talk in general to later approach the use of small group talk in the SLA context. Next, the types of interactional patterns developed by Storch (2002) will be presented as it was used as the last element for the interactional layer of the analytical model employed in this study.

3.4.1 Small group talk in the L1

In 1995, Barnes and Todd (1995:2) write: “There have for many decades been liberal-minded educators who wished to give students more responsibility for controlling the pace and directions of learning”. Meanwhile, since the early 1960s, some teachers and theorists in the USA maintained that small group discussion was an appropriate way of giving more responsibility to learners (*idem*). However, it was only at the end of the 60s and in the 70s that the affordable recording material made it possible to research and analyse in detail what students said and how it could be contributing to their learning. In the late 80s and 90s several countries funded projects to promote the use of small group talk in the classroom: National Oracy Project in the UK (Norman, 1992) and the Oracy Project in Peel Country, Ontario (Peel district School Board, 1996), and both teachers and students seemed to respond with enthusiasm. In the USA, teachers were also interested in the development of the spoken language through small group talk. At first, this was mainly done with small children and mainly linked to parallel development of

literacy skills. Barnes and Todd (1995) describe how classroom methods aimed at promoting small group work rapidly spread throughout XXX, but not without criticism at first. They mention how this method was investigated on a small scale and mostly related to effective learning and specific issues in group discussion in the UK. This moment coincided with the appearance of the concept of *cooperative learning* and larger research studies in the USA and Israel (e.g., Johnson and Johnson, 1985; Sharan, 1990; Slavin, 1990).

After that, two different directions were taken by research on small group talk. In the USA, the aim was to reach the successful functioning of collaborative group work (Kagan, 1985) and research was oriented to help reach that success, whereas in the UK the talk was central stage, and a particular research attention was given to how it fostered learning. While acknowledging the advances made in small group methods within a social constructivist view of learning, Barnes and Todd (1995:7) also account for the need to delve deeper into “how the learning takes place or describe the influences that shape students’ participation”.

When reviewing more recent research on cooperative learning, there are studies on all educational levels, research set at the elementary school level (e.g., Ginsburg-Block, Rohrbeck and Fantuzzo, 2006; Rohrbeck, Ginsburg-Block, Fantuzzo and Miller, 2003), at the secondary school level (e.g., Slavin, 1995), and in higher education (e.g., Johnson, Johnson and Smith, 2007; Springer, Stanne and Donovan, 1999). There are also studies that have proven the benefits of cooperative learning when compared to competitive or individual learning. For Jurkowski and Hänze (2015), these studies focus on knowledge acquisition as well as social and motivational outcomes, including peer relationships, social skills, and academic self-concept. However, they also state that for “cooperation to yield benefits, students’ talk during cooperative learning is essential” (idem:358). In order to achieve this, they subscribe, with other researchers, that students must be trained in communicative skills (e.g., Barnes, 2008; King, 1994; Mercer, 1995; O’Donnell, 2006; Webb, 2009).

3.4.2 *Small group talk in a second or foreign language*

SLA approaches to classroom interaction can be taken back to Krashen's (1989) comprehensible input theory, already presented in section XXX. His work deals with the interaction between teacher and learner. The value of comprehensible input in language acquisition was further extended by Long (1983), who highlighted the importance of learner output and therefore acknowledged the bidirectional interaction between teacher and learner. In later studies within this field, a significant contribution to SLA was done by Pica (1994) who interrelated learners' opportunities to negotiate meaning with the increased opportunities for language learning. Swain (1995) later underlined the importance of learner output, giving it an additional value to the process of negotiation of meaning beyond the reflection of what had already been conceived by Krashen. She argued that the production of language itself was a source of learning, by linking it to the interlanguage learners need to work on in their ZPD.

Nowadays, there is a fairly recent and growing interest in the role of social interaction in L2 education. The influence of the SCT has been an important contribution in order to change the notion of language learning as a solely mental process to language learning and use immersed in its social and cultural context (Gibbons, 2008:43).

In Ballinger and Sato's (2016) recent review of peer interaction in L2 settings they argue that peer interaction has been given much less attention than teacher-student interaction. However, with sociocultural theory, there is a shift from the focus on expert-novice interaction to peer interaction, as the dominant terminology such as *negotiation of meaning, co-construction, cooperative learning, collaborative dialogue* in L2 demonstrates (see also Lantolf, 2000). Nevertheless, the shift is still insufficiently covered, as Sato and Ballinger (2016:1) claim:

“Given the fact that student-teacher interaction and peer interaction are indeed different in many ways and that peer interaction occupies a significant amount of time in many L2 classrooms, it is high time to advance the research agenda by closely examining the nature of peer interaction”.

Although still minor, some studies have addressed the characteristic underpinnings of peer interaction. Thus, Philp, Adams, and Iwashita (2014) compiled a comprehensive monograph of peer interaction and Sato and Ballinger (2016) followed their lead. In their introduction, Sato and Ballinger (2016) also provide an overview of the different theories that investigated peer interaction: the cognitive perspective which dominates the SLA field, the sociocultural framework which introduces the social and cultural aspects of language learning, and the sociocognitive perspective which combines social and cognitive approaches. Sato and Ballinger (2012:173) defend a combination of these two perspectives when they state that the conflict between the two paradigms is “ultimately problematic when it comes to transferring findings from L2 research into practice”. The present dissertation, however, is set in the combination of the sociocultural theory with systemic functional linguistics and represents therefore a combination of a different kind.

3.4.3 Mutuality and equality based interactional patterns

Within the sociocultural framework, Damon and Phelps (1989) identified three major approaches to peer-based instruction in terms of scaffolding and the co-construction of knowledge: *peer tutoring*, *cooperative learning* and *peer collaboration*. *Peer tutoring* is the interaction that takes place between a learner who is an expert in a certain topic and a novice learner; *cooperative learning* is the work on task that takes places between a varied number of learners, normally no more than five–six where each tends to assume a specific role; and *peer collaboration* is when several novices deal with a challenging task that they couldn’t do on their own. Damon and Phelps (1989) identified collaborative engagement as the aspect in which the *peer collaborative* approach deeply differed from *peer tutoring* and *cooperative learning*. They identified two indexes of peer engagement: equality and mutuality. Equality refers to the degree of control or authority over a task, whereas interactions with high level of mutuality are described as rich in reciprocal feedback and sharing of ideas during the task (idem:127).

In 2002, Storch applied Damon and Phelps (1989) model to analyse recorded interactions of 10 pairs of university-level English as a Second Language (ESL henceforth) learners in Australia who worked on a range of communicative tasks. She also identified Damon and Phelps' dimensions, equality and mutuality, and presented them as the aspects defining the degree of learner collaboration. However, drawing on Van Lier (1996), Storch (2002) points out that this notion is not to be understood only as an equal distribution of turns or contributions. Equality is also and most importantly reflected by the extent of the control or authority over the direction of the task exercised by the students in those turns. Thus, high equality is evident in interactions where both participants take directions from each other (idem:127). Meanwhile, mutuality is described as the learners' level of engagement with their partners' contributions.

Whilst Damon and Phelps (1989) described three types of peer interaction in terms of equality and mutuality, Storch (2002) used the degrees of these two dimensions (high versus low) to categorize the pairs in her study into four different relationship patterns (Figure 3.2). These are (i) the collaborative pattern when the examined pair showed high equality and high mutuality, (ii) the dominant/dominant pattern in which the pair showed high equality but low mutuality, (iii) the dominant/passive pattern in which the pair was low both in equality and mutuality, and (iv) the expert/novice pattern in which the analysed pair showed low equality and high mutuality. These patterns describe the relationships built in a group work activity conceived from a perspective of the co-construction of knowledge.

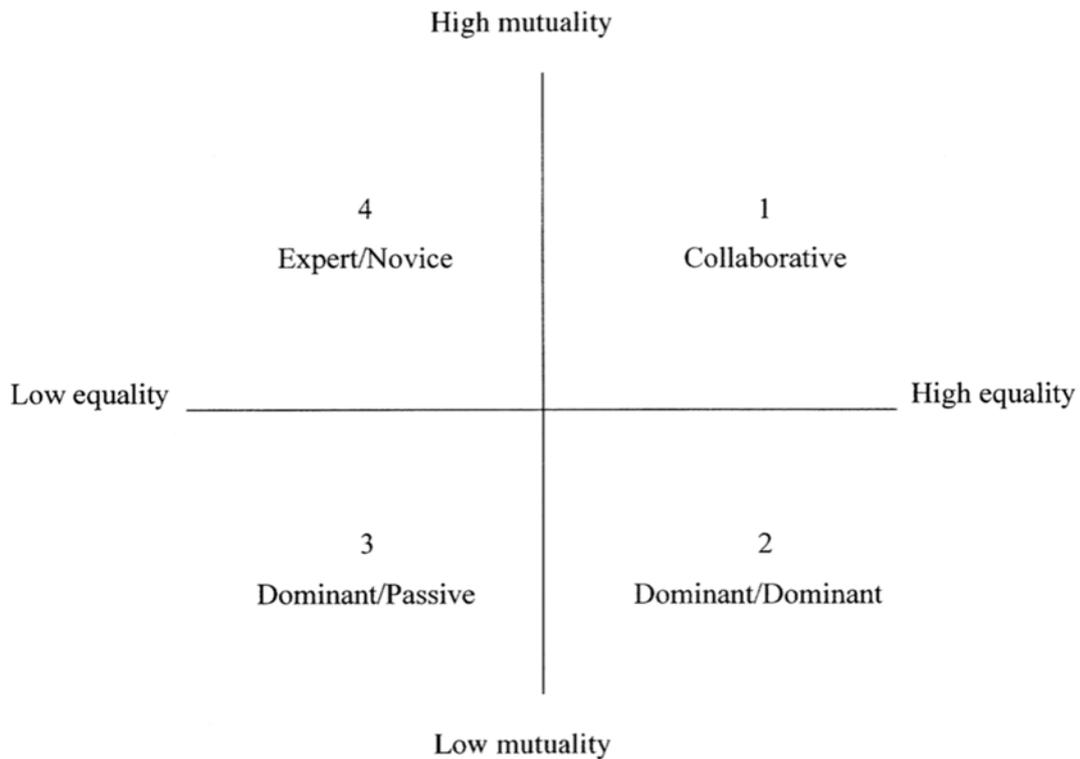


Figure 3.2: Storch's model of dyadic interaction (Storch, 2002:128)

As Figure 3.2 shows, in a collaborative pattern (Quadrant 1) both participants contribute to the joint text reconstruction task in Storch's study and engage with each other's contribution. In a dominant/dominant or cooperative pattern (Quadrant 2), both participants contribute to the completion of the task but do not engage very much with each other's contribution. A distinctive aspect of this pattern is a clear division of labour in which neither of the participants attempts to take control of the task. A dominant/passive pattern (Quadrant 3) is one where one participant takes over control of the task and there is little contribution from the other participant, nor is there much engagement with each other's suggestions. Finally, an expert/novice pattern (Quadrant 4) is one where one learner takes a leading role but attempts to encourage the passive participant to contribute to the task.

In the ESL context, Storch (2002, 2009) found that these patterns of interaction influence the quantity and quality of learners' focus on language and, subsequently, have significant effects on their language learning. Pairs that collaborated were

more likely to pay attention to language choice and deliberate about it, pool their linguistic resources to solve their deliberations, and retain the linguistic knowledge that was co-constructed during their deliberations than pairs with other interactional patterns.

Other studies have also proven the effects patterns of interaction have on language use in pair/group work and L2 learning (see Ballinger, 2013; Storch, 2002). In fact, a number of studies have found how certain types of interaction (mostly the collaborative style) create opportunities for more effective L2 learning (e.g Galazci, 2008; Kim and McDonough, 2008; Martín-Beltrán, 2010; Watanabe and Swain, 2007).

Equality and mutuality seem to be, therefore, not only good descriptors of the interactional pattern present in peer interaction but also predictors of language learning. In order to achieve the stated objectives and examine thoroughly the meaning-making and learning process taking place in group discussions, the multi-layered analytical model employed in this study includes a third, interactional layer, which is based on Damon and Phelps' (1989) *equality* and *mutuality* dimensions and Storch's (2002) four patterns of dyadic interaction.

3.4.4 Small group talk in CLIL

Group talk, as one of the types of social interaction that learners are immersed in within the classroom, is a common ground for both a systemic functional approach to language and a sociocultural view of learning. In SFL, in order to explore language in use we need to take a perspective where “learning language” and “learning through language” are simultaneous (Halliday, 1993), whereas in the SCT, language use in group work interactions should be explored as an element for learning (Devos, 2016:1).

The consideration of social interaction as a language learning resource has consequently embraced small group talk in its sphere of inquiry (Devos, 2016). Within CLIL, the interest in interaction in classroom-based research has been frequently stated. A prominent CLIL advocate, Do Coyle (2007:548), expressed the

need for this type of research: “interaction data documenting teacher and student language use in situ is crucial not only to understanding language and curriculum content learning but to informing wider discussions on pedagogies and policy”. CLIL pedagogy and its classroom methodology emphasize dialogic communication between actors in the classroom (Coyle et al., 2010) and as such, group work talk represents one of the many interactional contexts within FL settings where language learning and language use can co-occur (Devos, 2016).

It might be argued that, by encouraging dialogic activity, CLIL requires a higher level of linguistic and cognitive processing from students. They justify this by explaining that learners must summon up existing knowledge and strategies to express themselves and overcome barriers in communication “by applying various intra- or interpersonal strategies to fill language or content gaps” (Devos, 2016:14). The advantage of group or peer interactions in this context is that they occur in the absence of the teacher, therefore, learners themselves must provide situation-appropriate communicative tools, expressions, or content information. Devos (2016) also states that it is in this process that learners recognize content-relevant language or communicative tools that help them whilst thinking and communicating their thoughts. The consequences are clearly enriching and favouring of integrated learning in CLIL.

The body of research set in the CLIL context and focused on small group interaction is still in its infancy. These studies were set off with the acknowledgement of the predominance of asymmetrical discourse in the CLIL classroom (Dalton-Puffer, 2009). It was Dalton-Puffer (2007), in her study on discourse in CLIL classrooms in Austria, who perhaps first evidenced that whole-class interactions are the dominant mode of interaction in CLIL classrooms since two thirds of her data corpus were performed in this mode. Within the whole-class interactions, many researchers have shown that teacher-led discussions characterized by the IRF pattern prevail and dominate discourse in all content-based language classrooms (Lyster, 2007) and remain still common in CLIL classrooms (Dalton-Puffer, 2007; Llinares et al., 2012; Nikula, 2007).

This situation worried researchers who started to perform comparative studies

between whole-class activities with asymmetrical interactions and peer or group activities with symmetrical interactions. Nikula's (2005, 2007) comparison of interactions in Finnish CLIL and EFL classrooms represents one of them. She demonstrated that although whole-class interactions do occur often in CLIL, group and pair work is more frequent in CLIL than in EFL. Moreover, one of her studies reports that because of the accepted choice of English as the medium of instruction by Finnish learners, English was predominantly used during group and pair work activities (Nikula, 2005). Other studies set in the CLIL context that have compared activity-type have also proven the benefit of group work as opposed to whole-class activity in fostering a more varied use of speech functions by CLIL students in both the primary and the secondary levels (Llinares and Pastrana, 2013; Pastrana, 2010). The results showed that students at both educational levels performed a wider variety of functions in group-work than in whole-class discussions. Moreover, interesting differences across educational levels regarding frequency of use of different functions were found which could be considered signals of pragmatic development.

Another comparative study across activity types is Llinares and Dalton-Puffer (2015) who examined learners' use of interpersonal resources, especially the language of evaluation, while working on a range of naturalistic tasks in CLIL social science classrooms in three European contexts (Austria, Finland, and Spain). The authors used an integrative analytical framework that draws on SFL Appraisal theory (Martin and White, 2005), Goffman's (1981) participation framework as well as educational-pragmatic notions of academic discourse functions such as e.g. evaluating (Dalton-Puffer, 2007, 2013). They analysed CLIL students' evaluative language across five task-types (whole-class discussions, group-work discussions, individual interviews, oral presentations and role-plays). Findings showed clear differences in the frequency and distribution of different appraisal types among different tasks, with role-play and whole-class discussion forming the opposite ends of a continuum. Other recent studies in this field are Llinares et al. (2012) and Llinares and Morton (2012), who showed the opportunities provided in group work discussions for students' participation not only as reproducers of the content learnt

from the teacher or in textbooks or “animators” (Goffman, 1981) but also as “authors”, who choose and put together the words, and “principals”, by generating new content-related ideas (Bunch, 2009; Goffman, 1981).

Recently research on small group interaction has started applying Conversation Analysis (CA) perspective to better understand language use in CLIL settings (Evnitskaya and Jakonen, 2017). One example of the application of CA is that of Jakonen and Morton (2015), who investigated epistemic search sequences in grade 9 (age 14-15) CLIL peer interaction in Finnish secondary schools. Their study showed how learners working in small groups in CLIL history lessons recognized knowledge gaps and collaborated together to fill them through joint interaction. Within a more multimodal approach to classroom data, Kääntä and Piirainen-Marsh (2013) examined how a group of students in CLIL physics class worked together to balance two weights on a seesaw, an experiment used to introduce the concept of torsional moment. A very recent study on peer interaction in CLIL settings, also from a multimodal CA perspective, is that of Evnitskaya and Jakonen (2017), who investigated a CLIL biology class in grade 7 (age 12) in a bilingual Catalan-Spanish community. With their study, they aimed to prove how a micro-sequential and multimodal analysis of a pedagogical activity and the semiotic resources deployed by participants in accomplishing such an activity could enrich the understanding of teaching and learning practices in CLIL classrooms.

Also within the CA paradigm, but focusing on code-switching and language choice in peer interaction, Jakonen (2016:25) found that Finnish CLIL students “displayed normative orientation to using L1 in front of peers” for both task management and socializing. Kontio and Sylvén (2015) demonstrate that in a Swedish vocational education setting students used code-switching as a communicative strategy to make themselves understood. At the tertiary level, Moore (2014) examined this interactional phenomenon in peer interaction and found that it was used as part of the students’ plurilingual repertoires who accessed it in the joint construction of content and language knowledge immersed in an “internationalized” university classroom.

In sum, peer or group interaction in CLIL is still a fairly recent area of research and

more studies should take this direction. The present study hopes to contribute to enrich the field that is still *in crecento*.

3.5 Chapter summary

While Chapter 2 presented a more language-centred SFL and CDF approach to language, this chapter provided an overview of the second approach chosen in this thesis to fulfil the integrative perspective on CLI. To do so, a sociocultural approach to learning was disentangled through some of its main components: Vygotsky's concept of ZPD and the social nature of learning. After sketching out the outer frame, two key elements explored within the SCT and directly related to this study were tackled, the TT programme and small group interaction. These two elements constituted the pedagogical programme used for the intervention and the last layer of the multi-layered analytical model, respectively.

This chapter concludes the theoretical framework of the present study to drive the way towards Chapters 4 and 5 that deal with the methodological aspects applied in the present research

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Methodology

*My way is to seize an image the moment it has formed in my **mind**,
to seize it as a bird and to **pin it** at once to canvas.*

*Afterward I start to tame it, to **master it**.*

*I bring it under **control**
and I **develop** it.*

Joan Miro

Chapter 4: The context

Introduction

Purpose of the study

The corpus

Research context and participants

The CLIL school and students

The L1 school and students

The Sessions

Science group discussion (STA)

RTPM-based problem solving activity (PSA)

Data collection process

Stage 1

Time 1

Stage 2: The Thinking Together program

Time 2

Data used in Part 1 and Part 2 of this study

Data analysis

Analytical procedures for the examination of the co-construction of knowledge

Analytical procedures for the examination of problem-solving

Chapter summary

4.1 Introduction

Chapters 2 and 3 reviewed the relevant research literature and set out the conceptual frameworks for this study. Chapter 2 described systemic functional linguistics approaches to language development in the L1 and to L2 learning in the classroom context as well as the cognitive discourse function approach to the analysis of integration in CLIL. Chapter 3 focused on educational linguistics approaches to oral and group work interaction in different classroom settings (L1, L2 and CLIL).

The purpose of the chapters 4 and 5 is to describe the methodological approach, research context and participants, data collection methods, and the analytical procedures employed in this study. This first methodological chapter gives a detailed account of the corpus, the data collection process and a general view of the data analysis. The latter will however be further explained in detail in chapter 5 where the analytical model designed for this doctoral dissertation will be described.

This chapter begins by presenting the objectives and research questions set up for the study. This is followed by a description of the participants in the two schools and the recorded sessions, the data collection procedures used and the type of data collected at different moments of the study, and a general overview of the analytical process will be provided.

4.2 Purpose of the study

As already mentioned in section XXX / chapter 1, several studies have stated the benefits of bilingual teaching and CLIL. Learner gains such as increased motivation and improved language competence in CLIL students, improved receptive language skills, especially reading, equal, and in some cases, even better results by CLIL students outperforming their non-CLIL counterparts in content learning, , and consistent achievement in subject learning by CLIL students (Badertscher and Bieri, 2009; Dalton-Puffer and Smit, 2007; Genesee, 2004; Lasagabaster, 2008; Mehisto et al., 2008; Mehisto and Marsh, 2011; Mohan, 1986; Nikula and Marsh, 1997) are some of the proven benefits. Devos (2016) synthesizes the benefits of CLIL approach into three aspects: (i) its effectiveness in teaching a second or foreign language in a meaningful way (Genesee, 1987; Nikula, 2007), (ii) its efficiency in combining two subjects in one (Dalton-Puffer and Smit, 2007; Eurydice, 2006) and (iii) its global approach in the varied way in which it can be implemented in different places (Mehisto et al., 2008). However, there are also CLIL detractors. Thus, for example, Bruton (2011), points out that CLIL programmes are not available for all students and that much of the potential problems which CLIL could encounter are actually avoided “when selecting for these programmes students who will be academically motivated to succeed in the FL, as in other subjects” (idem: 524).

Addressing specifically the second and third aspects mentioned by Devos (2016), this dissertation focuses on content and language integration and explores a type of classroom organization which has received little attention in CLIL research: group work. The study is also set in the primary level context, where CLIL research has also proven to be scarce (Llinares and Pastrana, 2013). Finally, the study compares CLIL classrooms to parallel L1 classrooms to investigate the role of language in joint reasoning and content-subject learning, in this case science, in any language, being it L1 or L2. It is argued that in this way the similarities and differences between the L1 and the CLIL contexts can be observed and the features transferrable from one language to the other can be identified (Llinares, 2015: 70).

This study is divided into two parts, each with its corresponding objective and a set of research questions. The objective for the first part (O1) is to develop a deep understanding of the learning opportunities in group work interaction in primary classroom, by focusing on the integration of language and content. This part therefore aims at describing and comparing the language used by students working in small groups in CLIL and L1 settings and across two different activities. The research questions for this part of the study are the following:

PART 1

RQ1. How is knowledge co-constructed in CLIL and L1 group-work activities?

RQ1.1 What type of speech functions do CLIL and L1 students produce?

RQ1.2 What type of knowledge is displayed in CLIL and L1 students' use of registers and cognitive discourse functions?

RQ1.3 What type of interaction takes place in CLIL and L1 group-work in terms of the equality and mutuality fostered in the groups?

RQ2. Are there differences in the three layers (1.1, 1.2, 1.3) above between CLIL and parallel groups working on the same activities in the L1? If so, which are they?

RQ3. Are there differences in the three layers (1.1, 1.2, 1.3) above when students in CLIL and L1 groups discuss a topic and when they solve a problem? If so, which are they?

This part of the study, is descriptive. It seeks to obtain a thorough understanding of the connection between language and cognition in CLIL. In order to bridge out this connection and to elaborate a precise description of it, a multi layered analytical model was designed which contains three layers: discourse layer, knowledge layer and interactional layer. The discourse layer delves into the way we use language to convey meaning by focusing on speech functions; the knowledge level focuses on the type of content we transmit through the use of those functions, and finally the interactional layer concentrates on the way students interact in group. Each layer is represented by a corresponding sub question within RQ1 (RQ1.1, RQ1.2 and RQ1.3). The designed analytical model will be described in more detail in chapter 5.

RQ2 aims at comparing the way CLIL students use language to think together in groups and o students in the parallel L1 class. This comparison will allow to see whether the use of the L2 presents more difficulties for CLIL students when compared to their peers participating in similar discussions in the L1. Finally, RQ3 compares CLIL and L1 students' language use in two group activities: (i) a prompt-based discussion activity about a science topic and (ii) a discussion around a problem-solving activity. The first activity is a more content-related activity as it makes students discuss the answers to a set of questions about a topic learnt in their corresponding science classroom, i.e. CLIL or L1 science. In contrast, the second activity, the discussion around the problem-solving activity, is an abstract reasoning activity where students are expected to show their content un-related deductive and reproductive abilities, and therefore the discussion in this activity is expected to be completely different and content unrelated.

The second objective stated for this study (O2) is to evaluate the effectiveness of an intervention program aimed at improving small group talk and reasoning in the class at three levels: discourse, knowledge and interaction. The second part of the study aims therefore to describe and compare how the CLIL and L1 groups reason together in the problem-solving activity. as well as to evaluate the effectiveness of the intervention program. The research questions for this part of the study are the following:

PART 2**RQ4. How do CLIL and L1 groups reason to solve problems in the Ravens test of progressive matrices?**

RQ4.1 Is there any difference between the experimental CLIL and L1 groups (CLILA vs L1A) before and after the intervention? If so, which are they?

RQ4.2 Is there any difference between the experimental and control CLIL and L1 groups (CLILA vs CLILB and L1A vs L1B)? If so, which are they?

RQ4.3 Is there any difference between the CLIL experimental and the L1 experimental group (CLILA and L1A) after the intervention? If so, which are they?

RQ5. How is knowledge co-constructed in the CLIL experimental group (CLILA) before and after the intervention?

RQ5.1 Are there any differences when compared with the L1 experimental group (L1A)? If so, which are they?

RQ5.2 Are there any differences across the two activities (PSA after the intervention and STA)? If so, which are they?

RQ4 seeks to determine if, as found in previous studies on the implementation of the TT program and its outcomes, the gains in students' joint-reasoning, as reflected in their improved results in the problem-solving activity after the intervention program are also found in the examined CLIL classrooms and the parallel L1 classrooms. Finally, RQ5 describes and compares the results obtained at the discourse, knowledge and interactional layer of one experimental CLIL group before and after the TT program. In sum, it seeks to determine if the TT program had any positive effect on the type of talk produced in this CLIL group and if, as it occurred in previous studies, this resulted in a higher use of *exploratory talk* (Mercer et al., 1999; Rojas Drummond et al., 2003). The obtained results are later compared across the two experimental groups (the CLIL and the L1 groups that followed the program) and across the two activities in the experimental CLIL group (the science topic discussion activity and the problem-solving activity). The aim here is to determine whether the results obtained are due to the intervention program or the activity type. Next section provides a description of the participants involved, the data collection procedures and the data corpus used for this study.

4.3 The corpus

4.3.1 Research context and participants

Four primary level classes, two CLIL and two L1, took part in this study which constitute two main data corpora: the CLIL corpus and the L1 corpus, correspondingly. Each corpus comes from a different school, although both schools are located in the same middle-class socio-economic area in the north of Madrid.

4.3.1.1 The CLIL school and students

The primary school where the CLIL data corpus was obtained is a private bilingual school situated in the north of Madrid, in a residential area still within the city limits but situated in the outskirts. It comprises nursery (age 2-5, primary (age 5-12) and secondary (age 12-18) educational levels.

According to the Bilingual Project launched by the Comunidad Autónoma of Madrid (henceforth CAM) in 2004, for a state school to be considered bilingual a minimum of 30% and a maximum of 50% of the subject-matter curriculum had to be taught in English. As a general rule, at the primary school level, out of the 25 hours of the weekly timetable, 8 hours are taught in English, 5 hours are used for the EFL class and 3 hours are allocated to any content subject (except for Maths and the Spanish language / L1) chosen by the school. The tendency is to choose science “since there are a lot of materials and resources available” (Llinares and Dafouz, 2010:98).

Private schools, however, are not obliged to follow these official regulations unless they wish to be recognized as bilingual by the regional educational authorities. The school where the CLIL data corpus used in this study was obtained fulfills all the legal requirements to be considered bilingual. In the primary section, where this study was carried out, children have a total of 22.5 hours of class per week. Half of that time children attend classes in Spanish L1, which is a total of 11.25 hours per week. The rest of the time they are taught in English, in EFL and CLIL science classrooms. This adds up to approximately 8.75 hours of English per week, which represents 38% of the total amount of the instruction hours. The grade examined in this study was grade 4 (age 9-10) which has three classes of 23 to 27 students. Most

of the students who took part in this study have been attending the school since the age of 3, although learning a content subject in English, in this case science, starts only at the age of 6, in grade 1 of primary school.

The CLIL data corpus comprises recordings from two of the three grade 4 classes. Each of the two classes (CLIL A and CLIL B) has 27 students who are all native speakers of Spanish. There were no students considered to be in different circumstances from the ones described above. Both classes worked in two group-work sessions: a discussion activity and a problem-solving activity based on the Raven's test of Progressive Matrices (RTPM). However, out of the total of 8-9 small groups that took part in the activities in each class, only 4 were randomly selected for the analysis.

4.3.1.2 The L1 school and students

The school where the L1 data corpus was obtained is a subsidized school in the north of Madrid, also situated in a residential area within the city limits but in the outskirts of Madrid. The CLIL and the L1 school areas, although not considered the same district, are next to one another.

The L1 school also has three educational levels: nursery, primary and secondary, covering the same age groups as the CLIL school. This is not a bilingual school and science subject is taught in Spanish L1. However, some parts of the content are taught in English, after being taught in Spanish.

In grade 4 (age 9-10), there are three classes of 20 to 25 students each. Most of the students participating in this study have been attending the school since they were 4 years old, although some also attended the first two grades of the nursery levels.

The L1 data corpus used for the study comprises the recordings from two of the three classes which were selected randomly. Each of the two classes (L1 A and L1 B) carried out the same two group-work sessions as the two CLIL classes: a discussion activity and a problem-solving activity based on the RTPM. However, as in the CLIL

school, out of the total of 5-7 small groups that took part in these two activities in each class, only 4 groups were randomly selected for the analysis.

4.3.2 *The Sessions*

For the first and descriptive part of the study two activities were designed. The first was a group discussion about a topic belonging to the grade 4 science curriculum, which was chosen together with the four teachers involved. This activity will be referred to as the science topic discussion activity (hereafter STA). The second activity was a problem solving activity (PSA henceforth) based on the RTPM. The PSA was analysed in two ways. In the first part of the study the discussion of the groups when performing this activity (PSA) was analysed. For the second part of the study, the RTPM results obtained in each class were analyzed. These results aimed at measuring the reasoning skills in each examined group. The next sections present each activity in more details.

4.3.2.1 *Science topic group discussion (STA)*

As stated before, the STA was chosen as a highly representative group work activity in the L1 and CLIL science class. The topic was chosen in collaboration with the teachers. It had to be a topic that all students had previously worked on and which the teachers felt they would be comfortable with. No materials, apart from the group discussion prompt, were necessary as the idea of the prompt was to make them discuss a well-known topic rather than assessing what they remembered about this topic. The questions aimed at promoting students' reference to facts, reasons and opinions.

The topic chosen was *living things*. Two language versions of the same prompt, in English for the CLIL class (see Image 4.1) and in Spanish for the L1 class (see Image 4.2), were designed and administered in the same way. Both classes were given 45 minutes to answer as many questions as they could. However, it was observed that the prompt was too long for the time provided so students were allowed not to finish if they ran out of time.

NAMES _____
 DATE _____ CLASS _____

Instructions: Read carefully each question and discuss in group your answer. Write short notes for your answers once you have reached and agreement. This is an oral activity, what is IMPORTANT is the DISCUSSION not so much the written answers.

QUESTIONS ON ADAPTATION

1. **Imagine you climb up a high mountain and when you are almost at the top you stop to camp for the night. Name two animals and plants you could find there.**

2. **Why do you think you would find those of animals and plants? Give reasons for your answers.**

Figure 4.1: Extract from prompt on Living things for CLIL students.

NOMBRES _____
 FECHA _____ CLASE _____

Instrucciones: Lee cada pregunta con atención y discute con tu grupo la respuesta. Una vez que hayáis hablado todos y lleguéis a un consenso escribid frases cortas a modo de notas como respuesta. Esta actividad es una actividad ORAL, lo IMPORTANTE es la discusión, no la respuesta escrita.

PREGUNTAS

1. **Imaginaros que estáis subiendo una montaña muy alta y cuando estáis casi en la cima decidís acampar para pasar la noche. Nombra dos animales y dos plantas que podríais encontrar en ese lugar.**

2. **¿Por qué creéis que podríais encontrar esas plantas y esos animales allí? Explicad bien por qué pensáis así .**

Figure 4.2 Extract from prompt on living things for L1 students.

Both prompts included seven questions aimed to promote group discussions therefore the students were asked to reason their answers to the questions, independently whether these were correct or incorrect. Most of the questions (see Appendices 3 and 4) asked students to imagine different situations or requested

them to provide opinions and/or reasons (see questions 1 and 2, Images 4.1 and 4.2 below). In this way, the prompt required no specific knowledge from the topic for students to remember but rather to use acquired knowledge to reason their answers (see Appendices 3 and 4 for the complete prompts in Spanish and English).

4.3.2.2 RTPM-based problem solving activity (PSA)

In the science classroom, the teaching and learning process often heavily relies on specific contents and topics at hand, mainly reflected in scientific concepts. In the design of this study, this part of the learning process was reflected in the STA which was seen as a representative science class activity closely connected to a specific scientific topic. However, other elements of learning such as deductive reasoning are also a part of learning that are especially present in the science-related subjects. In order to take into account those elements, it was considered important to design a general problem-solving activity (PSA) deprived of any specific topic-related elements as it is also a valuable instrument in the group co-construction of knowledge.

Therefore, the following two aims were stated for the PSA: (i) to design a different type of activity to trigger reasoning skills in the CLIL and L1 Science classrooms, and (ii) to obtain a more complete picture of the process of the co-construction of knowledge in group work. Therefore, the PSA consisting of a group discussion around the RTPM was used in Part 1 of the study in order to compare its effect on students' communicative and reasoning skills to those triggered by the topic-related science prompt. During both sessions, students were told that the main purpose of the two activities, STA and PSA, was the discussion and that they had to aim to reach an agreement at the end. In this way teachers made sure that both STA and PSA generated group discussion, although of a dissimilar type, which was analyzed with the multi-layered model which will be further presented in Chapter 5.

The RTPM-based PSA in groups was used in a twofold way. As described in section 3.3.3.1, RTPM is a multiple-choice intelligence test of abstract reasoning. It comprises 60 logical-perceptual problems where students are asked to identify a missing item that completes a pattern presented in the form of a 2x2, 3x3 or 4x4

progressive matrix. These problems are divided into five sets of 12 items labelled from A to E, which become increasingly difficult. Below is an example of one of these items:

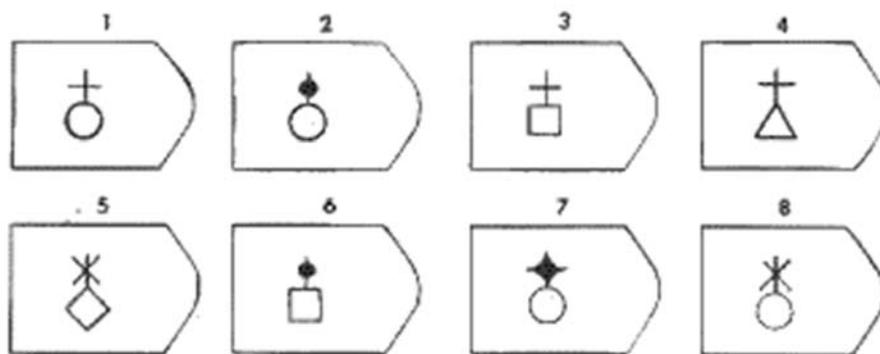
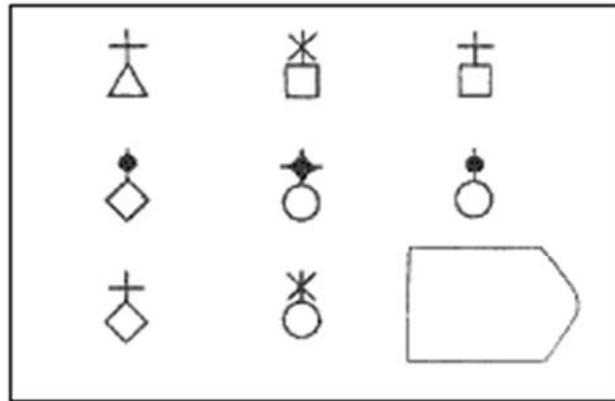


Figure 4.3: Example problem E7 in the RTPM

The first time students' discussion while doing the RTPM in small groups was analysed in Part 1 of the study where it was examined as a non-content related group reasoning discussion activity. In this case, the results of the test were not taken into account. Only the discussion around the RTPM was analysed using the multi-layered analytical model with the aim to examine students' use of speech functions, XXX and XXX in a small group discussion in a Science class within a content un-related problem solving activity.

In Part 2 of the study, the RTPM was used to *measure* the results of the students' reasoning skills. Therefore, the PSA results are considered not in terms of the

discussion and thinking process that it promotes in each group, but measuring its results in terms of effectiveness.

To sum up, in Part 1 the PSA is analyzed at the discourse, knowledge and interactional level. However, in Part 2, each examined group's scores on the reasoning skills test are measured and compared in terms of the context variable (CLIL vs L1). However, Part 2 also considers another variable: the TT intervention program already presented in section 3.X. In this respect, Part 2 resembles previous studies on the TT program performed in the L1 context in which the RTPM of non-verbal reasoning was used to measure the reasoning skills of two groups of students, native speakers of English (Britain; Mercer *et al.*, 1999) and Spanish (Mexico; Rojas-Drummond *et al.*, 2003). The studies measured the results by setting up an experimental design with a control group and an experimental group which followed the Talk Reasoning and Computers program (Mercer *et al.*, 1999), later called *Thinking Together program* (Dawes *et al.*, 2004) designed to improve the quality of classroom talk.

Similarly, in the present study, one class from the CLIL school (CLILA) and another class from the L1 school (L1A) were chosen as the experimental groups. As already explained in section 3.3.3, the *Thinking Together* program was adapted to the CLIL and L1 contexts in the CAM and the CLILA and L1A teachers were trained in the program. The participating teachers were selected by the school, taking into account availability to follow the training in the TT program and its posterior implementation. The training took place in early February 2015 and the TT program was implemented between mid-February and mid-May 2015.

The following section will give a detailed account of the data collection process that took place between September 2014 and June 2015. For a better understanding, a chronological account of each of the stages will be provided.

4.4 Data collection process

4.4.1 Stage 1

The data corpus for this study was collected at two times (T): end January - beginning of February 2015 (T1) and beginning of June 2015 (T2). All participating groups in the four classes (CLIL Class A; CLIL Class B; L1 Class A and L1 Class B) were video and audio recorded in two sessions (STA and PSA) at both times (T1 and T2). The recordings were made by the researcher, several research assistants from the Universidad Autónoma de Madrid (henceforth UAM) and teacher colleagues from the recorded schools. However, due to time constraints and data manageability, for this study, only part of the collected data corpus was used.

The very first step in data collection was contacting the two schools and presenting the intervention program to the corresponding headmasters. The results of the improvement in the quality of classroom talk and group reasoning found by previous studies (Mercer et al., 1999; Rojas-Drummod et al., 2003) were presented to the headmasters, with a particular emphasis on the benefits of developing this program in their schools. The private school (CLIL school) is the researcher's workplace and the subsidized school (L1 school) also partially belongs to the same owners of the private school. Once the program was accepted, the recording and intervention schedule, participating classes and teachers and recording dates were planned. Both schools issued parent letters informing them about the program and asking for a signed consent for video recordings (see Appendices 1 and 2). All parents of the children participating in this study gave their signed consent.

The researcher had several meetings with the four participating teachers, one in each examined class correspondingly, in order to present them the activities and the TT intervention program. During these meetings the topic for the STA was decided and once the researcher designed the first version of the prompt, it was sent to the teachers for their feedback and comments, and the version was improved and sent back to them for approval. This procedure was repeated several times until the final version was elaborated by the researcher and approved by the teachers. Separate meetings with the two teachers that were going to follow the intervention program

were also held. In these meetings, further details on the TT program were presented and the dates for the teacher training were planned. Meanwhile, the material for the PSA in form of copies of the manual and answer sheets of the RTPM were obtained through the Education Faculty at the UAM.

To be able to carry out the designed STA and PSA activities, the four teachers that participated in the study were asked to divide their respective class in groups of three students of mixed ability and gender. However, this rule was not always followed due to the uneven number of students in some classes, so two groups were made of four students each and one group had only two students. To attend to the comparability issues, these three groups were not taken into account for the analysis in the present study.

4.4.2 Time 1

1) Discussion activities: science discussion and problem-solving

The two discussion activities were audio and video recorded with the use of ipads and video cameras. The ipads were solicited from the ipads deposit in the private school (CLIL school) where the researcher works whereas the video cameras were requested from the Unit of Audiovisual Resources and Multimedia (*Unidad de Recursos Audiovisuales y Multimedia*, URAM) at the UAM. Some audio recorders were also used in order to improve the sound quality of the recordings, some of them were loaned from the URAM and some belong to the UAM-CLIL research group.

The recording process was organized as follows: both the researcher and the research assistant carried all the recording material and normally arrived to the school an hour before the class started in order to prepare the classroom for the group work activities before the teacher and the students arrived. Thus, they prepared the group sitting tables and video cameras and iPads using tripods and other tables to focus on the working tables. Each camera or iPad recorded one group, in total there was a minimum of 7 and a maximum of 9 cameras or iPads recording each group work session simultaneously. The three audio recording devices were used as supporting audio for the groups that seemed to receive more surrounding noise. The students came in and sat down at their corresponding tables. While the

teacher was giving instructions on the activity the video cameras and iPads were set up to start the recording. Once all the cameras and iPads were ready, the group activity began.

The recordings were done on the dates chosen by the schools in a total of four days at the end of January – beginning of February 2015. In each school two sessions (STA and PSA activities) and two classes (one experimental and one control) were recorded, thus making a total of 4 sessions recorded in each school and 8 sessions in total. More specifically, the STA session was recorded on the 26th of January 2015 in both CLIL A and CLIL B classes and on the 3rd of February 2015 in both L1 A and L1 B classes. PSA also comprised one session in each class and took place on the 22nd of January 2015 in CLIL A and CLIL B classes and on the 27th of January 2015 in L1 A and L1 B classes. Each STA and PSA session lasted 45 minutes, therefore the total recording time in T1 amounted for 3h in each school.

T1 data corpus comprises two video recordings per group with a total of 31 groups, which makes up for a total of 62 video recordings, and three extra audios per class, 12 audio recordings in total. However, and for the purposes of this study, only 4 groups carrying out the two activities from each class were randomly chosen to be analysed, which makes a total of 16 groups and 32 video and audio recordings of both activities, 16 recordings of the 4 groups doing the STA and 16 recordings of the PSA (approx. 24 hours). These 32 recordings were transcribed using a specialized open source transcription and analysis software for audio and video data, Transana² and the Santa Barbara conventions (Du Bois *et al.*, 1993; Du Bois, 2003) and constitute T1 data corpus with STA data of 47,928 words and PSA data of 65,359 words, thus amounting for a total of 113,287 words (see Table 4.1).

2) RTPM

Simultaneously to carrying out the group work PSA, students were also engaged in solving the RTPM. As mentioned before, the copies of the RTPM were obtained from the Education Faculty in the UAM. The researcher made enough copies of the 60 problems in the booklet and the answer sheet for each group in the CLIL and L1

For further information see: www.transana.com.

classes and all the materials were handed out during the PSA session. At the end of the PSA session, the researcher and the research assistant collected all the booklets and answer sheets from the groups. The answer sheets were later corrected following Raven’s test manual (Raven et al., 1998) and punctuation data were retrieved. While most of the groups were able to finish the test, some handed it in unfinished. Therefore, only the groups with completed answer sheets were taken into account. As a result, 10 finished tests were collected in the CLIL school (5 groups in each CLIL class, A and B) and 9 tests in the L1 school (5 groups in L1 class A and 4 groups in L1 class B), which amounts for a total of 19 complete tests (see Table 4.1).

T1: Type of session	Data collection method	Type of data	Amount of data
STA: Group work discussion	- Video recordings of group interaction; - audio recordings	- Video recordings; - audio recordings; - transcripts	16 x 45min group interactions: - 12 hours - 47,928 words
PSA: Group work problem-solving based on RTPM	- Video recordings of group interaction; - audio recordings	- Video recordings; - audio recordings; - transcripts	16 x 45min group interactions: - 12 hours - 65,359 words
	RTPM booklet and answer sheet	RTPM complete texts with results	- 10 x CLIL complete texts (CLIL A & CLIL B) - 9 x L1 complete texts (L1 A & L1 B) Total: 19 complete texts
TOTAL DATA (STA + PSA):			113,287 words

Table 4.1: Description of T1 data corpus

4.4.3 Stage 2: The Thinking Together intervention program

Between T1 and T2 an intervention program, based on the TT program designed to improve the quality of classroom group talk and implemented in the UK and Mexico (Mercer et al., 1999; Rojas-Drummond et al., 2003) and presented in section 3.3.3, was developed for the two experimental classes (CLILA and L1A). However, in this study the TT program had to be adapted in order to make it appropriate both for CLIL students, since the original English format, the only one available to the researcher, was developed for English native speakers, and for L1 students, since a translated version in Spanish had to be prepared. Apart from such linguistic adaptations and due to time constraints, the original program consisting of 16 lessons was reduced to 10 lessons. Some lessons were taken out due to possible language-related difficulties in the CLIL class such as, for example, poems that were considered too difficult for the non-native students (CLIL students). Another lesson was also taken out because it required a computer program that was not available in Spanish for the L1 students.

Other problems emerged due to a restricted time period (February–June 2015) available to the participating teachers to do the lessons. Therefore, during the training session, the teachers and the researcher agreed to develop a total of 10 lessons. Moreover, during this session, the researcher made a more profound presentation of the general objectives of the TT program and each lesson plan was explained and discussed. The training lasted 4 hours and was held during a morning session (for more details, see Appendices 8 and 9).

After the training session with the two teachers was held and the total amount and the contents of the 10 lessons were agreed with the teachers, the researcher adapted them for the CLIL-L1 TT intervention program. This meant preparing the materials needed for each lesson in order to give them to the teachers. Normally, teachers did one TT lesson per week. During the intervention program (February–May 2015), the researcher maintained a frequent communication and gave support to any doubts or needs the teachers had in relation to the program.

Below is a sample of one of the TT lessons in its English version and another extract from the Spanish version (see Appendix 11 for a longer sample in Spanish):

Lesson 1

Talking about Talk

What teachers say

Children may be reluctant to work in groups arranged by the teacher. It is a good idea to give them an overview of the purpose for these lessons, and to tell them that if groups are based on friendships, they may tend to agree without critical consideration. Explain that children have been put in these groups because each of them has a positive contribution to make. It is a good idea to seat children round the corner of a table, rather than opposite each other, or in a row – it makes it easier for all to participate equally.

Note

This lesson could be tackled over two shorter sessions if preferred. It is divided into two parts.

Resources

Picture cards about situations or things that could involve talk
Word cards cut up

Objectives

To raise children's awareness of talk: 'We are learning to talk about talk'.

Possible criteria for success

Children are able to talk to each other about the kind of talk that might be happening in a range of situations.
Children can describe their discussion to the whole class.
Children are able to listen to each other.
Children can say some of the things that make a good talker.
Children can say some of the things that make a good listener.

Part 1

Whole-Class Introduction

Begin with a whole-class discussion about talk. The following questions could be starting points for the discussion.

- Who thinks they are a talkative person?
- Who thinks they are a quiet person?
- Who do you like talking to? Why?
- When are you asked not to talk? Why?
- Why is it really helpful to be able to talk?
- What sort of things can we do by talking together?

Now show the children one of the pictures. Ask them to describe what they can see happening in the pictures.

Lesson 1: Talking about Talk

Group Work

Arrange the class into groups of three. Give each group one of the picture cards and ask them to talk together to decide what talk could be going on and agree on

Figure 4.4: Sample of the TT original English materials, lesson 1.

LECCIÓN 1: HABLAR DE CÓMO HABLAR**Materiales:**

Diccionarios

Fotocopias: 1A: Lista de palabras para hablar; 1B: Clasificar el habla; 1C: Bocadillos

Objetivos:

- Que los alumnos se den cuenta de cómo hablan.
- Introducir algunas palabras que describen diferentes maneras de hablar para que los niños practiquen usándolas.

Clase Magistral Introductoria:

Introducimos el tema del que se va a hablar (el habla en sí) y explicamos los objetivos que se pretenden conseguir en esta lección. Preguntamos a los alumnos acerca de sus ideas sobre el 'habla' (ver ejemplos de preguntas más abajo). Estas preguntas deberían provocar respuestas relacionadas con la experiencia personal de los alumnos y sus ideas.

PREGUNTAS GENERALES

¿Se te da bien hablar?

¿Alguna vez te han pedido que dejes de hablar?

¿Quién te lo pidió? ¿Cuándo te lo pidieron?

¿Alguna vez alguien te ha hecho hablar cuando no quieres hacerlo?

PREGUNTAS SOBRE APRENDER A HABLAR

¿Alguien vive con algún bebé?

¿Cómo aprenden los bebés a hablar?

¿Quién os enseñó a hablar a vosotros? ¿Vosotros aprendéis a hablar en el cole?

PREGUNTAS SOBRE EL USO DEL HABLA

¿Alguna vez os piden que habléis en grupo en clase?

¿En qué clases?

¿Por qué el hablar es una habilidad tan útil? (dar razones)

PREGUNTAS SOBRE COMUNICACIÓN

¿Qué pasa cuando la gente habla pero los demás no escuchan?

¿Qué diferencia hay entre hablar y escribir?

Trabajo en grupo:

1. Clasificar el habla:

Figure 4.5: Sample of the designed TT materials in Spanish L1, lesson 1

As can be seen in figures 4.4 and 4.5, all TT lessons specified teaching materials (which the researcher made available to the teachers), lesson objectives and had a whole-class part, a group-work part and a final summing up/group assessment part. Most of them also offered extension activities or variations that could be done. At the end of the lessons students could always complete their talk diary, a tool used to make them reflect on their talk and that was done individually.

4.4.4 Time 2

1) Discussion activities: science discussion and problem-solving

In general terms, the recordings in T2 were made in the same way as in T1. However, a few improvements after the experience in T1 were introduced:

- The use of mini iPads was preferred as the quality of sound and image was similar to the video cameras and they involved much less effort when they had to be transported. Therefore, the use of the video cameras and tripods was minimized. The material was borrowed from the same institutions mentioned in the description of T1.
- More audio devices were used in order to help with the sound problems found in T1 recordings (in some groups background noise made it very difficult or impossible to understand their interactions).

The organization of the recordings was done in the same way as in T1. The dates chosen by the schools were at the beginning of June 2015. As in T1, four sessions in each school were recorded (two activity sessions, STA and PSA, in two CLIL classes, respectively, and the same procedure was repeated in the two L1 classes), which made a total of 8 recorded sessions. All activities, the science STA and the PSA using RTPM were exactly the same as the ones performed in T1. The recording also took place over two days in each school. However, for this study, only the PSA sessions were used in T2. The PSA comprised one session in each class and took place on the 1st of June 2015 in CLIL A and CLIL B classes and on the 12th of June 2015 in L1 A and L1 B classes. Each PSA session lasted 45 minutes, therefore the total recording time in T2 amounted for 90 minutes, (1 hour 30 minutes) in each school. Both the researcher and the research assistant organized the classroom settings in the same way as it was described for T1. This time, however, six audio recording devices were used as supporting audio. No further changes were made in the recording process as it was described for T1.

As well as with T1 data collection process, T2 data corpus comprises two video recordings per group with a total of 31 groups which makes up for a total of 62 video recordings and six extra audio per class, 24 audio recordings in total. However, and

for the purposes of this study, only two groups from the two experimental classes (CLIL A class and L1 A class) performing one session (PSA) were randomly selected for the analysis. The groups were named Clila3 and L1a4, respectively. The first decision, to include only one reference group from each experimental class, was due to the length and complexity of the study and the need to reduce data in order to make the comparative element in this study manageable. The second decision, to only examine the PSA and not the STA session, was motivated for the same reason aggravated with some technical problems during the recording as some of the data from one of the groups in T2 was recorded without sound and therefore no transcription could be made. Thus, in terms of STA and PSA data, T2 data corpus makes a total of 2 groups and 2 recordings. These 2 recordings were transcribed using Transana and amount for a total of 7,410 words.

2) RTPM

As in T1, while carrying out the group work PSA, the students were also doing the RTPM reasoning test. The materials, handing out and correction of the test was done following the same procedures as described for T1. Thus, the test scores from all groups was taken into account except the ones that for validity criteria, could not be evaluated. As with the RTPM results obtained in T1, the validity criteria for scores was determined following Raven's test manual (Raven et al., 1998) and will be further explained in results chapter 7. The only exception in T2 was that in order to evaluate the effect of the TT program, only the results from the experimental classes (CLIL A and L1 A) were analysed. To make the comparison of the RTPM results obtained before and after the intervention program, only the results from the same CLIL A and L1 A groups as in T1 were taken into account. As a result, 5 tests were collected in the CLIL A class and 5 tests in the L1 class A, which amounts for a total of 10 tests (see Table 4.2).

T2 session	Data collection method	Type of data	Amount of data
PSA: Group work problem-solving based on RTPM	- Video recordings of group interaction; - audio recordings;	- Video recordings; - audio recordings; - transcripts	2 x 45min group interactions: - 1hour 30 min - 7,410 words
	RTPM booklet and answer sheet	Raven's test results	- 5 x CLIL A complete texts - 5 x L1 A complete texts Total: 10 complete texts

Table 4.2: Description of T2 data

4.4.5 Data used in Part 1 and Part 2 of this study

Table 4.3 below presents a summary of the corpus used in this study. On a general rule, the same number of randomly selected groups from each class were used for the two analytical parts of the study. Thus, in order to answer RQ 1, RQ2 and RQ3, in Part 1, four groups from each class were randomly selected. That is, in the CLIL school, out of the total of 9 groups in CLIL A class and 8 groups in CLIL B class, 4 were randomly selected from each class as well as in the L1 school, out of the 7 groups recorded in each of the L1 classes (A and B), also 4 groups were randomly selected for the analysis. This means that a total of 16 groups were examined in Part 1.

To respond RQ5 in Part 2, the multi-layered analysis to examine the effect of the TT intervention program on group talk and joint reasoning, in the experimental classes CLIL A and L1 A the sessions used for the analysis come from T1 and T2, i.e. before and after the intervention, respectively, whereas in the control classes CLIL B and L1 B the examined sessions only come from T1. Moreover, only one group from each experimental class (CLIL A and L1 A) was selected for the analysis.

However, in order to answer RQ4 in Part 2 of the study, the analysis of the group reasoning process using RTPM results had to be done for which the groups were not chosen randomly but only the groups with valid scores were examined. Hence, in the CLIL school, out of the total of 9 groups in CLIL A class and 8 groups in CLIL B class, 5 groups from each class were selected and in the L1 school out of the total of 7 groups in L1 A class also 5 groups were used whereas out of the total of 7 groups in L1 B class only 4 groups were used.

	CLIL SCHOOL		L1 SCHOOL		TOTAL
Class	A	B	A	B	
Number of students	27	24	23	20	94
Number of groups	9	8	7	7	31
TIME 1					
Groups used in PART 1	4	4	4	4	16
STA sessions used in PART 1	1	1	1	1	4
Date of recording	26/01	26/01	03/02	03/02	2015
Duration	45min	45min	45min	45min	3h
Number of words	12,195	12,207	12,957	10,569	47,928
PSA sessions used in PART 1	1	1	1	1	4
Date of recording	22/01	22/01	27/01	27/01	2015
Duration	45min	45min	45min	45min	3h
Number of words	16,078	16,456	14,356	18,469	65,359
TIME 2					
Groups used in PART 2					
RTPM groups used in PART 2 (RQ4) (valid groups)	5	5	5	4	19
RTPM sessions used	2 T1 & T2	1 T1	2 T1 & T2	1 T1	6
Experimental groups used in PART 2 (RQ5)	1	-	1	-	2
PSA sessions used (T1 & T2)	2	-	2	-	4
Date of recording	01/06	-	12/06	-	2015
Duration	1h30min	-	1h30min	-	3h
Number of words (T1 & T2)	8,642	-	7,388	-	16,030
Notes: - Yellow: details on the total recorded data. - Blue: Data used in PART 1. - Green: Data used in PART 2.					

Table 4.3 Data corpus used in this study

4.5 Data analysis

A key factor in this study is the analytical methodology since it is directly related to the multi-layered model developed in this thesis. All data analysis methods used here are closely connected to one or more of the research questions stated for this study. To make it more comprehensible, this section shows this connection between the research questions and the data analysis methods used. It is divided in two sub-sections, the first one (section 4.5.1) comments on the research questions that were analysed through the multi-layered analytical model, which will be presented in detail in the next chapter and which comprises three layers: discourse layer, knowledge layer and interactional layer. The research questions related to this three-layered analysis are the research questions in Part 1 (RQ1, RQ2 and RQ3) as well as RQ5 in Part 2. The second sub-section 4.5.2 presents the data analysis methodology used to answer RQ4), which refers to the RTPM results.

4.5.1 Analytical procedures for the examination of the co-construction of knowledge

When this research project was planned, one of its main aims was to give a precise and detailed account of the language and cognition connection in CLIL. In addition to this overall objective, three other aspects became relevant: (i) a comparison across two contexts (CLIL students' results vs their peers' performance in the L1); (ii) a comparison across two types of group work activities that could take place in the classroom (STA vs PSA); and (iii) a comparison of students' performance before and after an intervention program aimed to improve joint reasoning and the quality of small group talk.

In order to examine the complex connection between language, content and cognition and attending to the particular purposes of the study, an analytical model containing three layers was designed: discourse, knowledge and interaction. Due to its complexity, it will be presented in more detail in Chapter 5. Once the model was defined, the tagging of the transcribed data and the quantitative analysis were performed using the UAM Corpus Tool (O'Donnell, 2008), a program developed to

assist in the annotation and retrieval of text corpora (see figure 4.6 for an example of coding).

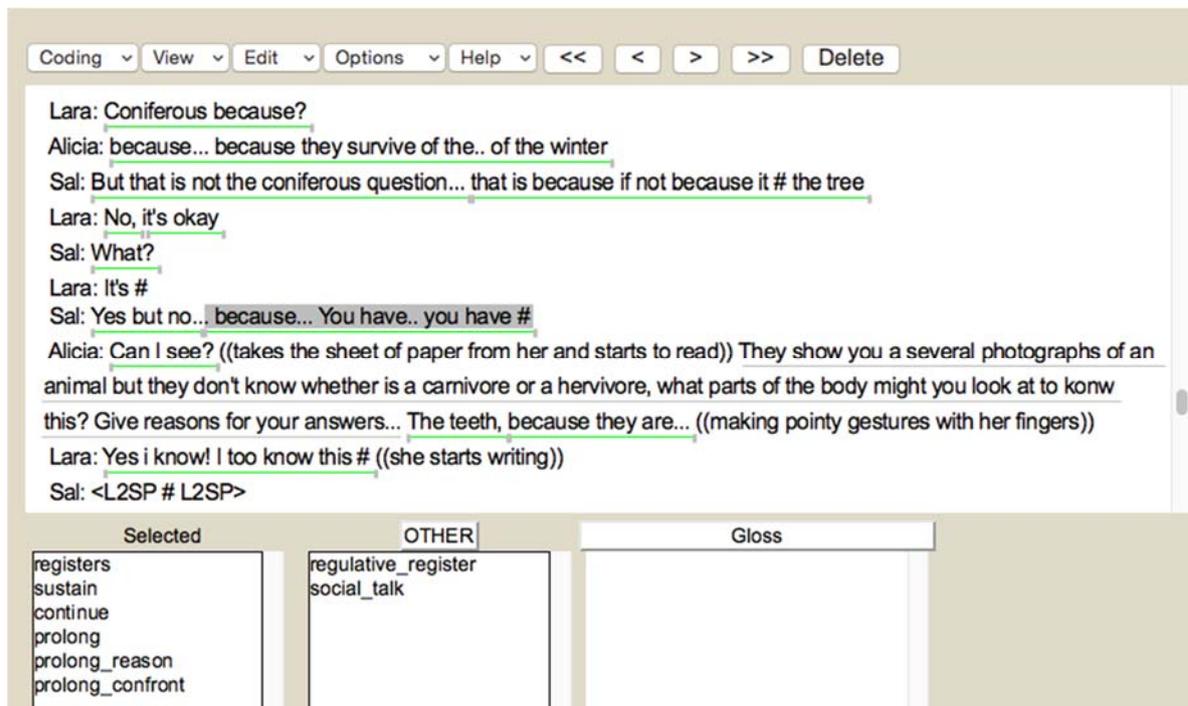


Figure 4.6: Screenshot of the coding process in the UAM Corpus Tool.

First, a selection of an approximately 5% of representative data from the whole corpus was coded using the UAM Corpus Tool and the obtain colleagues in order to guarantee reliability and validate the model. Each researcher coded the representative data sample separately using the UAM Corpus Tool. Disagreements were discussed and the coding and the model were revised accordingly until the inter-rater reliability reached a 0,05%. In chapter 5 we will account for the different versions that were made of the model after the reliability analysis as well as describe other changes that were made due to difficulties that appeared in the coding process. In the categorization process, two decisions were agreed on: (i) only the understandable transcribed data would be coded, and (ii) the parts where the students addressed the teacher were also omitted as the focus of the study was on student-student interactions. Eggins and Slade's (1997) systemic-functional model for the analysis of moves in casual conversation, each move in the transcribed group interactions was analysed and coded taking into account its meaning, form and context of use. Normally, each turn comprised one move but examples of several

moves within the same turn were also found. Further aspects of the multi-layered analysis will be discussed in chapter 5.

4.5.2 Analytical procedures for the examination of problem-solving

Once the connection between language, content and cognition was understood, another relevant aspect, of especial interest for educators, emerged, namely how that connection can help solve problems or produce good joint reasoning results among students. Interventions and activities in the classroom aim at improving students' learning skills. With this aim, a specific intervention program was developed to promote quality group talk and, therefore, improve the students' problem solving and reasoning skills as a group. To determine the effect of the intervention on the development of these skills, the RTPM, an activity-test, replicating previous studies (Mercer et al., 1999; Rojas-Drummod et al., 2003) was performed at two times, before and after the intervention. the RTPM was administered following the instructions in the manual (Raven et al., 1998) and once it was done by students, it was corrected using a correction sheet provided in the manual. Instructions in the manual were also followed in order to determine the validity of the task performed by the group and the results of the invalid groups were eliminated from the study.

4.6 Chapter summary

The purpose of this chapter was to describe the methodological approach, participants, data collection methods, and to give an overview of the data analysis procedures used in the present study. The chapter started by presenting the research questions and was followed by a description of the participants in the CLIL and L1 schools. Then the two data collection sessions and the activities implemented were explained. In the next section a detailed description of the data collection process in the two times of the research plan was provided, to end up with a brief account of the data analysis procedures, where the two types of analysis developed in this study were highlighted. The first type of data analysis, which employs the multi-layered analytical model designed for this study, was briefly mentioned as it will be

further explained in the next chapter. The second type of data analysis was described in more detail. In this way, the chapter gives a wide description of those aspects that configure the *context* of the present study. The analytical model will be presented in the next chapter 5 and this will open up the door for chapters 6 and 7 with the presentation of results obtained in this study.

Chapter 5: Analytical framework for the analysis of knowledge construction through language

Introduction

A multi-layered analytical model

Layer 1: Discourse moves

The move as the unit of analysis

Opening moves

Sustaining moves

Layer 2: Knowledge use

Facts

Explanations

Evaluations

Layer 3: Interactional patterns

Analytical considerations in the application of the model

General considerations

Modifications after pilot co-coding

Chapter summary

5.1 Introduction

The two methodological chapters, Chapter 4 and this chapter, describe the context, participants, data collection methods, and data analysis procedures used in this study. Chapter 4 presented the participants, the data collection procedures used, the type of data collected, and a general overview of the process for the data analysis.

This second methodological chapter gives a detailed account of the analytical process by presenting the analytical framework designed for this study. It begins by stating the need for this model and then it presents the different layers it is formed by and how the model developed from the original versions of Eggins and Slade (1997), Dalton-Puffer (2013) and Christie's (2002) models. This section is followed by an account of the decisions taken throughout the tagging and analytical process.

5.2 A multi-layered analytical model

As already pointed out, in order to describe small group co-construction of knowledge across groups (CLIL and L1) and activities (STA and PSA) and thereby answer RQ1, RQ2, RQ3 and RQ4, a multi-model and multi-layer framework has been designed and applied to the collected data corpus. The design and application of this model is set in the need to explore how language is used to enhance cognitive engagement in group-work discussions. Thus, a discourse and knowledge layer were designed for the analysis of language and content, respectively. Due to the proven effects that patterns of interaction have on language use in pair/group work and L2 learning (e.g., Ballinger, 2013; Storch, 2002), a third layer was added, the interactional layer. In fact, a number of studies have found how certain types of interaction (mostly the collaborative style) create opportunities for more effective L2 learning (see e.g., Galazci, 2008; Kim and McDonough, 2008; Martin_Beltrán, 2010; Watanabe and Swain, 2007). In this study, the effect of patterns of interaction will be measured both in terms of language and content engagement. To sum up, in the present study, three aspects, and realized at three layers, have been considered influential in the learning process in any context in general and in CLIL specifically) that takes place while performing group communicative activities: discourse, knowledge and interaction.

Two main theoretical models which have already been presented in chapters 2 and 3 support these layers: Systemic Functional Linguistics and Sociocultural theory. For the discourse layer, SFL discourse analysis, and more specifically speech functions model (Eggins and Slade, 1997), was used. For the knowledge layer, SFL register theory, as applied to formal contexts in classroom registers model (Christie, 2002), together with a construct of cognitive discourse functions (Dalton-Puffer, 2013) were heavily drawn on. The interactional layer is mainly based on the socioculturally-framed patterns of interaction (Storch, 2002).

From an SFL perspective, analytical models tend to focus on different levels of the stratified functional language conception. Within the context of situation referred to in chapter 2, there are models such as speech functions (Eggins and Slade, 1997) or classroom registers model (Christie, 2002; Schleppegrell, 2004) used for the

analytical purposes that focus on discursive aspects. From a sociocultural perspective, and as pointed out by Pastrana, Llinares and Pascual (forthcoming), most studies on talk have used a multi-level analysis. Thus, for example, in Mercer et al. (1999), after a qualitative analysis, a quantitative data examination was performed using key language features and length of utterances. In Drummond et al.'s (2003) study, a similar mixed-methods approach was done where types of talk, features of talk and key words were quantified. Each of the aforementioned studies have focused on specific aspects of language: linguistic features, key words (Mercer et al., 1999; Rojas-Drummod et al., 2003), registers (Christie, 2002), discourse moves (Eggin and Slade, 1997). However, patterns of interaction are not present in either of these studies.

The connection between language and cognition, together with the intervention or influence of patterns of interaction, makes the multi-layered analysis proposed here an appropriate methodological tool for the understanding of content and language integration in group work discussions. It is through the analysis of these different levels that we can contemplate the sphere of language use through the way students communicate (discourse) and convey different meanings (knowledge), while interacting with their peers (interaction).

Thus, for the analysis of the data in the present study, a model was designed that analyzes discourse, knowledge and interaction at different levels of abstraction and generality and, at the same time, allows for the identification of the linguistic resources used by students (see fig. 5.1 below). The three-layered framework developed for the analysis of group-work interaction in the present study includes:

- a) A discourse layer: An adaptation of the model developed by Eggin and Slade (1997:192-213).
- b) A knowledge layer: Which comprises the types of talk and registers presented by Christie (2002:3) and an adapted version of cognitive discourse functions as proposed by Dalton-Puffer (2013:19).
- c) An interactional layer: Which deals with equality and mutuality dimensions of group interactions as presented by Storch (2002:127-128).

These three levels were used in the analysis in through a mixed-methods design, quantitatively and qualitatively.

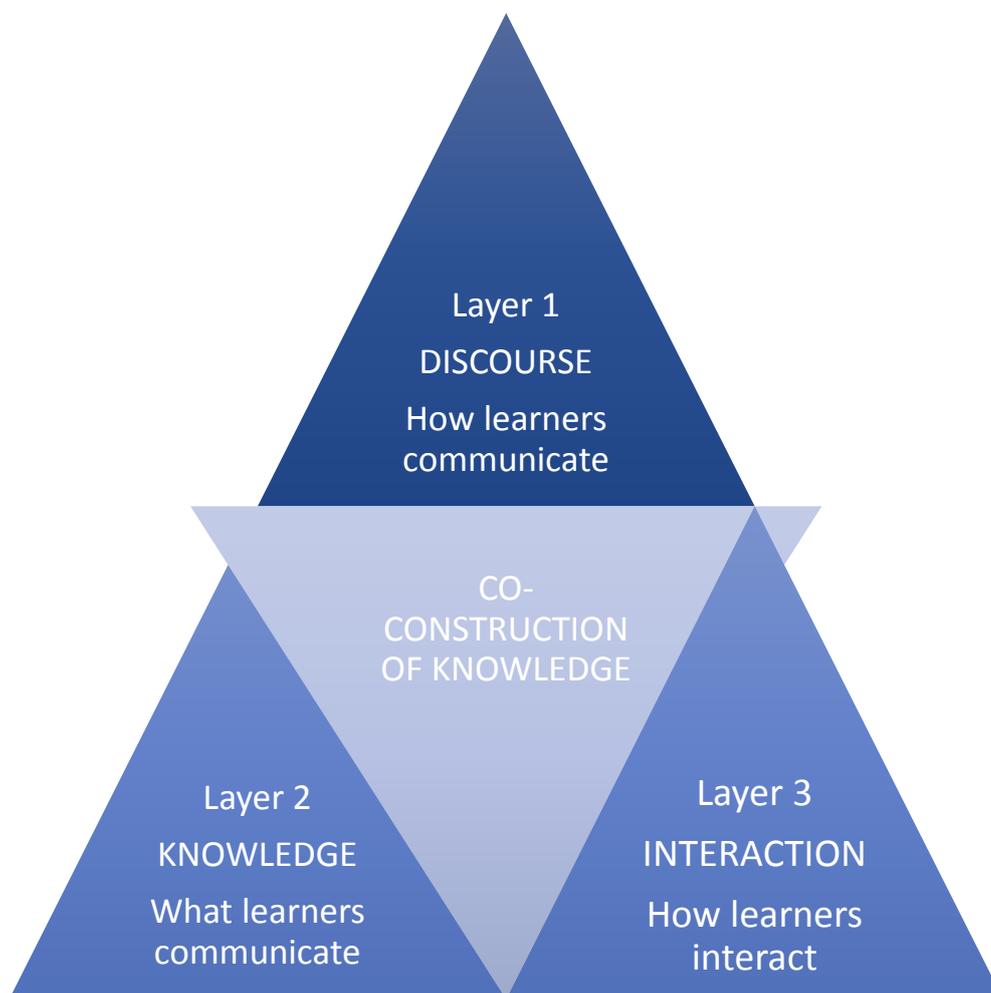


Figure 5.1: Multi-layered analytical model proposed in this study

The study hence examines students' group work discussions by analysing (a) the discourse, focusing on the moves used by students (layer 1), (b) the knowledge, analysing the registers and cognitive discourse functions (layer 2), and (c) the interaction, concentrating on the mutuality and equality present in the interaction. The developed model attempts to reflect on the process of language being used to express content in a group work activity and the resolution of the task, in other words, what happens between the: "You can start now" and the: "We've finished!".

In the following sections we will present in more detail the different layers of this model. Sections 5.3.1 and 5.3.2 discuss the original models used for the the discourse and knowledge layers of the multi-layered framework. Next, section X.X explains

parts of the final model to account for the adaptations made to two out of the three original models (Eggins and Slades's discourse moves and Dalton-Puffer's CDFs). Finally, a final figure representing both the discourse and the knowledge layer is shown (figure 5.6).

5.2.1 Layer 1: Discourse moves

The first layer operates at the discourse level for which Eggins and Slade's (1997) systemic-functional model for the analysis of speech functions as realized as conversational moves in casual conversation has been adapted. The original model by Eggins and Slade has already been discussed in detail in section 2.2.3.3 and is provided here as a reminder (see Figure 5.2). This model was selected since it was considered that peer interaction is expected to be more similar to conversation among equals than to teacher-student interaction and, thus, traditional classroom-based models such as the IRF pattern were not useful for the study.

Some of the levels of delicacy described by Eggins and Slade (1997:192-213) and presented in section 2.2.3.3 were omitted in order to simplify the model and reduce it to the ones that would be expected to be most frequently found in a primary classroom context. In the next sections, we will further describe Eggins and Slade's original model in order to then comment on the adaptations made to this model until the final version was put together as it will be shown in Figure 5. 6 (section 5.2.2).

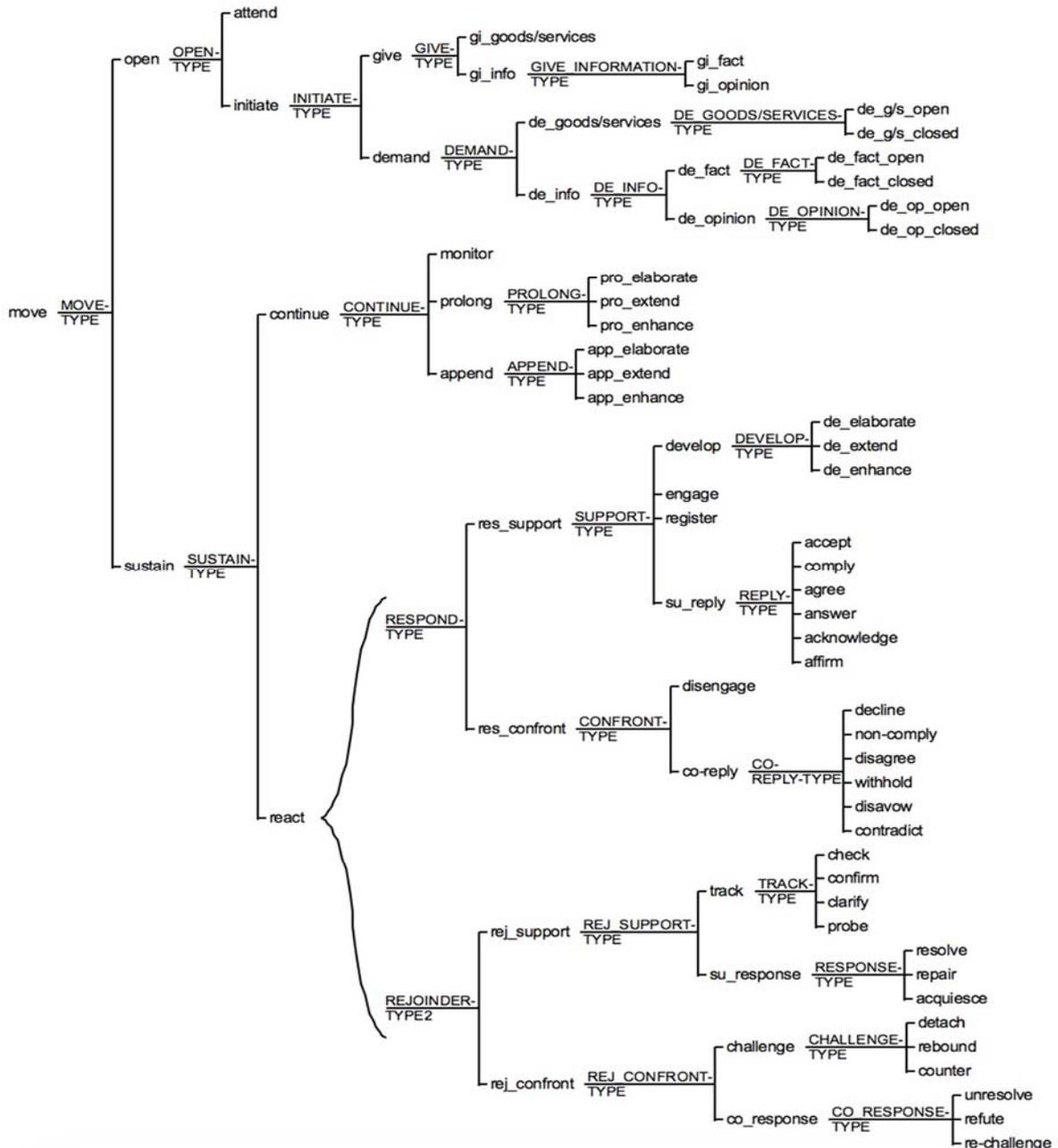


Figure 5.2: Speech functions in casual conversation, from Eggins and Slade’s (1997) model

5.2.1.1 The move as the unit of analysis

At this level, the main unit of analysis is the move, as it is where speech functions operate. Moves have been chosen over other units such as clause or turn because not every move equals a clause and because there can be several moves in one turn. The definition of move given by Eggins and Slade (1997:186) is “a unit after which speaker change could occur without turn transfer being seen as an interruption”. In

order to assign each move to a speech function, the criteria suggested by Eggins and Slade (1997:192) have been used:

Thus, speech function classes can be defined not only functionally (What move of each type does in conversation), but also grammatically, in terms of predictable selections of mood and modality, and semantically, in terms of predictable appraisal and involvement choices.

The criteria used were, therefore, functional, grammatical and semantic and the speech function classes were established in a comprehensive way, following Eggins and Slade (1997:191), “in that all moves should be assignable to one of the classes included”. The authors also defend the levels of delicacy and the extension of the network “based on a corpus of data” (1997:192). This same reason was used to reduce certain levels of delicacy used in the present study. Thus, when the move was found to be highly infrequent in the data corpus, it was omitted from the model.

The first basic moves are the *opening moves* and the *sustaining moves* (see Figure 5.2 above). As already explained in chapter 2 (section 2.X), *opening moves* are those that begin sequences of talk or open up new exchanges, while *sustaining moves* are those that contribute to the development of exchanges.

5.2.1.2 *Opening moves*

Eggins and Slade (1997) divided opening moves in *attending moves* and *initiating moves* (see figure 5.2 above). *Attending moves* are those that set the scene of the interaction whereas *initiating moves* those that get the interaction going. However, in the analytical model developed for this study *attending moves* were taken out (see Figure 5.3 below) since these moves are usually absent in a situation where the interaction is already organized in a formal way (e.g. an organized group work classroom activity). In an *initiating move* a speaker initiates an interaction either by *demanding* (normally realized in question format) or *giving information*. *Demanding moves* are further classified in *open* or *closed* questions by Eggins and Slade. However, this distinction was not considered relevant for the present study because the difference in an *open/closed demand* attends to the very form of the stated question and in this study only considers the fact of students making a question and

not the way they state it. Furthermore, following Halliday and Matthiesen (2014) classification of the commodity, Eggins and Slade (1997) divide *giving* and *demanding* moves into two further types – *goods and services* and *information* (see Figure 5.2 above). In the next delicacy level, Eggins and Slade relate to the content of the information, establishing the difference between *opinions* and *facts*.

Although in earlier versions of the discourse layer, *offer* and *command*, as represented in *giving* and *demanding goods and services*, were considered in the framework, at the end, only *giving* and *demanding information* were used (for the comparison between the original, Eggins and Slade's, model and the version adapted for this study, see Figures 5.2 and 5.3). This decision was taken because while analysing the data, the parts of group talk that were classified under the initiation moves as *command* and *offer*, as represented in *giving* and *demanding goods and services*, related to moments where students organized themselves and the task. However, this study does not focus on organizational aspects of the task that could be realised through those commands and offerings. Therefore, the two classroom register categories used by Christie (2002), regulative and instructional, and the concept of *social talk* were introduced (see final version in Figure 5.6 below). In this way, the *regulative* register substituted all data previously classified as offers and commands, with some moves also falling in to the *social talk* category. This allowed to separate this more procedurally-oriented type of talk from the *instructional* register which is directly related to content and which constitutes the main focus of this study. These registers will further be explained in section 5.3.2 on knowledge layer.

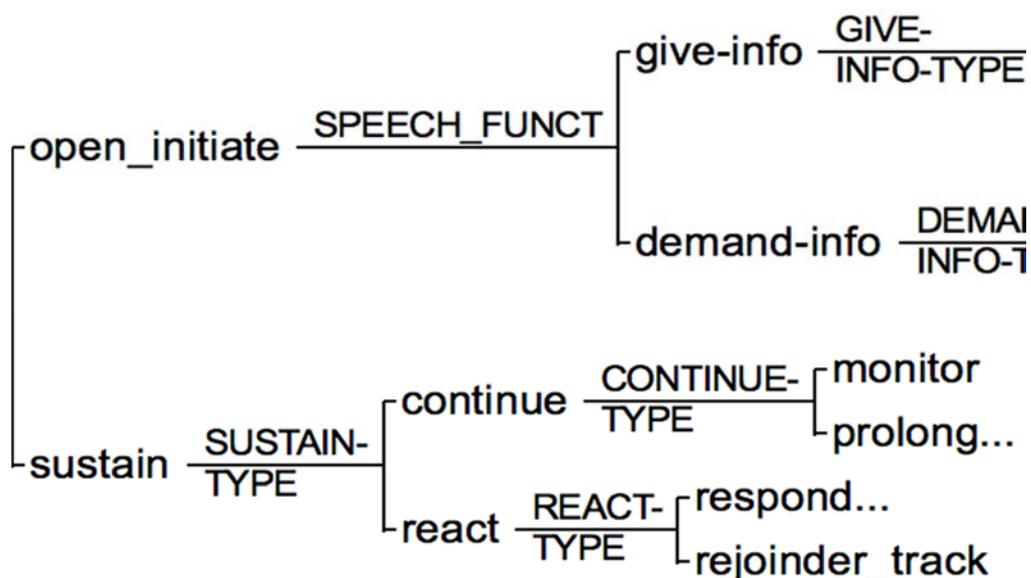


Figure 5.3: Detail of opening and sustaining moves used by the multi-layered analytical model (for a complete version developed for this study, see figure 5.6 below).

The examples below are taken from the corpus with the aim to illustrate the different types of opening moves. All the extracts use pseudonyms to protect students' identity. In each extract, the move assigned to the corresponding speech function is marked in **bold**.

Giving information³:

- 1 *Celia: Pues, pon dos puntos ... Andrés... qué tipo de... es para los tres, vamos*
- 2 *((she reads again)) qué tipo de planta podríamos encontrar en la selva*
- 3 *amazónica, por qué...*
- 4 *Andrés: **Pues podríamos encontrar...mmm... tréboles***
- 5 *Guille: Romero*
- 6 *Andrés: Romero y trébole*

Extract 5.1a: L1b6⁴ group in the group discussion activity.

³ For transcription symbols used in this study see Appendices 14 and 15.

⁴ L1b6: **L1** refers to the Science class in Spanish, **b** indicates the class, **6** is the group number they were assigned in the class by the teacher.

- 1 *Jimena: ((turns the page)) **five** ((they all move closer to see))*
- 2 *Irene: Let me see... this is also very difficult because this one cannot be..*
- 3 *Jimena: Yes this one is like this ((pointing))*
- 4 *Juan: The five*
- 5 *Irene: No, is getting lowest, is getting lowest*
- 6 *Jimena: No is four*
- 7 *Juan: Why not five?*
- 8 *Irene: No is very low, you see... the four is better((she writes and Jimena*
- 9 *passes the page))*

Extract 5.1b: Clila2⁵ group in the problem-solving activity.

In extract 5.1a the question read by Celia (lines 2 and 3) was not considered as the real initiation of the turn. The first opening move is the *giving information* move performed by Andrés (line 4 and in bold). Since the questions of the prompt in the STA were developed by the researcher in order to elicit conversation, they were not considered opening moves. In the PSA, every problem was a new version of the previous so no question was needed once the activity was explained, as every page turning (see extract 5.1b) served as the “initiating” question. Due to these particular circumstances, the first move used by any student in order to perform the task, and not to merely read the question or instruction, was the one considered initiating move. In extract 5.1b it is Jimena who initiates the turn (line 1) by *giving information*.

However, in the extract 5.2 below we have an example of Lara initiating a turn by *demanding information* (line 2). In the middle of the discussion of one of the questions in the prompt, suddenly Lara makes a question, thus *initiating* a new exchange.

⁵ Clila2: **Clil** refers to the Science CLIL class in English, **a** indicates the class, **2** is the group number they were assigned in the class by the teacher.

Demanding information:

- 1 *Saúl: Now me, now me, now me ((he nods)) One ... another*
 2 *Lara: **How do you say the things that is to breathe?***
 3 *Saúl: That they...eh...eh...*
 4 *Alicia: But three... examples!!*
 5 *Saúl: ONE is here!*

Extract 5.2: Clila3 group in the group discussion activity.

5.2.1.3 Sustaining moves

Moving to the second main category of moves in Eggins and Slade (1997) model, *sustaining moves*, there are two types of *sustaining moves*: *continue* and *react* (see Figure 5.2 above). The first one is the move in which the same participant who has done the initiating move *continues* with yet another move whilst the second is the one where another participant produces a *reacting* move to the initiation performed by the previous speaker.

Within *continuing* moves, only the categories of *monitor* and *prolong* were used in this study. *Monitor* moves are all those moves where “the speaker focuses on the state of the interactive situation” (1997:195). The most common moves categorized under this speech function were the ones in which students used to check if the rest of the group was following them. In extract 5.3, Maria (lines 2 and 3) checks if she understood the correct option correctly.

- 1 *Juan: Esta.. no, esta, esta ((Diego also points))*
 2 *María: Esta porque tiene aqui como una cruz aqui, con una %X%, **que***
 3 ***número? La seis?***
 4 *Juan: Seis... sí, sí, sí, sí ((They turn the page and María writes))*

Extract 5.3: L1a3 group in the problem-solving activity.

Prolonging moves are those where the students added to something they had said before “by providing further information” (1997:196). In extract 5.4, Lara justifies

her statement (lines 5 and 6) by *prolonging* through *giving a reason* that justifies her opinion.

- 1 Dani: ((reads question 2)) Why do you s... why do you think [you would find
- 2 those ani.. of animals and plants? Give reasons for ((turns the sheet to Guille))
- 3 for your answers ((Lara silently reads question 2))
- 4 Guille:ehm
- 5 Lara: I think you can find them **because- because there are most sunny and**
- 6 **in the mountains there is a lot of flowers** ((smiles, gazes at Dani))
- 7 Guille: ((to Lara)) NO.. that is not like that that %X% in the mountains and the
- 8 flowers ((imitates like a silly walk))

Extract 5.4: Clilb3 group in the discussion activity.

After applying the first versions of the analytical model to the data samples, the need to add another level of delicacy for *prolonging* moves as used by students was considered necessary and sub-categories of support, confront and other were added (see boxed categories in Figure 5.4).

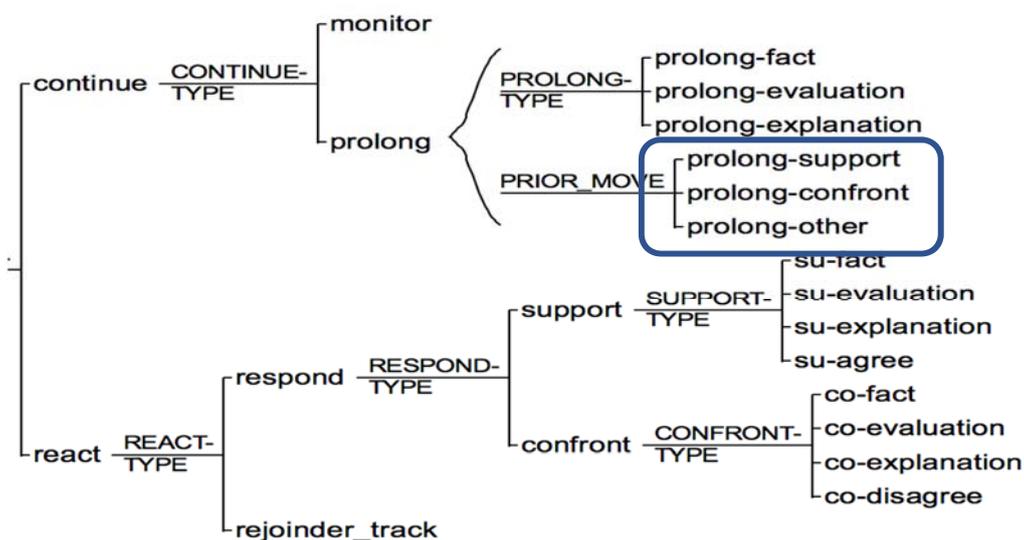


Figure 5.4: Detail of sustaining moves in the third level of delicacy as developed in the final model represented in Figure 5.6

This was due to the fact that a special focus of the study was to identify whether supporting and confronting moves were followed by reasons and opinions. This way the connection between, for example, *agree* and *disagree* and *reason* and *opinion*

could be easily established in relation to either a *support* or *confront* move. In extract 5.5 the two examples in bold are classified as *disagree-prolong reason- prolong confront* and *agree-prolong reason-prolong support*, respectively:

- 1 Saúl: **No, it's because, because... they, they... the leaves fall in autumn**
 2 Alicia: What?
 3 ((Saúl and Lara laugh))
 4 Lara: Coniferous is pine?
 5 Alicia: ((nodds))
 6 Saúl: Yes
 7 Lara: **Ah! Ok... Coniferous because they... in the winter... in the winter**

Extract 5.5: Clila3 in the group discussion activity.

The category of *prolong-other* move in Figure 5.4 above was added to cover two exceptions found in the data corpus when tagging prior moves. The first exception was when *prolong* was after the rejoinder-track move and the second case was when, instead of following *react* move, *prolong* was after *initiating* move by the same speaker.

In Eggins and Slade's (1997) classification of speech functions *append* is seen as the third type of continuing move (see Figure 5.2 above) where the speaker continues in a new turn. In the present study, for the sake of simplification, and due its scarce appearance, *append* was omitted and all changes of speakers were categorized under *react* (see Figure 5.3 above).

Under *reacting* moves (see figure 5.2 above), Eggins and Slade (1997) identify two types of responses: *responses* and *rejoinders*. As described in more detail in section 2.2.3.3, *responses* help moving the exchange towards completion and *rejoinders* are reactions which, in some way, prolong the exchange. The two types of *responses*, *support* and *confront*, were included and were considered particularly interesting for this study. As explained in chapter 2, *supporting* responses would be the

expected responses, whereas *confronting* responses would represent discretionary alternatives.

Within these two sub-categories, Eggins and Slade (1997) establish yet another level of delicacy which hasn't been used in the multi-layered analytical model developed for this study, except for two further categories within the category of *replying* moves: *agree* and *disagree*. In the original framework, *replying* moves are the *responding* moves that imply more negotiation. Hence, *support-reply-agree* (labelled in this model just as *agree* within *support*) is defined as the move performed to indicate support of information given whereas *confront-reply-disagree* (used here only as a disagreeing move within *confront*) is the move that provides a negative response to question. In the analytical model developed here, *support-reply-agree* is used here as an agreeing move within support (*support-agree*) and *confront-reply-disagree* is used here as a disagreeing move within *confront* (*confront-disagree*). Examples for these categories from the data corpus are shown below.

Support-agree:

- 1 *Laura: invertebrados*
- 2 *Gael: el pulpo*
- 3 *Saúl: anguila*
- 4 *Gael: estrella de mar*
- 5 Saúl: **estrella de mar, sí, venga**

Extract 5.6: L1a1 group in the group discussion activity.

In extract 5.6 Saúl shows agreement (line 5) by repeating what Gael has just said (line 4) and giving the affirmative answer “sí, venga”.

Confront-disagree:

- 1 *Juan: Jellyfish*
- 2 *Jimena: Jellyfish... no but... how do you say...?*
- 3 *Irene: The electric... electric tentacles*
- 4 *Jimena: **No is not that***

Extract 5.7: Clila2 group in the group discussion activity.

In extract 5.7 Jimena (line 4) transmits her disagreement opposing to the suggestion given by Irene (line 3).

In the adaptation made for this study, and to simplify the original model to better fit the stated objectives, within the reacting moves, *rejoinder* was omitted as a general category and only one type rejoinder at a further level of delicacy was used, namely *rejoinder-track* (see section 2.2.3.3 for all types of *rejoinder* moves developed by Eggins and Slade, 1997), which elicits repetition of a misheard element or move. This was justified by the constant use of clarification requests in the corpus that could be done by the same speaker (*monitoring moves*) or another speaker, in which case the analytical category of *rejoinder-track* was needed.

Rejoinder-track:

- 1 *Pedro: And the musg... and the musg because the mountains.. are very, are*
- 2 *very wet and they grow musg.. on the wetlands ((Covi writes)).. is this..*
- 3 *is this*
- 4 *Covi: **Because?... because?***
- 5 *Marta: **The middle? The middle?...** because...*

Extract 5.8: Clilb6 group in the group discussion activity.

In extract 5.8 Covi (line 4) and Marta (line 5) ask for clarifications because they haven't understood what Pedro has explained before.

See Figure 5.6 for the final adaptation of Eggins and Slade model made for this study. In the next section, we will focus on the next layer, the knowledge layer.

5.2.2 Layer 2: Knowledge use

This layer is based on two models: Dalton-Puffer's (2013) cognitive discourse functions and Christie's (2002) classroom registers.

A threefold model of CDFs

As stated in the previous section, the next level of delicacy, linked to knowledge, was based on a different model, namely the CDFs. Eggins and Slade's (1997) distinction of information as facts, opinions and reasons (see figure 5.2 above) was initially considered in earlier versions of the multi-layered model proposed in this study. However, in the final version, and inspired in the CDF model proposed by Dalton-

Puffer (2013), this level finally included three types of knowledge functions: facts, explanations and evaluations (see figure 5.6 below). Table 5.1. below shows the CDF model with each function type, it short label and its communicative intention glossed out.

<i>Function Type</i>	<i>Communicative Intention</i>	<i>Label</i>
<i>Type 1</i>	I tell you how we can cut up the world according to certain ideas	CLASSIFY
<i>Type 2</i>	I tell you about the extension of this object of specialist knowledge	DEFINE
<i>Type 3</i>	I tell you details of what can be seen (also metaphorically)	DESCRIBE
<i>Type 4</i>	I tell you what my position is vis a vis X	EVALUATE
<i>Type 5</i>	I give you reasons for and tell you cause/s of X	EXPLAIN
<i>Type 6</i>	I tell you something that is potential	EXPLORE
<i>Type 7</i>	I tell you about sth. external to our immediate context on which I have a legitimate knowledge claim	REPORT

Table 5.1: Cognitive discourse functions (Dalton-Puffer, 2013:19)

To simplify the CDF model for the present study, the seven types were grouped into three broader categories: explanations (type 5); facts (types 1, 2, 3 and 7) and evaluations (types 4 and 7). Report (type 7) could be seen as either fact or evaluation while explore (type 6) was not found in the data corpus. Figures 5.5 is an amplified section of the final version of the analytical model developed in this thesis for initiating moves.

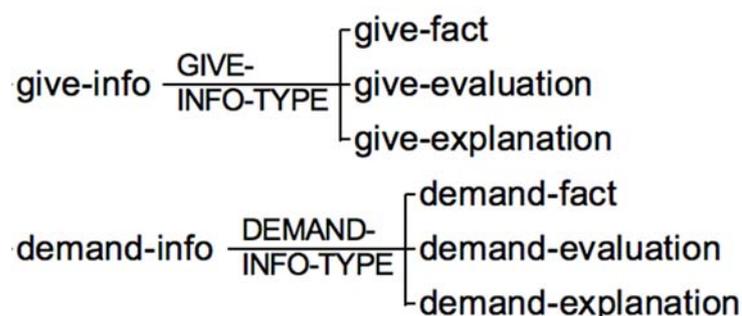


Figure 5.5: Detail of initiating moves in the third level of delicacy taken from the final version of the model as represented in Figure 5.6

In the following sections we will provide examples from the data corpus for each level of delicacy for categories *facts*, *explanations* and *evaluations* in their different discourse moves: *giving*, *demanding*, *prolonging*, *supporting* and *confronting*. We will start with *facts*.

5.2.2.1 Facts

As explained in the previous section, our definition of *facts* includes CDFs of types 1, 2, 3 and sometimes 7. The first three CDF categories are commonly used by grade 4 students, as classifying, defining and describing are expected in the classroom. This study, however, was not interested in the differences that each of these categories bring but only in the aspect that they represent factual information. Category 7, *report*, was also considered fact when what was accounted for was factual information. This explains why these four categories were included in a broader one: facts.

As initiating moves we have found *give-fact* (extract 5.9) and *demand-fact* (extract 5.10):

- 1 *María: Ya, por eso, mira, siguiente.. ((reading)) Qué tipo de planta podríamos*
 2 *encontrar en Alaska, por qué?*
 3 *Juan: En Alaska?*
 4 *María: **En Alaska... Una arbol muy fuerte que aguante..***
 5 *Diego: Pino*

Extract 5.9: L1a3 in the group discussion activit

- 1 *Roberto: Is <L1SP ciego SPL1> ((to Catalina)) coniferours plants and*
 2 *flowering plants.. **flowering plants are the plants who have flowers,***
 3 ***no?***
 4 *Catalina: well, flowering plants are the plants that*
 5 *Blanca: That they*
 6 *Catalina: is.. it is flowers that have <L1SP pétalos SPL1>.. and.. do polen*

Extract 5.10: Clila8 in the group discussion activity.

In extract 5.9, in line 4, María initiates the turn after reading the prompt question by giving a fact about the characteristics of a plant that one could find in Alaska should have. Meanwhile in extract 5.10 *Roberto* initiates the turn by asking the rest of his group to ratify a fact he is unsure of (lines 2 and 3).

In sustaining moves we could find *prolong-fact* (extract 5.11), *support-fact* (extracts 5.12 and 5.13) and *confront-fact* (extract 5.14). The first is an example of a *prolong-fact* move performed by Ben:

- 1 *Inés: esto se pone así ((pointing))*
- 2 *Ben: no porque cada uno esta en otro distinto... para ahí ((Inés turns the*
- 3 *page))... **esta es.. la cuatro***
- 4 *Lorenzo: La cinco*
- 5 *Ben: no... sí, sí*
- 6 *Inés: No, la cuatro*

Extract 5.11: L1b5 group in the problem-solving group activity.

Ben confronts the previous comment done by Inés (line 1) and then continues speaking by adding a fact through the use of a *prolong-fact* move (line 3).

The next two examples illustrate the use of the *support-fact* move; the first one is just giving a scientific account of a fact (extract 5.12) and the second one is reporting on a fact by relating it to the student's own experience (extract 5.13), which was the most common way of reporting found in the data.

- 1 *Catalina: ((reading the next question)) What type of animals live in a*
- 2 *water environment. Give three examples and explain what body parts*
- 3 *those animals have to help them live in that habitat... ((in a very low*
- 4 *tone))...*
- 5 *Blanca: Ehh...We can say a... a fish*
- 6 *Roberto: Yes, **a fish live in a water environmen***

Extract 5.12: Clila8 in the group discussion activity.

In initiating moves we have found *give-explanation* (extract 5.15) and *demand-explanation* (extract 5.16). See examples below:

- 1 *Clara: ((correcting him)) give reasons for your answers ((she reads again))*
 2 *why do you think you would find those.. those of animals and plants,*
 3 *give reasons for your answers.. maybe*
 4 *Antonio: **Because, eh, the.. the snakes.. because are very easy to.. to.. have***
 5 ***a hole in a mountain***

Extract 5.15: Clila5 in the group discussion activity.

In extract 5.15 Antonio initiates the turn by giving an explanation (lines 4-5) in this way following the instructions in the prompt question (line 1).

- 1 *Laura: ((reads a new question)) ¿Qué tipo de planta podríamos encontrar en*
 2 *la selva amazónica? ¿Por qué?*
 3 *Saúl: La carnívora*
 4 *Laura: **¿Por qué? ¿Por qué en la selva, a ver?***
 5 *Saúl: Porque necesita mucha agua... y en la esta.. en la selva amazónica, hay*
 6 *mucha agua..*

Extract 5.16: L1a1 in the group discussion activity.

In extract 5.16 Laura initiates a turn (line 4) by demanding an explanation to Saúl who has answered one of the prompt questions in the STA with a *fact* (line 3) but has not given a reason, which was also demanded in the question (line 2).

In sustaining moves we could find *prolong-explanation* (extract 5.17), *support-explanation* (extract 5.18) and *confront-explanation* (extract 5.19). Examples in the same order are given below.

- 1 *Lorenzo: Sí te interesa.. los pinos pelados son unos pinos, que no tienen hoja*
 2 ***porque ahí no pueden crecer porque siempre hay mucho, mucho***
 3 *Inés: Porque hay mucho viento*
 4 *Lorenzo: Hay mucho viento entonces por eso, por eso se les vuelan las hojas y*
 5 *no pueden crecer esas hojas ...*

Extract 5.17: L1b5 in the group discussion activity.

In extract 5.17, Lorenzo makes a prolonging move explaining his previous statement that was a fact about a certain type of pine-trees.

- 1 *Clara: ((also reads)) Which type of plant would sur.. survive better in the*
 2 *amazon forest... ((they think))..*
 3 *Antonio: The...*
 4 *Clara: I don't know how you say a.. a beach tree*
 5 *Antonio: No, PALM, PALM.. you agree that the palm tree?*
 6 *Daniel: Yes, I agree*
 7 *Clara: **Can survive.. in the amazon.. because, ehmm, it's adapted to a***
 8 ***beaches.. to a beach hot climate***
 9 *Antonio: Okay, hot and windy climate and that*

Extract 5.18: Clila5 in the group discussion activity.

In extract 5.18, in lines 7-8 Clara supports Antonio's suggestion and adds the explanation to justify that he has chosen a good answer.

Finally, in extract 5.19, Blanca confronts Roberto's suggestion by explaining why she thinks he has made a mistake.

- 1 *Roberto: One and two!... ((she makes a negative gesture)) Yesss! Is this!*
 2 *Blanca: No, no!*
 3 *Roberto: Blanca!*
 4 *Blanca: **No because look two here and two there and they make here***
 5 ***this.. You are saying this is here!***
 6 *Roberto: Yeah, yeah, okay, okay*

Extract 5.19: Clila8 in the problem solving group activity.

5.2.2.3 Evaluations

Evaluation is defined by Dalton-Puffer (2013) as a way of communicating one's position in relation to a certain topic. Most of the times in the data it was used as a

way of stating an opinion, making a self-judgement or judgment of others (Llinares and Dalton-Puffer, 2014; Martin and White, 2005; Morton and Llinares, 2016) or appreciating things.

Examples of initiating moves expressing *demand-evaluation* (extract 5.20) and *give-evaluation* (extract 5.21) appear below:

- 1 Pablo: *La uno, la uno*
 2 Gustavo: *¿Cuál?*
 3 María: *((pointing at it)) ¿Estás de acuerdo tú con que sea la uno? ((to*
 4 *Gustavo))*
 5 Gustavo: *((he shruggs his shoulders)) no sé*
 6 Pablo: *Aquí no hay nada, en la %x% está este y aquí lo mismo ...*
 7 Gustavo: *Es la uno... la uno*

Extract 5.20: L1a5 in the problem solving group activity.

- 1 Pedro: *((Ana turns the page))El ultimo será difícil ((to himself))*
 2 Sonia. *Ostras*
 3 Pedro: ***Ah, este es muy fácil... es este***
 4 Ana: *Es este ((pointing))... es este, sí, es el cinco.. mra, no ves que cae como*
 5 *cosas negras*

Extract 5.21: L1a4 in the problem-solving group activity.

In extract 5.20 the use of evaluation is linked to agreement since María is seeking support from the rest of the group members (line 3). In turn, in extract 5.21, the evaluation done by Pedro (line 3) is related to judging the difficulty of the problem they are dealing with.

The types of sustaining moves identified are *prolong-evaluation* (extract 5.22), *support-evaluation* (extract 5.23) and *confront-evaluation* (extract 5.24). See examples below:

- 1 Dani: *Where you find the cross here...*
 2 Guille: *in here, because %X%*
 3 Dani: *Is not one, okay... Shhhhh!!! ((since Guille keeps wanting to explain))... **I***
 4 ***think is four, is four, four is the best***

Extract 5.22: Clilb3 in the problem-solving group activity.

- 1 *Laura: ((starts to read)) que diferencia hay entre un árbol de hoja perenne y*
 2 *uno de hoja caduca? Discute y escribe tres diferencias.. La perenne y la*
 3 *caduca, la caduca que se caen las hojas y la perenne no... los escribimos, vale?*
 4 *Saúl: **Pues muy bien***

Extract 5.23: L1a3 in the group discussion activity.

- 1 *Juan: Look... this?... .. I know! Is this, this!*
 2 *Irene: **This I don't understand**, this is the %X% or is this one*
 3 *Juan: No but it is separate and then, in this*

Extract 5.24: Clila2 in the problem-solving group activity.

In extract 5.22 we have an example of the *prolong-evaluation* in which Dani expresses his position or opinion about possible answers and evaluates his option by saying it is *the best* (lines 3-4). This example illustrates one of the most common uses of evaluation in the data corpus, the use of *I think* to express opinions. In extract 5.23 Saúl is evaluating the response offered by Laura and supports it by giving it a positive evaluation. In extract 5.24 Irene makes a personal judgement about her lack of capability to understand the task (line 2). This judgement entails a confronting move as it doesn't support the answer offered by Juan in line 1.

Classroom registers and social talk

Within the knowledge layer, the notion of classroom registers developed by Christie (2002) was also taken into account (see the final version of the developed model, Figure 5.6). Christie (2002) defines classroom activity as composed by curriculum genres and macrogenres. In addition, she argues that this type of discourse has to be analysed and understood in terms of the operation of two registers (2002:3):

... a first order or regulative register, to do with the overall goals, directions, pacing and sequencing of classroom activity and a second register, to do with the particular *content* to be taught and learnt.

Extracts 5.25 and 5.26 below show examples of the *regulative* register.

- 1 *Eva: You take this... ((hands her paper and pen))*
 2 *Ana: Nooo!... I don't like to write ((Eva and Nono keep hitting each other;*
 3 *Eva stands up)) .. How much of information we are going to %X%.. but*
 4 *why are you here?*
 5 *Eva: %X%*
 6 *Ana: Ahhhh ((looking at Eva's chair))*
 7 *Eva: Okay*
 8 *Nono: <L1SP jolín Ana! SPL1>*
 9 *Ana. Is her turn*
 10 *Nono: Is your turn?*

Extract 5.25: Clilb1 group in the problem-solving group activity.

In extract 5.25, most of the talk (except for line 8 by Nono in Spanish) was classified as *regulative*. The three students are organising the activity and negotiating roles or tasks but no talk about the topic has been produced.

In extract 5.26 the use of the *regulative* register is inserted in the instructional register.

- 1 *Gerardo: Si es que, si, la uno ((She writes and he turns the page))*
 2 *Elena: **Dentro de..tres pasamos a la E,no faltan muchas***
 3 *Gerardo: Eh. la del cuadrado, no? %X%*
 4 *Elena: Yo creo que es esta, la dos*

Extract 5.26: L1a4 group in the group discussion activity.

As stated in chapter 2, section 2.2.3.2, the *instructional* register was the only one further analysed at the discourse and knowledge layer. Therefore, we have seen (in the discourse layer) and will further see (further in the knowledge layer) numerous examples of this register when presenting examples of the categories present in those layers. Another type of talk that can neither be classified as *regulative* or *instructional* and that is not directly associated with the academic classroom activity

is *social talk*. This category was added to Christie's (2002) registers in order to account for the presence of this type of talk in the data corpus (see the final version of the developed model, Figure 5.6). This talk is often used by students when they are "off-task" and talk about more personal topics. Below are two examples from the CLIL and L1 classes:

- 1 *Dani: Yes, yes... one, one, one, one,one... ((Endless times; then he turns to write*
 2 *the answer))*
 3 *Lara: No... Because the transformers have this not this*
 4 *Dani: And then... **we see the film of transformers...** ((Lara laughs))*
 5 *Guille: Seven*

Extract 5.27: Clilb3 group in the problem-solving group activity.

- 1 *Laura: **Toma, no sabes lo que son las enredaderas?***
 2 *Saúl: **Tu vives en un chalet***
 3 *Laura: **Y qué?.. y qué?***
 4 *Saúl: **...Que es muy grande***
 5 *Gael: **Tú vives en un chalet con tu familia?***

Extract 5.28: L1a1 group in the group discussion activity.

In extract 5.27 the first time the students mention *transformers* it is connected to the content of the PSA because the student is drawing up a comparison between the *transformers* and the problem-solving figures on the problem worksheet in front of him (line 3). However, the second time the word is used (line 4) it is within social talk as the students refer to a film that has no connection with the content being discussed. In the data's corpus, *social talk* sometimes emerges when students relate their personal experience with something from the topic.

In extract 5.28 the type of plant *enredaderas* comes out (line 1) and Saúl makes a connection with this plant being frequently grown in detached houses (*chalet*, line 2) and that drives them to start talking about the size of Laura's house (line 4), which is completely unrelated to the topic at hand.

The introduction of the concepts of *regulative* and *instructional* registers (Christie, 2002) and *social talk* was motivated by the need to distinguish between talk about

the content at hand and talk related to organizational purposes and unrelated off-task issues. In the present study, only the *instructional* register (related to the content to be taught and learnt) was analysed at the discourse and knowledge layers.

To sum up, in this section on knowledge layer, we have described the CDFs as well as two classroom registers and social talk used in the developed multi-layered model and linked to knowledge. We have also given examples of the different categories in the model and it has been shown that both the discourse and the knowledge layer are highly intertwined and integrated within the scheme of the model as it can be seen in Figure 5.6 which shows discourse and knowledge layers in the final version of the multi-layered analytical model.

The next section focuses on the third and last layer of this multi-layered model: the interactional layer.

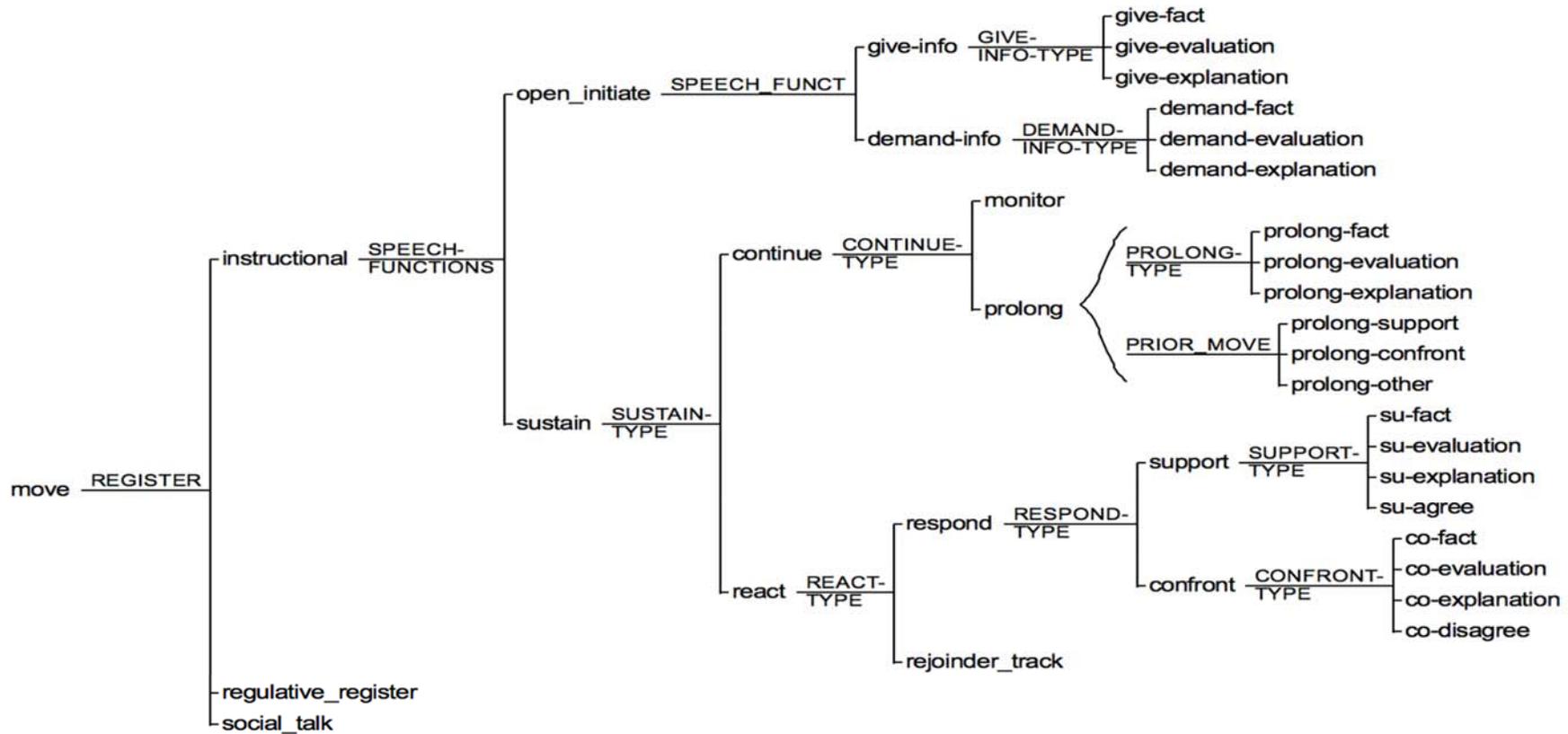


Figure 5.6: Discourse and knowledge layers in the final version of the multi-layered analytical model

5.2.3 Layer 3: Interactional patterns

The third layer of the multi-layered model used in the present study is closely connected to the group interaction. As already discussed in chapter 3 (section 3.4), this level of analysis is based on four distinct patterns of interactions: collaborative pattern, expert/novice (or peer tutoring in Damon and Phelps, 1989), dominant/passive and dominant/dominant (see figure 5.7). These four patterns are based on two descriptive indexes proposed by: equality and mutuality. Equality is the type of interaction which describes more than merely an equal distribution of turns or equal contributions but an equal degree of control over the direction of the task at hand, meanwhile, mutuality is the learners' level of engagement with their partners' contributions (Van Lier, 1996).

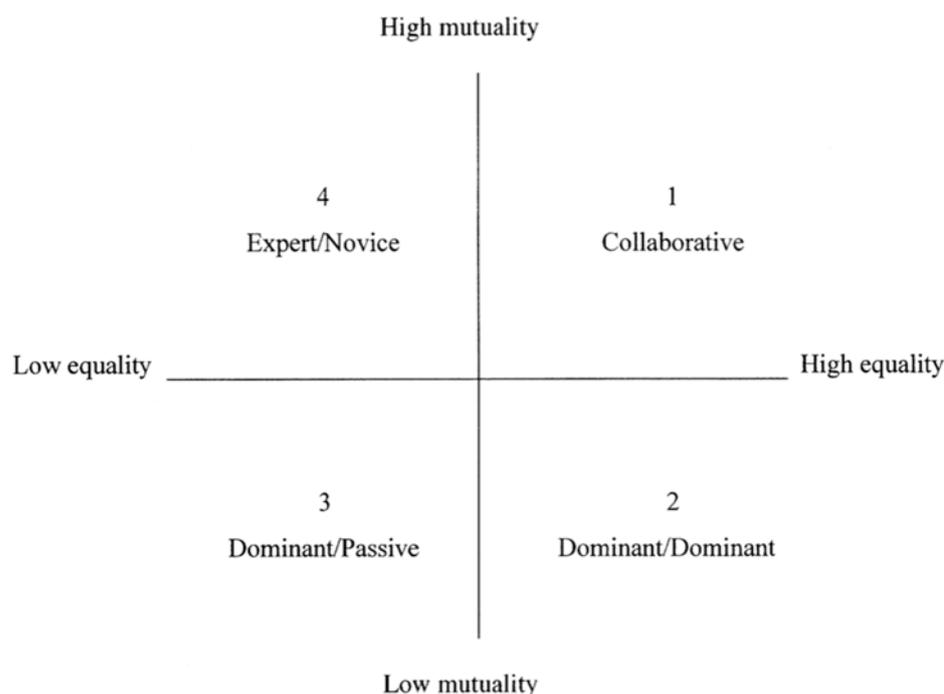


Figure 5.7: Storch's (2002) model of dyadic interaction

In the model developed in this study, these two indexes and patterns of interactions were used to analyse the data corpus. As already mentioned in section 4.X, the analytical tool used in this study was the UAM Corpus Tool. Using this program, a mixed methods approach was adopted for the analysis of the data corpus. Thus,

equality was measured quantitatively whereas mutuality was examined qualitatively. A separate layer for equality was created within the interactional layer in order to retrieve equality elements of the interaction and the data corpus was analysed quantitatively. In this way, the degree of equality in the group was measured in terms of the following two aspects: (i) the distribution of turns among group members and (ii) the distribution of *regulative* register as a way of measuring the control over the task exercised by each student.

Using the UAM Corpus Tool, the distribution of turns was measured in two steps: First, the whole corpus was divided into valid student turns (see section 5.4 for further details) and each turn was assigned to a particular student. Second, the total amount of turns was retrieved, although only in English for the two CLIL classes, the total number of words per each student was obtained and an average number of words per turn was calculated. This gave a first picture of equality aspects in each group. The groups with a more or less equal distribution of turns were separated from the rest. The distribution of regulative register as an indicator of students' control of the task was measured by calculating the total number of turns coded as regulative register per each group member.

Once the results on equality were obtained, groups with a high level of equality were analysed qualitatively in search for mutuality. To do so, aspects indicating learners' high engagement with their partners' contributions, such as the presence of evaluation tokens, responding to contributions of other group members or invitations to participate, were sought for qualitatively. However, the size of the data corpus and the amount of the recorded groups (N=31) made it impossible to carry out a detailed qualitative examination of every group in terms of mutuality, so to make the analysis manageable, the decision was taken to only examine those groups that resulted to be fairly equal in distributions of turns and control of the task as shown by the quantitative analysis of equality aspects. Figure 5.8 shows the interactional layer of the analytical model developed for this study:

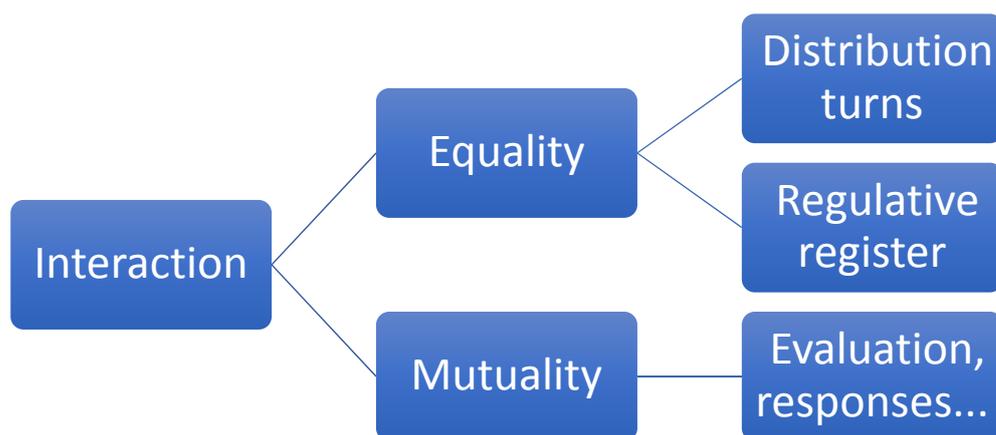


Figure 5.8: Interactional layer: Analytical Framework.

This layer of analysis was then added to the discourse and the knowledge layer of the analytical model. The combination of the three layers had the purpose of providing a detailed picture of the interplay between language, content, cognition and participation in group interaction in the CLIL and L1 classrooms under study.

5.3 Analytical considerations in the application of the model

In this section, first, general considerations, problems and solutions regarding the coding process while analysing the data will be pointed out. Second, the considerations that acquired relevance after the data were coded by different researchers to establish a reliability criteria of the model.

5.3.1 General considerations

Although the whole corpus was transcribed, certain parts were not analysed, since they were considered irrelevant for the purpose of this study. Thus, teachers' interventions, students' reading aloud the prompt questions or instructions, dictating to others or dictating to themselves while writing down the answers, talking to the teacher or segments produced in L1 Spanish in the CLIL classes were disregarded for the analysis.

The following examples are given to illustrate some of these considerations. Thus, in extract 5.29 students are speaking with the teacher:

- 1 Gael: *¿La pasamos?*
- 2 Laura: *No... ((to the teacher)) ¿Qué plantas hay en Alaska?*
- 3 Saúl: *Cuáles hay? ((to the teacher))*
- 4 Teacher: *No habeis dado los ecosistemas?*
- 5 Laura: *No*
- 6 Teacher: *¿No?*
- 7 Gael: *¿Qué es eso?*
- 8 Laura: *Lo único que hace mucho frío...*
- 9 Saúl: *Hace mucho frío*
- 10 Laura: *Pues ninguna porque hace mucho frío*
- 11 Teacher: *¿A ver... qué hay dónde hay mucho frío?*
- 12 Laura: *Ehhh...*
- 13 Teacher: *¿De plantas.. habeis visto la peli de colmillo blanco?*
- 14 Saúl: *No ((Laura and Gael also make a negative gesture))*
- 15 Teacher: *¿No la habeis visto?...No?...*
- 16 Student 1: *Vosotros vais por la misma que nosotros... ((Laura nods)) como*
- 17 *nosotros*
- 18 Student 2: *Nosotros ya la hemos terminado*
- 19 Teacher: *¿En serio no habeis visto la peli del husky?*
- 20 Saúl: *[Ah, siiii!! ya me acuerdo]*
- 21 Gael: *[La de Alaska??]*

Extract 5.29: L1a1 in group discussion activity.

This extract illustrates discourse moves which were not considered for the analysis. All the parts ignored are underlined. These include turns where the teacher was speaking (lines 4, 6, 11, 13, 15 and 19), turns where students were speaking to the teacher (lines 2, 3, 5, 7, 8, 12, 14, 20 and 21) and turns where members from other groups were speaking (lines 16-18).

However, some occurrences of L1 talk in the CLIL data corpus were considered for the analysis. These were the cases when a student answered a question asked by another student which implicitly could be answered in L1 Spanish, e.g when asking about the meaning of some word or term.

- 1 Lara: ((asking the teacher)) how do you say <L2SP caparazón L2SP>?
 2 Teacher: Shell, shell...
 3 Saúl: Ah... <L2SP es verdad SPL2>((he writes)) what more? # you like it..X,
 4 X,X, put it
 5 Lara: Shells
 6 Saúl: And what is shells?
 7 Lara: ((whispering)) <L2SP **caparazón** SPL2>
 8 Saúl: What is that?
 9 Lara: ((Lara laughs and then whispers to him)) <L2SP **cisne** L2SP>
 10 Saúl: Eh?
 11 Lara: <L2SP **cisne?** L2SP>

Extract 5.30: Clila3 in group discussion activity.

In extract 5.30 the parts underlined were not analysed. In line 1, Lara is speaking to the teacher; in line 2, it is the teacher speaking; and in line 3, another student, Saúl, is using Spanish. Yet, lines 7 and 9 in bold were analysed as they represent instances of a student providing the meaning in Spanish in response to a question asked by another student.

Often, turns were difficult to categorize because they were incomplete. In such situations it was decided to categorize these moves according to the intention they were thought to be transmitting. The intentions were analysed by examining the speakers' previous interventions and gestures and other non-linguistic clues in the video recordings, if considered necessary. Extract 5.31 below shows an incomplete move (in bold) classified as *prolong-reason-confront*.

- 1 *Lara: Coniferous because?*
- 2 *Alicia: because... because they survive of the.. of the winter*
- 3 *Saúl: But that is not the coniferous question... that is because if not because*
- 4 *it # the tree*
- 5 *Lara: No, it's okay*
- 6 *Saúl: What?*
- 7 *Lara: It's #*
- 8 *Saúl: **Yes but no... because... You have.. you have #***
- 9 *Alicia: Can I see? ((takes the sheet of paper from her and starts to read)) They*
- 10 *show you a several photographs of an animal but they don't know whether is*
- 11 *a carnivore or a herbivore, what parts of the body might you look at to know*
- 12 *this? Give reasons for your answers... The teeth, because they are... ((making*
- 13 *pointy gestures with her fingers))*
- 14 *Lara: Yes i know! I too know this #*

Extract 5.31: Clila3 in group discussion activity.

In this example the use of *but* and *because* by Saúl (line 8) was the clue to tag this function as *prolong-explanation-prior-move-confront*. However, in cases of major doubt the turns were only partially categorized. For example, a move could be classified just as a *response supporting* move as regards line 7 by Lara but the fact of it being *fact*, *explanation* or *evaluation* would be then omitted.

In cases when a student started speaking but abruptly stopped, making an incomplete move, and then completed it in the second turn, then only the complete one was analysed. Below (extract 5.32) is an example of such situation.

- 1 *Blanca: No, the wolf is not in the water environment*
- 2 *Catalina: Ahhh.. the.. the <L2SP medusa SPL2>..*
- 3 *Blanca: The...*
- 4 *Catalina: Yellow.*
- 5 *Blanca: **jellyfish...***
- 6 *Catalina: I think it has the... the ten*
- 7 *Blanca: The tentacles... to protect them.. of the sharks and all canibals*
- 8 *Catalina: How do you say <L2SP tentaculosSPL2> ?*
- 9 *Blanca: Tentacles but I don't # but you #*

10 *Catalina: ((she turns around to look for a teacher)) And now we have #*

Extract 5.32: Clila8 in group discussion activity

In extract 5.32 the two moves by Blanca (line 3) and Catalina (line 4) were not analysed (underlined). The first move analysed was the one in line 5 (in bold) done by Blanca who completes her utterance with *Jellyfish* as *response-support-fact*.

5.3.2 Modifications after pilot co-coding

As described in the previous chapter, two researchers were asked to code a representative selection of the data and this coding was compared with the researcher's coding in order to establish an inter-rater reliability of the developed analytical model. In the cases where major differences arose, these were discussed and a decision was made to drive future coding. This section presents the decisions taken after this process.

- 1) When there were doubts in classifying certain responses, the prompt question which initiated the analysed segment of the group's talk was tracked in order to classify the response move accordingly. If, for example, there was an incomplete prolonging move where some words had not been transcribed due to low quality of the audio because of the surrounding noise, the original prompt question which triggered the turn was tracked. If, for example, this question was a "why question" the prolonging move was categorized as *prolong-explanation*.
- 2) Every move that was considered related to task management (e.g., setting up and evaluating the task) was categorized as regulative register; every move that was off-task was considered social talk and every move related to the academic content was considered instructional register.
- 3) All confronting and supporting moves were coded using the immediate previous turn as reference. For example, in extract 5.33 below, in line 2 Saúl's intervention is confronting that of Alicia in line 1, and Lara's in line 3 is confronting Saúl's.

1 *Alicia: because.. because they survive of the.. of the winter*

2 *Saúl: But that is not the coniferous question.. that is because if not because it #*

3 *the tree*

4 *Lara: No, it's okay*

Extract 5.33: Clila3 in the group discussion activity.

In this case Lara supports Alicia and confronts Saúl. However, since Alicia's turn was not the immediately prior turn before Lara's but with Saúl's intervention in between, Lara's turn is classified as confront (as it was confronting Saúl's while supporting Alicia's).

This criteria was used frequently when discussions with several *agreeing* and *disagreeing* moves appeared. In these cases also, the confronting or supporting moves were assigned according to what they did in relation to the previous move and not according to the beginning of the discussion, as in extract 5.34:

- 1 *Gustavo: Un guepardo*
 2 *Pedro: No, arañas y margaritas*
 3 *Gustavo: No, un guepardo*
 4 *María: No, dos*

Extract 5.34: L1a5 in the group discussion activity

In extract 5.34, Pedro's is a confronting move (line 2) towards Gustavo and Gustavo adds another confronting move (line 3) towards Pedro while María finally adds another one (line 4) towards Gustavo. Here, all moves are confronting since they all confront the move performed by the previous speaker.

- 4) During the reliability test many mismatches were found when students contradicted themselves in the same turn: opposing at first to the previous comment and then agreeing with it or questioning their own answer a few seconds later:

- 1 *Lara:.. plants... flower*
 2 *Saúl: No, no, no, no, no.. flower ((nodding))*

Extract 5.35: Clila3 in the group discussion activity.

In extract 5.35, Saúl seems to confront Lara by saying multiple "no" (line 2) which could be categorized as disagreeing but then he supports Lara by repeating her suggested answer. The first part of Saúl's turn should be considered *confront-disagree* but the second should be *support-fact*. The reference for the final decision

was taken from contextual aspects, taking into account the rest of the interaction and the video recordings. In this case, the observation of non-verbal aspects in the video recording revealed Saúl's mocking gestures that he had used to tease Lara while producing the multiple *no*, so the move was finally classified as a *supporting* move.

- 5) Unless interrupted by questions or other matters such as the use of the regulative register (e.g. to organise for example who was going to write or whose turn it was), generally, initiation moves were the first or second move after the reading aloud of the prompt question in the STA or the appearance of a new item in the PSA.
- 6) In the STA, when one student made a statement with a fact, the next turn that repeated the same fact was considered an *agreeing* move and not a new *fact*. In extract 5.36 below we see an example of this (underlined).

- 1 Roberto: *oh! wolf.. ((he writes))*
- 2 Blanca: *Yes, okay... ehmm*
- 3 Roberto: <L2SP pájaros SPL2>
- 4 Blanca: **Birds!!!**
- 5 Roberto: **Birds** ((he writes again))
- 6 Blanca: *Now two plants... I think flowers and moun..*
- 7 Catalina: *and trees... .*
- 8 Blanca: **and trees because you have to write two** ((looks at what Roberto is doing)) **NOO!!**
- 9
- 10 Roberto: <L2SP que??L2SP>
- 11 Beatriz: ((takes his pen)) *you have to go wolf, birds, flowers and trees... ((showing him how))*
- 12
- 13 Roberto: *Ahhhh*
- 14 Blanca: *You have to put flowers... now here birds ((Roberto takes the pen and writes))... and... and trees... okay like that*
- 15

Extract 5.36: Clila8 in the group discussion activity

In extract 5.36, in line 7 Catalina expresses her opinion and in line 8 Blanca repeats it and adds an explanation. While the intervention made by Blanca could be categorized as *respond-fact* and later *prolong-explanation* if seen isolated, within its

discourse context and because it was a repetition of what Catalina had said, it is understood as an *agreeing* move (the same as saying “yes, I agree, because...”). Another example of this are lines 4 and 5, in line 4 Blanca makes a proposal in form of *fact* and in the next line 5, Roberto shows agreement by repeating what Blanca has said.

- 7) When within the same turn, the first move was regulative and the second was instructional, the second move was considered either a *responding* move, and not a *prolonging* one, or, when this second move started a new turn after the regulative intervention, an *initiating* move and not a *responding* one. This was because the regulative register was not included within the instructional part. The extract 5.37 illustrates this issue:

- 1 *Diego:* %X%
- 2 *Juan:* *No sé, puedes encontrar cualquier animal*
- 3 *Diego:* *Y luego pon.. **arbil, arbol**..*
- 4 *Juan:* *hombre! Arbol y...*
- 5 *Diego:* *Un pino, pino.. pon pino en arbol*
- 6 *Juan:* *Arbol y... arbol y seta*
- 7 *María:* *Un pino y?*
- 8 *Diego:* *Espera.. pero ahí no, es aquí ((ponting))*

Extract 5.37: L1a3 in the group discussion activity.

In extract 5.37, Diego (line 3) starts organizing the task by giving an order to María who is writing down the agreed answers, which was coded as regulative register and hence was not further analysed. However, the second part of Diego’s turn (*arbil, arbol*; line 3) were categorized as an *initiate-give-information-fact*.

- 8) It was observed that most of the questions were *initiating* turns except when asking for a repetition of something that had been previously said. In these cases, the *continuing* turn was evident and it was tagged as a *rejoinder-track* move (see line 4 in extract 5.38). Questions could also be found within the same turn when the speaker wanted to check on others by making a *continuing* move in their turn; these were considered the examples of *monitoring* moves (see line 3, extract 5.38).

- 1 *María: Un pino y?*
 2 *Diego: Espera.. pero ahí no, es aqui ((pointing))*
 3 *María: No, es aqui, van juntos... **pino.. y?** ((she writes))*
 4 *Diego: **Pino y?***
 5 *Juan: Seta*
 6 *Diego: Seta... ((she writes)) bueno, ya*
 7 *María: Otros dos animales..*
 8 *Diego: Joeeerrr*
 9 *María: si quieres vaya*
 10 *Diego: Bueno vale*

Extract 5.38: L1a3 in the group discussion activity

Some exceptions to questions being mostly initiations were also found. On certain occasions, although not very frequently, questions were used as *confronting* moves (see extract 5.39 below).

- 1 *Diego: No*
 2 *María: y %X%.. y Margarita también!*
 3 *Diego: No, ehhh .. manzano!! y manzano! y manzano!... no, no, y manzano*
 4 *Juan: %X%*
 5 *Diego: Tío, y como crees que te vas a encontrar un %X% en el campo?*
 6 *Juan: ((he makes an affirmative gesture)) No, mejor en un agujero*
 7 *Diego: Bueno, pero no en la montaña*
 8 *Juan: En el campo perfectamente...*
 9 *Diego: ((pointing at the next question)) cerezo...*
 10 *Juan: cerezo y peral, no?*
 11 *Diego: Cerezo y peral, ponlo... muy bien*
 12 *Juan: ((laughing)) mira alli pone peral..*

Extract 5.39: L1a3 in the group discussion activity.

In these cases, as in extract 5.39, although Diego's comment in line 5 is a *demand*, it was seen as a *confronting* move because it could be restated without the question mark and it would still maintain its original function, as, for example, Diego could

have said “There couldn’t be an %X% in the countryside” (“No se podría encontrar un %X% en el campo”).

- 9) Another frequently encountered coding difficulty in the PSA was that referred to the discussion of the possible options for the missing element in the pattern. As already explained in more detail in section 4.X, in every question the students had between 6 and 8 different possible answers. Therefore, when saying different options while thinking aloud and discussing about which was the correct one, students were not seen as confronting one another until there was a clear rejection to accept the other member’s proposals. Until then the options were coded as *support-facts*.

- 1 *Catalina: maybe this one ((pointing and thinking))... well.. C6... 2 ((to Dani who writes*
 2 *the answer in the answer sheet))...*
 3 *Catalina and Dani: ((they pass the page and Dani gives the answer sheet to*
 4 *Catalina))... how much time we have?*
 5 *Antonio: %X%.. This.*
 6 *Dani: I think this*
 7 *Catalina:((she takes a close look)) this one*
 8 *Dani: Look the, the.. five*
 9 *Catalina: Number five.. ((she starts counting in a low tone)) one two three...*
 10 *Antonio: **No, no, no, no** don't %X% the three %X%*
 11 *Catalina: This one... this one ((pointing to another))*
 12 *Antonio: One two three four ... one two three four five..*
 13 *Catalina: Diego, do you think is this one?.. this one...((pointing))*
 14 *Dani: Yes*
 15 *Catalina: six four.. five, seven.. four, five, six.. nine ahhh! yes.. ((she writes in the answer*
 16 *sheet and Dani turns the page... Suddenly Catalina looks at the camera and they all*
 17 *wave at it))*
 18 *Teacher: %X%*
 19 *Catalina: Now is your turn. Dan*

Extract 5.40: Clila5 in the group discussion activity.

In extract 5.40, there is no confront among the students until Antonio's direct *No, no, no* in line 10. The turn starts when the students turn the page (line 3). They look at the next item and give their first opinion (Antonio, line 5). Then every member of the group starts giving their opinion by suggesting the correct option, lines 6 to 9). All of these moves were seen as *supporting* moves. They are a way of thinking aloud, even though the students were giving different possible answers, until there is the first confronting move in line 10 with a direct *no*.

- 10) When the marker *no* or similar negative polarity markers (Halliday, 1994) were present, that helped take the decision of coding it as a *confronting* move. However, other examples were found where words such as *no* or *because* were not present and coding the move as *confronting* or *explanatory* was more subtle. Moreover, the fact that students could realize certain functions in different ways was always taken into account. This is the case of *explanations*, which, especially in the PSA, could be expressed without any discourse markers but rather by pointing at a distinctive part of a certain item in the problem the group was working on in the PSA booklet as a reason to explain why that option had been taken. Explanations can also be expressed through "because" or simply by juxtaposition. See lines 3, 14 and 15 in extract 5.41 below:

- 1 *Blanca: Yes, is six*
 2 *Roberto:.. B... six! ((he writes and then Catalina turns the page))*
 3 *Catalina: **This one because look... ((pointing))***
 4 *Blanca: No?*
 5 *Roberto: Yes*
 6 *Blanca: Ah, yes!*
 7 *Catalina: No, no, no, no, no! is this*
 8 *Roberto: Is this*
 9 *Catalina: Look*
 10 *Blanca: No, because is come.*
 11 *Ramiro: <L1SP mira SPL1>*
 12 *Blanca: In English*
 13 *Ramiro: **Look!***

- 14 *Blanca: **Yes and this one, it comes two and two, two and two***
- 15 *Roberto: One and two!... ((she makes a negative gesture)) Yesss! Is this!*
- 16 *Blanca: No, no!*

Extract 5.41: Clila8 in the group discussion activity

In relation to turn coding, there were no changes made in the interactional layer used with the UAM Corpus Tool. The coding followed the procedures described above in section 5.3.3 on interactional patterns. It should be pointed out, however, that, although in general the coded data corpus was the same as the one described for the other two layers (discourse and knowledge), there were two exceptions. First, for the interactional layer, in the CLIL groups the regulative register and the words in the L1 Spanish were taken into account. As explained before, the regulative register was used as a way of measuring the control the different members of the groups exercised in the task. Therefore, the turns in Spanish were also counted when measuring the total number of interventions each student made in the group. However, in order to measure the average words per turn these turns or L1 words were not counted.

5.4 Chapter summary

The purpose of this chapter was to describe the multi-layered framework designed for the data analysis in this study. The chapter started by presenting the reasons that lead to the development of this model and then the three layers constituting the model were described in detail. Each layer was presented separately, starting with the discourse layer following with the knowledge layer to end up with the interactional layer. In each layer, its constituting elements were described, explaining adaptations made to the original models and providing examples of each category used in the final version of the multi-layered model. In the final section, the methodological decisions taken when applying the model to the data sample and the modifications made after the co-coding by other two researchers were put forward. In the next two chapters (chapters 6 and 7) we will present the results obtained in this study.

Results

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Chapter 6: Co-construction of knowledge in group-work activities

Introduction

Results on the discourse layer

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Comparison across groups: CLIL versus L1

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Results on the knowledge layer

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CLIL group

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Summary of descriptive results

Part 2: Comparative results

Comparison across groups: CLIL versus L1

Comparison across activities: STA versus PSA

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Summary of results on the interactional layer

Chapter summary and brief discussion of results

6.1 Introduction

This chapter 6 and the chapter 7 present the results of the study. This chapter shows the results obtained in Part 1 of the study (RQ1, RQ2 and RQ3) and addresses the descriptive part of the research, while the results of the TT intervention programme,

i.e. the experimental Part 2 of the study, will be presented in chapter 7. The research questions addressed in this chapter are the following:

PART 1

RQ1. How is knowledge co-constructed in CLIL and L1 group-work activities?

RQ1.1 What type of speech functions do CLIL and L1 students produce?

RQ1.2 What type of knowledge is displayed in CLIL and L1 students' use of registers and cognitive discourse functions?

RQ1.3 What type of interaction takes place in CLIL and L1 group-work in terms of equality and mutuality fostered in the groups?

RQ2. Are there differences in the three layers (discourse, 1.1; knowledge, 1.2, and interaction, 1.3) above between CLIL and L1 groups working on the same activities? If so, which are they?

RQ3. Are there differences in the three layers (discourse, 1.1; knowledge, 1.2, and interaction, 1.3) above when students in CLIL and L1 groups participate in a science topic discussion and a problem solving discussion activities? If so, which are they?

In order to answer these research questions, first the results obtained in the science topic discussion and problem solving activities in the CLIL classes will be presented. Second, the results obtained in the L1 classes will be shown. As explained in chapter 4, the STA consisted in a group discussion activity about a science topic explained in class guided by a prompt with questions. The PSA was administered to the same groups and consisted in the RTPM with 60 logical-perceptual problems and a discussion while solving these problems. This chapter includes both quantitative and qualitative findings that will be presented consecutively, following the abovementioned research questions and the three layers of analysis carried out in this study.

In this way, first, findings obtained in the discourse layer will be shown (section 6.2), then those in the knowledge layer (section 6.3) and, finally, those in the interactional layer (section 6.4). For all three layers of analysis, the results are presented in two parts: first, the results of the descriptive analysis and, second, the results of the comparative results (e.g., in the discourse layer: sections 6.2.1 and 6.2.2, respectively). In the first, descriptive part, the general statistical results obtained in each analytical layer on CLIL classes and L1 classes will be put forward (e.g., in the discourse layer: sections 6.2.1.1 and 6.2.1.2, respectively). Drawing on these general quantitative results, a series of relevant features have been obtained, which will be further illustrated with examples. In the second, comparative part, comparisons between the two groups, CLIL and L1, and between the two discussion activities, STA and PSA, will be made (e.g., in the discourse layer: sections 6.2.2.1 and 6.2.2.2, respectively). Examples will also be provided to illustrate the findings. The first, descriptive, part aims to answer RQ1 and the second, comparative, part addresses RQ2 and RQ3.

6.2 Results in the discourse layer

In this section, the results concerning the discourse layer will be shown. As already presented in Chapters 2 (section 2.2.3) and 5 (section 5.2.1), for this purpose, Eggins and Slade's (1997) model of speech functions in casual conversation was adapted to the purposes and the research context of this study and applied to the collected data corpus. In Figure 6.1, which shows the whole multi-layered analytical model developed for the present thesis, the discourse layer is framed.

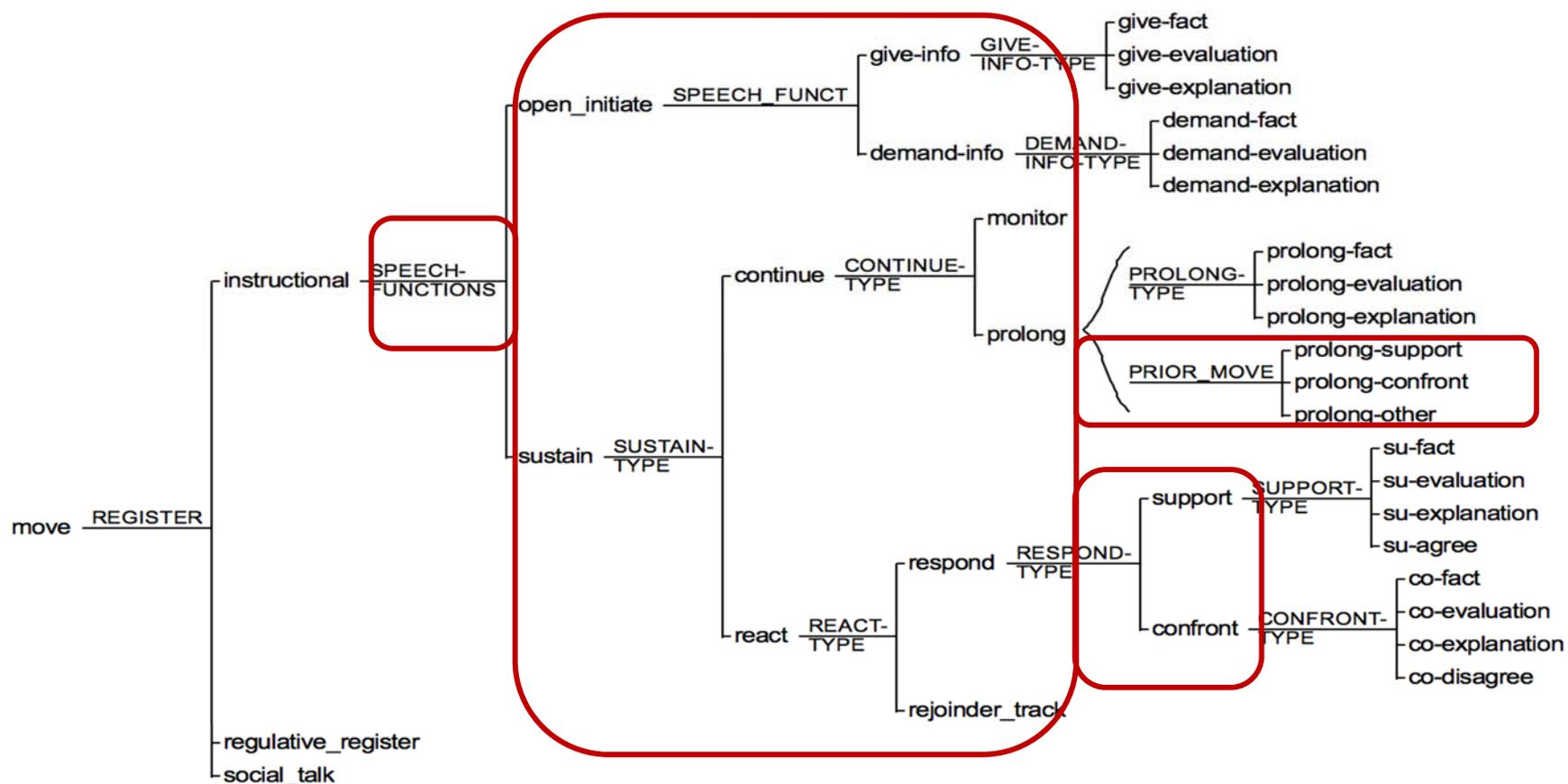


Figure 6.1: Discourse and knowledge layers in the final version of the multi-layered analytical model (discourse layer framed)

6.2.1 Part 1: Descriptive results

This section will present the results obtained in the discourse layer, which represent the speech functions used by the CLIL and L1 groups in both activities. Both quantitative and qualitative results will be presented for each group.

As indicated in the methodology chapters 4 and 5, two CLIL classes and two L1 classes participated in this study, CLIL A and CLIL B, and L1 A and L1 B, respectively, and the statistical analysis of the data corpus was performed using the UAM Corpus Tool. Each class was divided in small working groups and assigned an identification reference (see chapter 5, footnote in section 5.2.12). As already explained in chapter 4, from each CLIL and L1 class (CLILA; CLILB; L1A; L1B) four groups were randomly chosen for the analysis, which amounts to a total of eight groups in CLIL classes and eight groups in L1 classes.

The following section 6.2.2.1 presents the results of the eight CLIL groups obtained from the data analysis in the discourse layer and section 6.2.2.2 shows the results of the eight L1 groups obtained in the same layer. Relevant and frequent features will be exemplified with extracts from the data.

6.2.1.1 CLIL groups

Table 6.1 shows the speech functions produced by CLIL students in the two group discussion activities (STA and PSA) in the CLIL classroom. The two columns show the frequency and distribution of the different speech functions identified in the data. The results are presented locally, in other words, each category is considered as a whole, representing a total of 100%, as opposed to globally, where the 100% would be distributed through each category (including all *initiating* and all *sustaining* moves). When results are presented locally, it means that, for example, the category *initiation* represents 100% and within it the two options obtain a percentage according to their use by students.

Feature	N	Percent
SPEECH FUNCTIONS	N=4457	
Open_initiate	724	16.24%
Sustain	3733	83.76%
OPEN INITIATE	N=724	
Give-info	460	63.54%
Demand-info	264	36.46%
SUSTAIN	N=3733	
Continue	581	15.56%
React	3152	84.44%
CONTINUE	N=581	
Monitor	19	3.27%
Prolong	562	96.73%
REACT	N=3152	
Respond	3006	95.37%
Rejoinder_track	146	4.63%
RESPOND	N=3006	
Support	2577	74.12%
Confront	778	25.88%

Table 6.1 Distribution of speech functions in the two group activities in the CLIL classroom

The first category is *speech functions*, which differentiates between *initiating* (16.24%) and *sustaining* moves (83.76%). This unequal distribution is highly expected as, during casual conversation, *initiations* are followed by several turns of *sustaining* moves on the topic initiated. Moving further, we can observe that in both activities CLIL students prefer *initiating* by *giving information* (63.54%) more than by *demanding information* (36.46%) and *sustaining* interaction with *reactions* (84.44%), which include *support* and *confront* (within *respond*) and *rejoinder-track*, more than with *continuing* moves (15.56%). This preference for *reactions* (produced in the next turn) over *continuing moves* (produced in the same turn) implies that the turns cannot be very long.

When we move towards further level of delicacy of speech functions used by CLIL students, for the types of *continuing* moves, most have been found to be of the *prolong* type (96.73%) rather than of the *monitor* type (3.27%). The high percentage of *prolong* and the low percentage of *monitor* is also a highly expected distribution. The low use of *monitor* can be explained by the fact that this speech function is only used in the CLIL data to check if the rest of the group members follow the speaker, when the students feel someone lags behind, which was not a frequent situation. However, *prolong*, used to further explain something mentioned by the same speaker, was frequently used to help that student make their point and convince the other members of the group.

We find a similar distribution in *react*, with *respond* being the leading move (95.37%) and *rejoinder-track* being used highly infrequently (3.27%). This is also highly expected because *respond* accounts for all replies given to the first speaker by a second speaker whereas *rejoinder-track* has a similar function to *monitor* as it tends to only check or clarify previous moves. Finally, in the *responsive* moves we see a clear tendency among CLIL students to use *support* (74.12%) more than *confront* (25.88%), which shows CLIL students' preference to use short supporting responses, probably with the objective of completing the activities at hand, getting the discussion going forward and arriving at a consensus.

This preference to rather use short turns and supporting responses in both activities (STA and PSA) is illustrated in extracts 6.1 and 6.2:

- 1 *Jorge: This one, this one, this one here is not finished.. eh.. ((reading part of*
- 2 *the question again)) and explain the parts that help them live in that habitat..*
- 3 *Raúl: Ah... eh the....*
- 4 *Jorge: Tail?*
- 5 *Raúl: **Tail, tail (SUPPORTING RESPONSE)***⁶
- 6 *Jorge: **Yes** ((Eva writes)) **(SUPPORTING RESPONSE)***
- 7 *Eva: Tail... ((while writing)) second... the head?*
- 8 *Raúl: No*
- 9 *Jorge: No, no, no... eh... a large body..*

⁶ In each extract, the examined speech functions is presented in capital letters and in bold.

- 10 Raúl: **Yes (SUPPORTING RESPONSE)**
 11 Eva: *A large?*
 12 Jorge: *A large body <L1SP cuerpo largo SPL1>*

Extract 6.1:Clilb4 using short turns and supporting response in the STA

In extract 6.1, Raúl and Jorge *support* each other (lines 5, 6 and 10) meanwhile, for example, in lines 8 and 9 they use *confront* responses; however, the extract reveals a tendency to favour the resolution of the content question in the STA. It is also worth noticing how students' responses tend to be short and mostly contain one word (see lines 3 to 12). We can find examples of a similar type of discourse also in the PSA.

- 1 Nono: *No, no ((Eva writes and Ana turns the page)).. eh... then is my turn..*
 2 *ehh.. I think, is this ((pointing)) because this have a point and this no and then*
 3 *this no and this yes.. You are agree?*
 4 Eva: **Yes ((Ana laughs)) (SUPPORTING RESPONSE)**

Extract 6.2:Clilb1 using slightly longer turns and supporting response in the PSA

In this example, after Nono's use of several *continuing* moves (lines 1, 2 and 3), Eva makes a *supporting* response (line 4).

So, this section has presented the results obtained in both activities in CLIL classes. In the next section, the results will be presented separately per activity. First, we will focus on the results from the science topic discussion activity (STA) and, second, those from the problem-solving discussion activity (PSA).

6.2.1.1.1 Science Topic discussion Activity

Table 6.2 presents the speech functions used by the students in the STA in the CLIL groups. The first category, which presents *initiating* and *sustaining* moves, has a very similar distribution to the one shown in table 6.1. That is, there is a clear preference to sustain (81.51%) than to initiate (18.49%). However, the next level of delicacy, *initiating* move type, is distributed in a different way from the total results of both activities together, as shown in Table 6.1. Thus, most of the *initiating* moves used by the CLIL students in the STA are *demanding information* (61.04%) rather

than *giving information* (38.96%), which leads us to infer that most of the instances corresponding to *giving information* as shown in Table 6.1 come from the PSA. This finding will be addressed in more detail in section 6.2.1.1.2.

Feature	N	Percent
SPEECH FUNCTIONS	N=1249	
Open_initiate	231	18.49%
Sustain	1018	81.51%
OPEN INITIATE	N=231	
Give-info	90	38.96%
Demand-info	141	61.04%
SUSTAIN	N=1018	
Continue	97	9.53%
React	921	90.47%
CONTINUE	N=97	
Monitor	5	5.15%
Prolong	92	94.85%
REACT	N=921	
Respond	846	91.86%
Rejoinder_track	75	8.14%
RESPOND	N=846	
Support	662	78.25%
Confront	184	21.75%

Table 6.2: Distribution of speech functions in the STA in the CLIL classroom

To illustrate this predominance of *demanding information as initiations* in the STA, extract 6.3 is provided below in which one student, Catalina, demands information as a way of initiating the turn.

- 1 *Blanca: The tentacles... to protect them.. of the sharks and all cannibals*
- 2 *Catalina: **How do you say <L2SP tentaculosSPL2> ? (DEMANDING***
- 3 ***INFORMATION)***
- 4 *Blanca: Tentacles but I don't # but you*

Extract 6.3: Clila8 using demanding information in the STA

In extract 6.3, when discussing ways in which animals protect themselves, Catalina comes up with a word that she doesn't know how to express in English. Therefore, she asks her peers (line 2) by initiating a new turn with a demand related to the topic being discussed.

As shown in Table 6.2, the rest of the categories of the discourse layer used in the STA, present a very similar distribution to the one corresponding to the total results for both activities (see Table 6.1 in section 6.2.1.1). A vast majority of the *sustaining* moves are *reacting* moves (90.47%), which are considerably more frequent than *continuing* moves (9.53%). Within *react*, the *supporting* moves are also the mostly used ones by CLIL students in this activity (78.25%). Worth noticing, however, is the high percentage of *monitor* (5.15%) and *rejoinder-track* (8.14%) present in this activity as compared to the general results for both activities presented above (3.27% and 4.63%, respectively; see Table 6.1) and the use of *support*, which is slightly higher than in the two activities considered together (78.25% vs 74.12%).

In the next section we will present the results obtained for the other activity, the PSA.

6.2.1.1.2 Problem-Solving discussion Activity

Table 6.3 presents the speech functions used by the students in the PSA in the CLIL groups. The high percentage in the use of *giving information* (75.05%) over *demanding information* (24.95%) as *initiating* move is opposite to what has been found in the STA where students were observed to have a higher percentage of *demanding information* as a preferred *initiating* move. The distribution of *initiating* moves in the PSA goes therefore in line with the results found for both activities. This confirms our earlier interpretation that most of the instances of *giving information* in the *initiating* moves belong to the PSA.

Feature	N	Percent
SPEECH FUNCTIONS	N=3208	
Open_initiate	493	15.37%
Sustain	2715	84.63%
OPEN INITIATE	N=493	
Give-info	370	75.05%
Demand-info	123	24.95%
SUSTAIN	N=2715	
Continue	484	17.83%
React	2231	82.17%
CONTINUE	N=484	
Monitor	14	2.89%
Prolong	470	97.11%
REACT	N=2231	
Respond	2160	96.82%
Rejoinder_track	71	3.18%
RESPOND	N=2160	
Support	1566	72.50%
Confront	594	27.50%

Table 6.3: Distribution of speech functions in the PSA activity in the CLIL classroom

An example of such use of *giving information* to initiate a conversation in the PSA data is shown in Extract 6.4:

- 1 *Irene: B11 ((Jimena passes the page and they all look at the paper))*
- 2 *Jimena: **Four** because this (GIVING INFORMATION)*
- 3 *Irene: No, no, no... it has to have.. it has to have like two, because this one is*
- 4 *Jimena: But is only have this , and this and this is %X% like this*
- 5 *Irene: Ahhh... is better.. yes, yes yes... then, four ((Juan writes and Jimena*
- 6 *turns the page)). B12... **two...** (GIVING INFORMATION)*

Extract 6.4: Clila2 using giving information in the PSA

In this extract, Irene refers to the problems the group is working on (B11 in line 1 and B12 in line 6) while she turns the page in the PSA booklet. Once the item B11(see Image 6.1) has been announced (line 1), all group members observe it and Jimena initiates the turn by giving information (line 2) as an explanation while Irene does the same later on in line 6 in relation to a new item, B12.

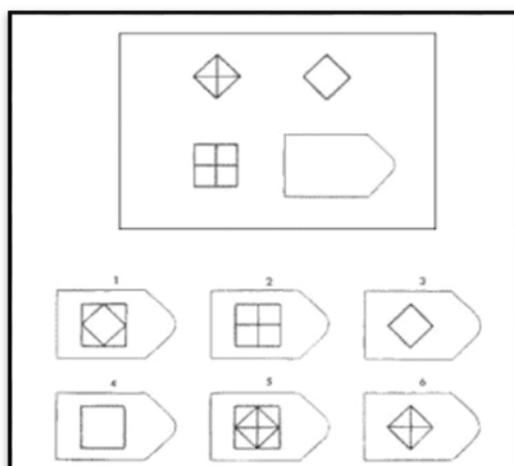


Figure 6.2: Item B11 in the RTPM

As shown in Table 6.3 above, the rest of the categories present a very similar distribution to the one found for two activities combined (see Table 6.1 in section 6.2.1.1). Within *sustaining* moves, *reacting* moves are more commonly used than *continuing* moves (82.17% vs 17.83%, respectively). However, *continuing* moves are slightly more frequent in this activity (17.83%) than in the STAactivity (9.53%). Within *reacting* moves, *supporting* moves are also the ones mostly used by CLIL students in this activity (72.50%) as compared to *confronting* moves (27.50%). Thus, the distribution of *support/confront* in the PSA is the same as the one reflected in the two activities together (as shown in Table 6.1).

In the next section, the results from the L1 groups will be presented.

6.2.1.2 L1 groups

Table 6.4 presents the speech functions performed by the students in the two group activities in the L1 classroom. As in the case of the CLIL groups, the students use

more *sustaining* (85.37%) than *initiating* moves (14.63%). In the *initiating* moves we see a rather even distribution of the two types of moves: *giving information* (59.11%) and *demanding information* (40.89%), although the frequency of *giving information* is slightly higher, the distribution within the *initiating* moves in the L1 data is much more balanced than in the CLIL data.

Feature	N	Percent
SPEECH FUNCTIONS	N=5217	
Open_initiate	763	14.63%
Sustain	4454	85.37%
OPEN INITIATE	N=763	
Give-info	451	59.11%
Demand-info	312	40.89%
SUSTAIN	N=4454	
Continue	853	19.15%
React	3601	80.85%
CONTINUE	N=853	
Monitor	92	10.79%
Prolong	761	89.21%
REACT	N=3601	
Respond	3518	97.70%
Rejoinder_track	83	2.30%
RESPOND	N=3518	
Support	2639	75.01%
Confront	879	24.99%

Table 6.4: Distribution of speech functions in the two group activities in the L1 classroom

Similarly to the results presented for the CLIL groups, most of the *sustaining* moves are *reacting* moves (80.85%) while *continuing* moves are used much less (19.15%). *Reacting* moves are predominantly *responses* (97.70%), with *rejoinder-track* representing only 2.30%, and, within them, and in line with the results for the CLIL groups, the majority are *supporting* moves (75.01%) as compared to a relatively low

number of *confronting* moves (24.99%). Worth noticing in this group is the frequent use of *continuing* moves (19.15%), especially when compared to its use in the CLIL groups (15.56%). Within these, the high percentage of *monitor*, which is almost 11%, is clearly noticeable. Taking into account that *monitor* only represented between 3% and 5% in the CLIL data, the frequency of this move in L1 groups is quite high. This is particularly striking considering that it is a move used to check the state of communication within the groups and it is expected to be rarely used since communication in a small group activity is expected to be normally good.

To sum up, in the L1 group discussions the type of discourse was similar to the one found in CLIL groups. It is characterised by the use of *giving information* to *initiate*, short turns due to the frequent use of *response* and *support* among students to favour the resolution of the content in the STA or the problem in the PSA. The extract below illustrates the use of these moves:

- 1 *Diego: ((pointing; María turns to write and then they turn the page))... Esta*
 2 *((pointing)) (GIVING INFORMATION)*
 3 *María: Sí, es esta (SUPPORTING RESPONSE)*
 4 *Juan. M: La uno (SUPPORTING RESPONSE)*
 5 *María: Sí, la uno es esta ((she writes and they turn the page))...*
 6 *(SUPPORTING RESPONSE)*

Extract 6.5:L1a3 using *responses* and *support* in the PSA

In this extract, Diego starts the turn by *giving information* (line 1) and, after that, María and Juan give short *supporting responses* (lines 3 to 5) that close the exchange quite rapidly and allows them to move on to the next item on the next page.

As in the case of the CLIL data, after describing the results obtained in both activities, we will now present the results for each activity.

6.2.1.2.1 Science Topic discussion Activity

Table 6.5 presents the speech functions performed by the students in the STA in L1 groups. Within *initiating* moves, there is a high percentage of *demanding information* (71.53%) as compared to *giving information* (28.47%). Therefore, we can infer that the high presence of *giving information* in the results from both activities (see Table 6.4 above) might be due to its higher occurrence in the PSA. *Demand information* seems to be by far the mostly used initiating move in the STA.

Feature	N	Percent
SPEECH-FUNCTIONS	N=1643	
Open_initiate	274	16.68%
Sustain	1369	83.32%
OPEN INITIATE	N=274	
Give-info	78	28.47%
Demand-info	196	71.53%
SUSTAIN	N=1369	
Continue	151	11.03%
React	1218	88.97%
CONTINUE	N=151	
Monitor	15	9.93%
Prolong	136	90.07%
REACT	N=1218	
Respond	1174	96.39%
Rejoinder_track	44	3.61%
RESPOND	N=1174	
Support	886	75.47%
Confront	288	24.53%

Table 6.5: Distribution of speech functions in the STA in the L1 classroom

The extract below illustrates the use of *demanding information* in L1 groups in the STA:

- 1 *Pedro: vale venga.. hierba*
 2 *Gustavo: Hierba... no parais de decir hierba*
 3 *Pedro: Es que... es la más rápida*
 4 *María: ¿Y por qué? (DEMANDING INFORMATION)*
 5 *Pedro: Por que... ehhh...*
 6 *Gustavo: Por que la hierba...*
 7 *Pedro: Venga di algo..*
 8 *María: Que por qué es la hierba, a ver, es que,... y..¿ típica? (DEMANDING*
 9 *INFORMATION)*

Extract 6.6: L1a5 using *demanding information* in the STA

In this extract, María repeats part of one of the prompt questions, asking for an explanation (lines 4 and 8). In the STA, quite a lot of examples, like the one illustrated here, of *demanding information* in relation to the questions in the prompt (see e.g., extract 6.4 above for similar use in CLIL data). This might help explain the high presence of the *demand information* move in the STA.

The distribution of *sustaining* moves is very similar to the one found in the results from both activities combined (83.32% vs 85.37%, see Table 6.4 in section 6.2.1.2). It is also interesting to note that in terms of the occurrence of *monitor*, in the STA there is the high percentage of this speech function, thus similar to the analysis of both activities combined , (9.93% vs 10.79%).

6.2.1.2.2 Problem-Solving discussion Activity

Table 6.6 presents the speech functions used by the students in the PSA in the L1 classroom. In *initiating* moves, and contrary to the tendency in the results obtained in the STA, *giving information* is the speech function mostly used (76.28%) as opposed to *demanding information* (23.72%). Therefore, it can be argued that the high frequency of *demanding information* in the initiating moves in the general results on both activities appears to be linked to the STA.

Feature	N	Percent
SPEECH FUNCTIONS	N=3574	
Open_initiate	489	13.68%
Sustain	3085	86.32%
OPEN INITIATE	N=489	
Give-info	373	76.28%
Demand-info	116	23.72%
SUSTAIN	N=3085	
Continue	702	22.76%
React	2383	77.24%
CONTINUE	N=702	
Monitor	77	10.97%
Prolong	625	89.03%
REACT	N=2383	
Respond	2344	98.36%
Rejoinder_track	39	1.64%
RESPOND	N=2344	
Support	1753	74.79%
Confront	591	25.21%

Table 6.6: Distribution of speech functions in the PSA in the L1 classroom

The extract below exemplifies a common way for the L1 groups to initiate turns in the PSA, where the initiation is produced by the stimulus of a new picture or item when turning the page:

- 1 *Pedro: A ver...((turning the page))*
- 2 *Sonia: Es...*
- 3 *Ana: **Es esta (GIVING INFORMATION)***
- 4 *Sonia: Esta ((pointing at the same one))*
- 5 *Ana: El cinco*
- 6 *Sonia. El cinco... no... es.. es este ((pointing)).. ves que se está haciendo cada*
- 7 *vez más pequeño... es este*
- 8 *Ana: Sí, es este ((Sonia turns to write and Ana turns the page))...*

Extract 6.7: L1b1 using giving information in the PSA

Similar to extract 6.3 from the CLIL data and presented in section 6.2.1.1.1., extract 6.7 here reveals that the structure of the activity might explain the use of *giving information* as a starting point in PSA both in L1 and CLIL contexts. The visioning of the new item after turning the page (extract 6.7, line 1) has the role of the “question” stimulus that makes students start the turn by *giving information* in the same way as the prompt question in the STA.

The rest of the *sustaining* moves have a similar distribution to the ones in the STA and both activities combined (compare Table 6.6 on the STA to Table 6.4 on both activities and Table 6.5 on the STA). In Table 6.6, however, it can be observed that *monitor* has a very high presence in the PSA (10.97%), even in comparison to the STA. This allows for a tentative suggestion that this finding might be related to the context (L1 vs CLIL) rather than to the type of activity (STA vs PSA).

6.2.1.3 Summary of descriptive results

The analysis carried out in the STA and PSA in the CLIL and L1 groups has shown that discourse is mostly organized around *initiating* moves that generate a longer stretch of *sustaining* moves. These *initiations* are organized around the questions in the STA and the problems in the PSA. The duration of the follow-up *sustaining* moves depends on the time the group takes to solve the question or the problem itself. Within the *initiating* moves, *giving information* is the one preferred by both CLIL and L1 groups, although there is a high percentage of *demanding information* used by both classes in the STA. This might be explained by the fact that students often re-state and re-formulate parts of questions in the prompt in order to make the task at hand continue.

Regarding *sustaining* moves, a similar pattern of short turns with a predominance of *support* in both groups has been observed. However, two interesting features have been noticed in each class: the high percentage of *rejoinder-track* as *reacting* move in the STA in CLIL groups and the high percentage in the use of *monitor* in both activities in L1 groups. This implies that both groups are concerned with the status of interaction through the use of clarification requests, either by checking if the rest are following (*monitor*) or if the listener has understood the speaker’s turn correctly

(*rejoinder-track*). The fact that checking understanding in the shape of *rejoinder-track* occurs more often in CLIL groups whereas checking attention as in *monitor* is more common in L1 groups could be perhaps related to the L2 or L1 use, respectively.

6.2.2 Part 2: Comparative results

As indicated above, in this second part, comparisons between the CLIL and L1 groups and the two activities (STA and PSA) will be made. As in the previous section, this part will present the results obtained both quantitatively and qualitatively for each comparison (group, CLIL and L1; and activity, STA and PSA).

To obtain the comparative quantitative results the same statistical analysis of the data corpus as in the descriptive part has been used. The comparison of two different databases, CLIL and L1 and STA and PSA, was done using the UAM Corpus Tool. Yet another, third, comparison, including a combination of the two variables (groups and activities), was added to facilitate the interpretation of the results. All comparisons include the calculation of Chi-square and, therefore, provide information about the statistical significance of the difference between the datasets. First, the comparison across groups will be presented.

6.2.2.1 Comparison across groups: CLIL versus L1

Table 6.7 presents the speech functions used by the students in the CLIL and L1 classrooms. The first two columns show the frequency and distribution of the different speech functions in the CLIL class and the third and fourth in the L1 class. The fifth column shows the Chi-square value for a $p=0.05$ (95% confidence level) with one degree of freedom. The last column indicates if the difference across the CLIL and L1 groups is statistically significant. Although there are three possible degrees of statistical difference, in the present study we have considered significant or very significant differences only, except when a slight significance might help explain other more significant results. In all Tables in this section, and unless indicated otherwise, results are presented locally, considering each category as a whole, with a total of 100%, as it has been explained earlier in section 6.2.1.

	CLIL		L1			
Feature	N	Percent	N	Percent	Chisqu	Signif.
SPEECH-FUNCTIONS	N=4457		N=5217			
Open_initiate	724	16.24%	763	14.63%	4.84	++
Sustain	3733	83.76%	4454	85.37%	4.84	++
OPEN INITIATE	N=724		N=763			
Give-info	460	63.54%	451	59.11%	3.07	+
Demand-info	264	36.46%	312	40.89%	3.07	+
SUSTAIN	N=3733		N=4454			
Continue	581	15.56%	853	19.15%	18.09	+++
React	3152	84.44%	3601	80.85%	18.09	+++
CONTINUE	N=581		N=853			
Monitor	19	3.27%	92	10.79%	27.33	+++
Prolong	562	96.73%	761	89.21%	27.33	+++
REACT	N=3152		N=3601			
Respond	3006	95.37%	3518	97.70%	27.78	+++
Rejoinder_track	146	4.63%	83	2.30%	27.78	+++
RESPOND	N=3006		N=3518			
Support	2228	74.12%	2639	75.01%	0.69	
Confront	778	25.88%	879	24.99%	0.69	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.7: Distribution of speech functions in the two group activities in the CLIL and L1 classroom

Three significant differences have been found across the CLIL and the L1 groups. The first one is in the distribution of *continuing* moves. Thus, L1 students tend to use them more (19.15%) than CLIL students (15.56%), who, on the contrary, use a higher percentage of *reacting* moves (84.44% in CLIL vs 80.85% in L1). At the first sight, this can lead to think that the turns produced by the L1 students would be longer. However, the higher percentage in the use of *continuing* moves by the L1 group is explained in the high use of *monitor* and not in their use of *prolong*, which

serves to extend the turns. L1 students' use of *monitor* (10.79%) is also higher than in CLIL groups (3.27%).

In addition, the statistically higher presence of *reacting* moves in CLIL groups is also significant when compared to its use in L1 groups. This can be explained by the higher use of *rejoinder-track* in CLIL groups (4.63%) compared to its use in L1 groups (2.30%). These two results imply that L1 students seem more concerned with checking that the rest of the group members are following the conversation and CLIL speakers often ask for clarifications. As mentioned before (see end of section 6.2.1.3), the fact of CLIL students using *rejoinder-track* more frequently than their L1 peers could be caused by the fact that CLIL students are communicating in their L2, which makes them more concerned with checking if they have understood the message correctly. In the L1 group, on the contrary, the higher production of *monitor* compared to the CLIL group could be caused by a concern in making sure the rest of the group members support and follow them as, since they are working in their L1, the fact of understanding or not the message is not relevant.

Extract 6.8 shows the use of *monitor* in the L1 groups to check if the rest of the students follow:

- 1 *María: En Alaska... Una arbol muy fuerte que aguante...*
- 2 *Diego: Pino*
- 3 *Juan: Tú eres de Alaska? ((to María))*
- 4 *María: No*
- 5 *Juan: Tú eres de Alaska? ((to Diego))*
- 6 *Diego: No*
- 7 *María: Pino! Vale, pino, **verdad?** ((she starts writing)) (MONITOR)*
- 8 *Diego: Sí*
- 9 *Juan: Pino, pinaco*
- 10 *Diego: Por qué?*
- 11 *María: Pino porque es muy fuerte*
- 12 *Juan: Pino, pinaco*
- 13 *María. Porque es fuerte, **verdad?** (MONITOR)*

Extract 6.8: L1a3 using *monitor* in the STA

In this example, María (lines 7 and 13) is checking that Diego and Juan follow her by a frequent use of *monitor*. The main concern in this L1 group is, as explained above, that other members of the group follow, in this case María's line of thinking. It could be a way of not only checking that the rest of the members are listening but also a way of anticipating their support in the question being discussed in the STA.

In the CLIL groups, the use of *rejoinder-track* is frequently realised through confirmation checks and clarification requests (see extract 6.9 below).

- 1 Saúl: *The #... Now my turn, the coniferous ((Lara is taking away the paper*
 2 *from him)) No, no, no... The coniferous, what, what I put? ... the coniferous*
 3 *what?*
 4 Lara: *The coniferous... has...*
 5 Saúl: *Has... we put table?*
 6 Lara: *No*
 7 Saúl: *Yes, they are...*
 8 Lara: *Has needles*
 9 Saúl: ***have? Has? (REJOINDER-TRACK)***
 10 Alicia: ***Needles? (REJOINDER-TRACK)***
 11 Lara: *Yes!*
 12 Saúl: *Yes!*
 13 Alicia: *They look like needles!*
 14 Lara: *Pine trees*
 15 Alicia: *They look like needles, they have the leaves that look alike*

Extract 6.9: Clila3 using *rejoinder-track* in the STA

In this example, Saúl (line 9) and Alicia (line 10) seem concerned with assuring that they have understood correctly Lara's turn (line 8). This attention to understanding in the CLIL groups might be connected with the difficulty of discussing a scientific topic in their L2.

6.2.2.2 Comparison across activities: STA versus PSA

This section compares the two activities (STA and PSA) within each group: first the CLIL group and then the L1 group. This will be followed by a four-entry comparison

which considers both the activity type (STA or PSA) and the group (CLIL or L1). This comparison will show whether the difference found across activities is particular of the context examined (CLIL or L1) or is connected to the activity type itself (STA or PSA). Given the case that the same difference across activities in both groups is found, the difference would be related to the activity. However, if such difference across activities is found only in one group, this would mean that the difference is related to the context (L1 or CLIL) and not to the activity.

Table 6.8 presents the distribution of the speech functions in the STA and the PSA in the CLIL classroom and Table 6.9 presents the same results for the L1 classroom.

Feature	CLIL STA		CLIL PSA		Chisqu	Signif.
	N	Percent	N	Percent		
SPEECH-FUNCTIONS	N=1249		N=3208			
Open_initiate	231	18.49%	493	15.37%	6.46	+++
Sustain	1018	81.51%	2715	84.63%	6.46	+++
SPEECH_FUNCT	N=231		N=493			
Give-info	90	38.96%	370	75.05%	88.43	+++
Demand-info	141	61.04%	123	24.95%	88.43	+++
SUSTAIN-TYPE	N=1018		N=2715			
Continue	97	9.53%	484	17.83%	38.80	+++
React	921	90.47%	2231	82.17%	38.80	+++
CONTINUE-TYPE	N=97		N=484			
Monitor	5	5.15%	14	2.89%	1.31	
Prolong	92	94.85%	470	97.11%	1.31	
REACT-TYPE	N=921		N=2231			
Respond	846	91.86%	2160	96.82%	36.32	+++
Rejoinder_track	75	8.14%	71	3.18%	36.32	+++
RESPOND-TYPE	N=846		N=2160			
Support	662	78.25%	1566	72.50%	10.48	+++
Confront	184	21.75%	594	27.50%	10.48	+++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.8: Distribution of speech functions in the STA and the PSA in the CLIL classroom

Feature	L1 STA		L1 PSA		Chisqu	Signif.
	N	Percent	N	Percent		
SPEECH-FUNCTIONS	N=1643		N=3574			
Open_initiate	274	16.68%	489	13.68%	8.08	+++
Sustain	1369	83.32%	3085	86.32%	8.08	+++
OPEN INITIATE	N=274		N=489			
Give-info	78	28.47%	373	76.28%	166.08	+++
Demand-info	196	71.53%	116	23.72%	166.08	+++
SUSTAIN	N=1369		N=3085			
Continue	151	11.03%	702	22.76%	84.19	+++
React	1218	88.97%	2383	77.24%	84.19	+++
CONTINUE	N=151		N=702			
Monitor	15	9.93%	77	10.97%	0.14	
Prolong	136	90.07%	625	89.03%	0.14	
REACT	N=1218		N=2383			
Respond	1174	96.39%	2344	98.36%	13.97	+++
Rejoinder_track	44	3.61%	39	1.64%	13.97	+++
RESPOND	N=1174		N=2344			
Support	886	75.47%	1753	74.79%	0.19	
Confront	288	24.53%	591	25.21%	0.19	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.9: Distribution of speech functions in the STA and the PSA in the L1 classroom

As we can observe, as regards the *initiating* moves, the significant differences found in the CLIL class (table 6.8) are the same as those found in the L1 class (table 6.9). In the STA, *initiating* moves as *demanding information* are significantly more frequent, whereas in the PSA, most are realised by *giving information*. This difference has already been put forward in the descriptive part of the results (sections 6.2.1 and 6.1.1). In *sustaining* moves, both activities show a higher use of *reacting* moves. However, there is a significantly higher use of *continuing* moves in the PSA, which almost doubles the amount of this type of move in the STA. Thus, *reacting* moves are significantly more frequent in the STA. When examining the

types of *continuing* moves in the CLIL group, their higher presence in PSA seems to be due to the more frequent use of *prolonging* moves (97.11% in PSA compared to 94.85% in the STA).

In the L1 group, however, as pointed out in the descriptive section 6.2.1, it seems that the more frequent use of *monitor* in the PSA (10.97%) as compared to the STA (9.93%) explains the higher percentage of *continuing* moves in the PSA. However, the use of *monitor* in the L1 data is also quite high in the STA (9.93%) when compared its use in the same activity in the CLIL data (5.15%). In fact, *monitor* seems to be used more frequently in the L1 data in general (also in the PSA activity it represents 10.97% in L1 and 2.89% in CLIL). Therefore, a comparison which takes into account both the difference across the activities and the groups is necessary to determine whether the use of *monitor* is a predominant factor in all L1 groups or is especially significant when L1 students perform the PSA. This issue will be discussed in section 6.2.2.3 that comprises both a comparison across groups and across activities.

Another significant difference also mentioned in the descriptive part of the results (sections 6.1.1 and 6.2.1) is the use of *rejoinder-track* by the CLIL students as compared to the L1 students. The comparison across activities (see Tables 6.8 and 6.9) shows that, in both groups (CLIL and L1), there is a significantly higher use of *rejoinder-track* in the STA than in the PSA. This might be explained by relating the higher use of *rejoinder-track* to the very nature of the STA.

To sum up, the comparison across activities (STA and PSA) has revealed several similarities and differences. Both activities have more *reacting* than *continuing* moves and within the *responding* moves the most frequent are the *supporting* ones. As for differences, in the STA, *initiations* seem to be mostly done through *demanding information* and students are more concerned with checking that they have understood the previous turn correctly through the use of *rejoinder-track*. Moreover, the high use of *demanding information* in the STA could also be related to the organisation of the task at hand, where students begin the discussion by reformulating a prompt question.

To illustrate this finding, the use of *demanding information* and *rejoinder-track* in the CLIL and L1 groups in the STA are exemplified below.

- 1 Gerardo: # bueno pues un oso
- 2 Juan: ¿**Por qué?** (DEMANDING INFORMATION)
- 3 Elena: Pues porque come de todo, un oso pardo pero #
- 4 Gerardo: **Pero ¿por qué?** (DEMANDING INFORMATION)
- 5 Elena: Porque es muy #
- 6 Juan: ¿**Qué?** (REJOINDER-TRACK)
- 7 Gerardo: Porque anda muy lento ((Juan laughs))

Extract 6.10: L1a4 using *demand information* and *rejoinder-track* in the STA

In extract 6.10, Juan and Gerardo are reformulating part of the prompt questions (lines 2 and 4) to remind others that the answer requires an explanation with reasons. Later on (line 6), there is a moment when Juan seems not to understand or hear what was said and uses *rejoinder-track* to catch up with the group discussio

- 1 Daniel; [**what do you think?**] (DEMAND INFORMATION)
- 2 Clara: [[turtles]]
- 3 Daniel: Turtles
- 4 Antonio: **Turtles?** (REJOINDER-TRACK)
- 5 Daniel: Yes
- 6 Clara: Water turtles...
- 7 Antonio: They have long... They have long... ((Clara puts the microphone next to his mouth)) They have long... nails... They have long nails
- 8

Extract 6.11: Clila5 using *demand information* and *rejoinder-track* in the STA

In extract 6.11, Daniel starts demanding the opinion about the question being discussed from the rest of the group (line 1). When a possible answer is given (line 2), which is supported by Daniel's repetition (line 3), another member tries to confirm his understanding of the proposal (line 4) by using *rejoinder-track*. Moreover, since students are taking notes of the answers provided by the group

members, and because of this, *rejoinder-track* might be used to confirm that they have understood correctly.

However, it has been found that *demanding information* was also used for other purposes. In the STA in CLIL, frequent questions refer to linguistic aspects, e.g., the way of saying or writing something in English (see extract 6.12) and spelling them. In other words, *demanding information* in the CLIL data was often related to metalinguistic inquiries, as illustrated in extract 6.12.

- 1 Lara: *Ah! Ok... Coniferous because they... in the winter... in the winter*
 2 *((dictating while Saúl writes))*
 3 Alicia: **Why do you put because with a capital letter? (DEMANDING**
 4 **INFORMATION)**
 5 Saúl: *Because I know!*

Extract 6.12: Clilb3 *demanding information* and centred on language in the STA

However, there are also examples of the use of *demanding information* for metalinguistic purposes in the L1 data, as in extract 6.13:

- 1 Celia: *Han crecido...((he continues writing)) han crecido ... crecido... ponemos*
 2 *han crecido de pequeñas?.. desde pequeñas han crecido allí*
 3 Guille: *Desde pequeñas allí... ¿ahí o allí? (DEMANDING INFORMATION)*
 4 Celia: *Alli... porque... aver... ahora no estamos en la montaña... es como si digo*
 5 *ahí, ahí, ahí ...está .. ahí está la montaña*
 6 Guille: *Allí con tilde en la i..*

Extract 6.13: L1b6 *demanding information* as a metalinguistic in the group STA.

Thus, as illustrated in the examples above, this focus on language-related aspects when discussing the prompt questions in the STA could be more related to the type of activity than to the language used (L2 or L1).

However, Table 6.8 above reveals one difference across activities which only applies to the CLIL data. This difference signals a significantly higher use of *supporting* responses in CLIL when performing the STA (78.25%) as compared to the PSA

(72.5%). Although this difference can also be appreciated in the L1 class, where the use of *supporting* moves in STA (75.47%) is slightly higher than in the PSA (74.79%), it is not significant. However, as no significant differences were found in both groups (CLIL and L1), this fact cannot be accounted for as relevant within the activity type comparison. A more in depth analysis is necessary in order to delve deeper into the CLIL and L1 results.

Therefore, Tables 6.10 and 6.11 below show the use of the two types of *responding* moves, support and confront, in each CLIL and L1 groups, respectively, in the STA. The tendency in all groups is predominantly *support*, which stands for between 65 to almost 90%. However, there is an exception in one of the L1 groups, more specifically, in L1b1 which only shows 49.1%. The deviation in this group can explain why the more frequent use of *support* moves in the STA compared to the PSA activities in the L1 group still did not reach a significant difference.

Feature	Clila2 STA		Clila3 STA		Clila5 STA		Clila8 STA		Clilb1 STA		Clilb3 STA		Clilb4 STA		Clilb6 STA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
RES	N=57		N=111		N=151		N=118		N=98		N=88		N=98		N=125	
SUP	43	75.44%	76	68.47%	123	81.46%	79	66.95%	87	88.78%	74	84.09%	77	78.57%	103	82.40%
CON	14	24.56%	35	31.53%	28	18.54%	39	33.05%	11	11.22%	14	15.91%	21	21.43%	22	17.60%

Notes: RES – responding moves; SUP – supporting moves; CON – confronting moves.

Table 6.10: Type of responses in the STA group by group in the CLIL class

Feature	L1a1 STA		L1a3 STA		L1a4 STA		L1a5 STA		L1b1 STA		L1b2 STA		L1b5 STA		L1b6 STA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
RES	N=161		N=197		N=218		N=117		N=116		N=118		N=123		N=124	
SUP	113	70.19%	153	77.66%	170	77.98%	82	70.09%	57	49.14%	98	83.05%	105	85.37%	108	87.10%
CON	48	29.81%	44	22.34%	48	22.02%	35	29.91%	59	50.86%	20	16.95%	18	14.63%	16	12.90%

Notes: RES – responding moves; SUP – supporting moves; CON – confronting moves.
Coloured cells: light yellow - slightly significant; yellow – significant; dark yellow - very significant.

Table 6.11: Type of responses in the STA group by group in the L1 class

Next, the possible reasons for why group L1b1 presented such low use of *support* and high use of *confront* will be examined through a more qualitative analysis. As already explained, most of the *support* moves in the STA have the function of contributing to the co-construction of the answers to the prompt questions by the group, as illustrated in extract 6.14:

- 1 *Ana: And is a?? ((Ana writes)) and turtles.... and what body parts have?*
 2 *Eva: Crocodiles have .. eh..*
 3 *Nono: %X%*
 4 *Eva: Turtles have... eh... ((Nono is trying to say something to her)).. teeth...
 5 eh... mouth*
 6 *Ana: **Turtles have mouth... (SUPPORTING RESPONSE)***
 7 *Nono: And what else? What more?*
 8 *Eva: And water*
 9 *Ana: Water?*
 10 *Eva: Yes ((Ana continues writing))*
 11 *Nono: **And is little bit %X% (SUPPORTING RESPONSE)***
 12 *Eva: **And can adapt in cold water (SUPPORTING RESPONSE)***

Extract 6.14: Clilb6 using *support* in the group STA

In this extract from a CLIL group, Eva gives a complete response to the prompt question (lines 4-5) and Ana *supports* her response by repeating the statement without pauses (line 6). Further down (lines 11 and 12) Nono and Ana *support* Eva's second response (line 8) and extend her statement. We find a similar use of *support* by extending a previous statement (lines 2-4) in extract 6.15 from an L1 group:

- 1 *María: A ver... un pez sierra, un pez espada y un... o el tiburón #*
 2 *Gustavo: **Y un tiburón! (SUPPORTING RESPONSE)***
 3 *Pedro: **Y el tiburón martillo! (SUPPORTING RESPONSE)***
 4 *María: **Un pez espada y el tiburón martillo, vale (SUPPORTING
 5 RESPONSE)***

Extract 6.15: L1a5 using *support* in the STA.

The use of support in the examples above was characteristic of both CLIL and L1 groups in the STA activity. However, as already mentioned, the quantitative results show that the dynamics in group L1b1 was different from the rest. Extract 6.16 below illustrates the low use of *support* and high use of *confront* in this group as compared to the other groups.

- 1 Ana: *En serio, en la selva amazónica..*
 2 Sonia: *No me.. no me sale ninguna*
 3 Ana: *%X%*
 4 Sonia. *Palmeras*
 5 Ana: **Qué no! (CONFRONTING RESPONSE)**
 6 Sonía: **Qué sí! (CONFRONTING RESPONSE)**
 7 Ana: **Qué no! (CONFRONTING RESPONSE)**
 8 Sonía: **Qué sí! (CONFRONTING RESPONSE)**
 9 Ana: **Qué no! Que no hay palmeras en la selva amazónica!... Hay que**
 10 **ser.. lianas (CONFRONTING RESPONSE)**
 11 Pedro: *Lianas!*
 12 Sonia: **Lianas no es una planta (CONFRONTING RESPONSE)**
 13 Ana: **Lianas es una planta (CONFRONTING RESPONSE)**
 14 Sonia: **No (CONFRONTING RESPONSE)**

Extracts 6.16: L1b1 using *confront* in the STA

As shown in extract 6.16, Ana and Sonia (lines 5-10 and 12-14) do not seem to agree and neither of the two gives in or opens the possibility of reasoning. In general, *Confronting responses* are followed by reasons which could be discussed. There are frequent bare negations of what the others are saying. In extract 6.17 from the same group, we can observe a little more argumentation by Pedro and Ana in their *confronting responses* (lines 12-15); however, *confronting responses* without reasons appear more often (lines 4-8).

- 1 *Sonia: En que partes del cuerpo del animal podríais fijaros para saber qué*
 2 *come? Por qué? Razonad vuestras respuestas.. los dientes.. sino tiene ((making*
 3 *a toothless gesture)) pues entonces no puede comer carne*
 4 *Pedro: **Sí que puede comer carne! (CONFRONTING RESPONSE)***
 5 *Sonia: **No! No puede! De toda la vida los dinosaurios hervi.. eh..los***
 6 ***dinosaurios por ejemplo los que comen plantas (CONFRONTING***
 7 ***RESPONSE)***
 8 *Ana: **las girafas tienen dientes planos (CONFRONTING RESPONSE)***
 9 *Sonia: **Pero no pueden comer carne (CONFRONTING RESPONSE)***
 10 *Ana: Así ((makes a picture on a piece of paper))*
 11 *Sonia: No pueden comer carne.. los dientes.. pon, los dientes, sino tienen no*
 12 *pueden comer carne, si tienen, pero los tienen puntiagudos, sí ((Ana writes))*
 13 *Pedro: **Sí pues nosotros comemos carne y no los tenemos puntiagudos***
 14 ***(CONFRONTING RESPONSE)***
 15 *Ana: **Por que somos personas normales y somos omnívoros***
 16 ***(CONFRONTING RESPONSE)***

Extract 6.17: L1b1 using *confront* in the STA

To sum up, while the rest of the L1 groups in the STA follow the general tendency with a higher presence of *supporting responses*, the interactional position of one group seems to have deviated from the rest of the L1 STA data. Therefore, it can be argued that there is a higher use of *supporting responses* in the STA in both groups (CLIL and L1) if we consider group L1b1 an exception from the rest.

In the next section we will examine the differences found taking into account both the groups (L1 or CLIL) and the activity-type (STA or PSA).

6.2.2.3 Comparison across groups and activities

This section presents the comparative results across both group (CLIL and L1) and activity type (STA and PSA). To avoid unnecessary repetition, it only examines the results that differ from those obtained separately in the comparisons between the two groups (section 6.2.2.1) and the two activities (section 6.2.2.2). Thus, Table 6.12

below shows whether the significant differences found across activities (STA and PSA) pertain only to one of the groups (CLIL or L1) or to both.

The results presented in Table 6.12 should be interpreted as follows: If the comparative analysis reveals significant differences across groups and activities, only one of the activity squares from each group is coloured in dark yellow (see *give-info* moves). If the significant differences are across groups (but not activities) both activity squares from one group are coloured in dark yellow (see *monitor* moves). If significant differences are found neither across groups nor across activities, the squares in the table remain in white (see *continuing* moves). A light coloured square (see *monitor* moves) reflects a slightly significant difference.

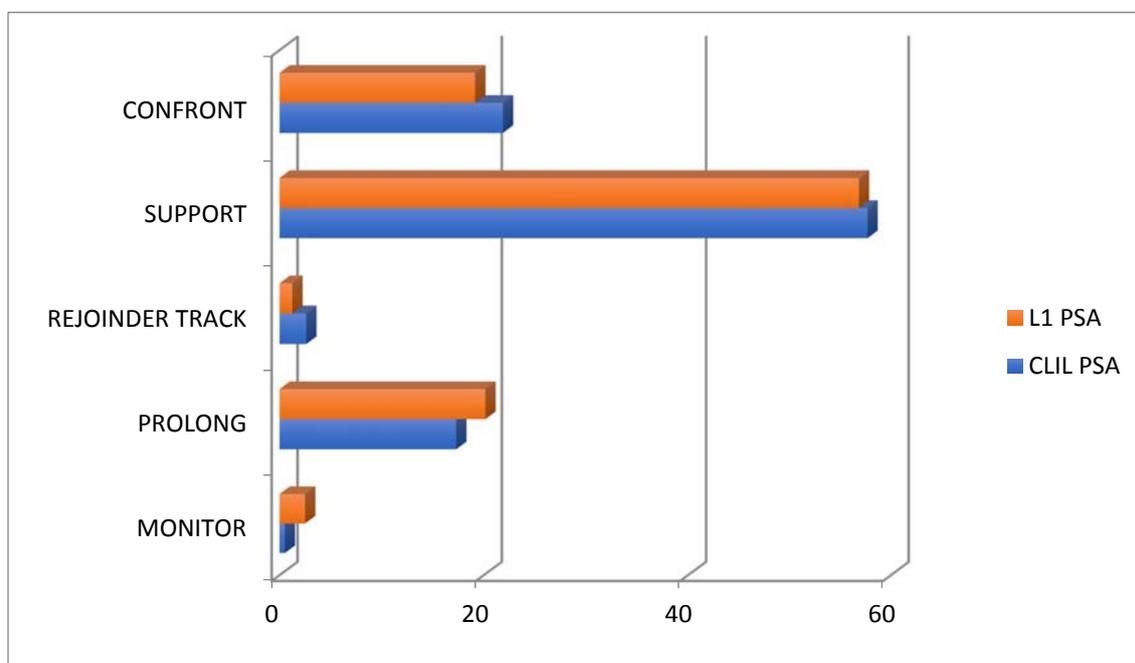
Feature	CLIL STA		L1 STA		CLIL PSA		L1 PSA	
	N	Percent	N	Percent	N	Percent	N	Percent
SPEECH FUNCTIONS	N=1249		N=1643		N=3208		N=3574	
Open_initiate	231	18.49%	274	16.68%	493	15.37%	489	13.68%
Sustain	1018	81.51%	1369	83.32%	2715	84.63%	3085	86.32%
OPEN INITIATE	N=231		N=274		N=493		N=489	
Give-info	90	38.96%	78	28.47%	370	75.05%	373	76.28%
Demand-info	141	61.04%	196	71.53%	123	24.95%	116	23.72%
SUSTAIN	N=1018		N=1369		N=2715		N=3085	
Continue	97	9.53%	151	11.03%	484	17.83%	702	22.76%
React	921	90.47%	1218	88.97%	2231	82.17%	2383	77.24%
CONTINUE	N=97		N=151		N=484		N=702	
Monitor	5	5.15%	15	9.93%	14	2.89%	77	10.97%
Prolong	92	94.85%	136	90.07%	470	97.11%	625	89.03%
REACT	N=921		N=1218		N=2231		N=2383	
Respond	846	91.86%	1174	96.39%	2160	96.82%	2344	98.36%
Rejoinder_track	75	8.14%	44	3.61%	71	3.18%	39	1.64%
RESPOND	N=846		N=1174		N=2160		N=2344	
Support	662	78.25%	886	75.47%	1566	72.50%	1753	74.79%
Confront	184	21.75%	288	24.53%	594	27.50%	591	25.21%
Notes: Coloured cells: light yellow - slightly significant; yellow – significant; dark yellow - very significant.								

Table 6.12: Distribution of speech functions in the STA and the PSA in the CLIL and the L1 classroom

The use of *sustaining* moves presents statistically significant differences. Thus, both L1 STA and L1 PSA squares are coloured in yellow in the case of *monitor* (dark

yellow in L1PSA and light yellow in L1STA) and both the CLIL STA and CLIL PSA are coloured in dark yellow in the use of *rejoinder-track*. This confirms that *monitor* is used significantly more by L1 students than by CLIL students in both activities and that *rejoinder-track* is used significantly more by CLIL students than by L1 students in both activities. However, there are also slightly significant differences (reflected in the light yellow colour) in the use of *monitor* between L1 STA and CLIL STA and even more significant between L1 PSA and CLIL PSA. This indicates that even if the difference in the use of *monitor* is across groups (L1 higher than CLIL) it is also slightly higher in the L1 PSA (darker color), that is, the difference found in the use of *monitor* by L1 and *rejoinder-track* in CLIL is more pronounced in the PSA than in the STA.

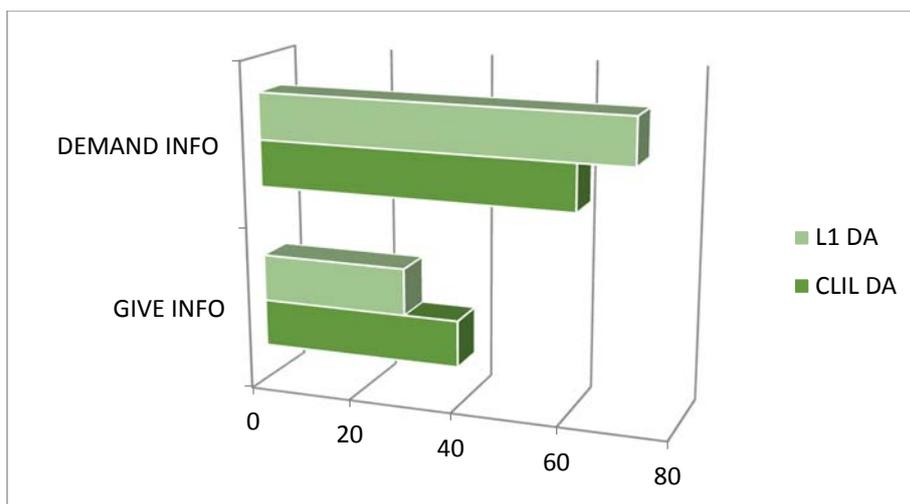
Graph 6.1 breaks down the four-entry comparison in Table 6.12 by presenting the use of *sustaining* moves by both groups (CLIL and L1) only in the PSA. It can be seen that the use of all *sustaining* options follows the same pattern but *prolong* (20.16%) and *monitor* (continuing moves, 2.5%) in the L1 group and *rejoinder-track* (2.62%) and *confront* (responsive moves, 21.88%) in the CLIL group differ notably. However, of these differences only *monitor* in the L1 class and *rejoinder-track* in the CLIL class have been found statistically significant.



Graph 6.1: Distribution of the types of *sustaining* moves performed by CLIL and L1 students in the PSA

In the case of *demanding information*, Table 6.12 above shows how this function is mostly used in STA in both groups (CLIL: 61.04%; L1: 71.53%) compared to PSA (CLIL: 24.95% and L1: 23.72%), which confirms therefore the difference found across activities in section 6.2.2.2. The table also shows a significantly higher use of *demanding information* (71.53%) by the L1 students (square coloured in dark yellow) compared to the CLIL students (61.04%) in the STA. In turn, *giving information* appears to be used significantly more by CLIL students (38.96%) than by L1 students (28.47%) in the STA. These statistically significant differences contradict what was said above that both groups (CLIL and L1) used *demanding information* significantly more in the STA. To see what could be causing this apparent contradiction in the data retrieval we will examine the results on *initiating* types in all small groups in both the L1 and the CLIL class.

Graph 6.2 separates the four-entry comparison by presenting the use of *initiating* moves by both groups (CLIL and L1) only in the STA. As we can see, the tendency in the higher use of *demanding information* in STA in both groups is confirmed. However, in CLIL groups, there is a significantly higher use of *giving information* and lower use of *demanding information* as compared to L1 groups.



Graph 6.2: Distribution of the types of *initiating* moves performed by CLIL and L1 students in the STA.

Tables 6.13 and 6.14 below show the use of *initiating* moves in the STA in each CLIL and L1 group, respectively. It can be observed that the general tendency is for

demanding information to be used more than *giving information* since in Table 6.13 (CLIL groups) practically (all cells are in yellow while in Table 6.14 (L1) all cells are in yellow. It must be noted, however, that the use of *demanding information* by the CLIL group is generally lower as compared to the L1 group (darker yellow cells represent higher use and lighter yellow cells lower). Despite this result, all CLIL groups still show a higher use of *demanding information* than *giving information* except for Clila2 group (*giving information* cell coloured in yellow). This deviation of this group could have caused the significant difference in the general results in the CLIL class.

Feature	Clila2 STA		Clila3 STA		Clila5 STA		Clila8 STA		Clilb1 STA		Clilb3 STA		Clilb4 STA		Clilb6 STA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
SPEECH_FUNCT	N=27		N=34		N=54		N=20		N=20		N=19		N=27		N=30	
Give-info	16	59.26%	15	44.12%	20	37.04%	9	45.00%	7	35.00%	8	42.11%	8	29.63%	7	23.33%
Demand-info	11	40.74%	19	55.88%	34	62.96%	11	55.00%	13	65.00%	11	57.89%	19	70.37%	23	76.67%
Notes: Coloured cells: light yellow - slightly significant; yellow – significant; dark yellow - very significant.																

Table 6.13: Type of initiations in the STA group by group in the CLIL class

Feature	L1a1 STA		L1a3 STA		L1a4 STA		L1a5 STA		L1b1 STA		L1b2 STA		L1b5 STA		L1b6 STA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
SPEECH_FUNCT	N=40		N=41		N=51		N=25		N=24		N=27		N=36		N=30	
Give-info	12	30.00%	16	39.02%	12	23.53%	12	48.00%	4	16.67%	6	22.22%	11	30.56%	5	16.67%
Demand-info	28	70.00%	25	60.98%	39	76.47%	13	52.00%	20	83.33%	21	77.78%	25	69.44%	25	83.33%
Notes: Coloured cells: light yellow - slightly significant; yellow – significant; dark yellow - very significant.																

Table 6.14: Type of initiations in the STA group by group in the L1 class

Extract 6.18 illustrates the use of *giving information* in the STA in Clila2 group:

- 1 *Jimena: ((takes the paper from her and reads the second question)) why do*
 2 *you think you would find those animals and plants? Give reasons for your*
 3 *answers*
 4 *Irene: Because... why...*
 5 *Juan: Because...*
 6 *Irene: **because... because the... because the...daisies... attract the light...***
 7 *attract the <L2SP sol SPL2> and then you... you ... ehmmm ((Jimena reaches to*
 8 *touch Irene's necklace **(GIVE INFORMATION)***
 9 *Jimena: Because the daisies attract the ants...*
 10 *Irene: No...((smiling))... Okay...*
 11 *(...)*
 12 *Jimena: I read... Coniferous and flowering plants are different types of plants.*
 13 *Name three differences between them ((reading third question)).*
 14 *Irene: **That the coniferous... coniferous tree the leaves don't fall and the***
 15 ***# (GIVE INFORMATION)***
 16 *Jimena: ((Juan starts writing)) the coniferous trees... leaves don't fall*

Extract 6.18: Clila2 using *give information* in two *initiations* in the STA.

In Clila2 group, one of the group members, Irene, had a dominant role in the discussion and her immediate reaction after reading a prompt question was usually to *give information* (lines 6 and 14). It must be reminded here that, since in the STA a prompt with questions was given to the students, the reading of these questions were not considered initiations. Thus, the first initiation was considered to be the first move held after the reading of the questions which in many cases included restating the original questions, as described previously. This could explain the high use of *demanding information* in the STA. However, in the Clila2 group, the strong participation of Irene, who often did not wait for the question to be repeated and was often the first to initiate by *giving information*, might have made this group behave differently from the rest of the CLIL groups.

In sum, results across groups and activities have confirmed most of the differences and similarities presented in previous sections. The results shown in this section

have confirmed that the speech function *monitor* is used significantly more by L1 students than by CLIL students in both activities but especially in the PSA, while the speech function *rejoinder-track* is used significantly more by CLIL students than by L1 students in both activities. It has also been shown that the speech function *demand information* is used significantly more in the STA than in the PSA while the speech function *give information* is used significantly more in the PSA than in the STA in both groups (CLIL and L1).

6.2.2.3 Summary of comparative results

Until now we have presented comparative results on the CLIL class and the L1 class and the STA and the PSA which have confirmed the results of the descriptive part as to the similar distribution of *initiating/sustaining* moves in all classes and both activities.

The results on the *initiating* moves have shown a difference across the two activities. In the STA, students initiate by *demanding information* while in the PSA they do it *giving information*. Another significant difference in the use of *demanding information* was also found in the STA between the two groups (CLIL and L1). The use of *demanding information* in L1 STA was found to be significantly higher than in CLIL STA. However, when a further, group by group, analysis was performed, a deviation from the norm group was found in CLIL data (Clila2) in the STA. This group had a higher use of *giving information* than *demanding information* in the STA which biased the results of the rest of the CLIL groups, which, on the contrary, ratified a significantly higher use of *demanding information* in the STA as compared to the PSA. The repetition or re-stating of part of the prompt questions and the interest in metalinguistic inquiries have proven to be strongly related to the use of *demanding information* in the STA in both classes.

In the distribution of *sustaining* moves like *continue/react*, results have also shown differences across activities (STA or PSA) and across groups (CLIL or L1). *Continuing* moves are more present in the PSA in both CLIL and L1 groups, having a slightly higher percentage in L1 groups than in CLIL groups. However no significant differences were found when comparing both groups and activities. In the case of

L1 groups, the high use of *continuing* moves has been linked to the frequent use of *monitor* and, in the CLIL group, to the higher production of *prolonging* moves in the PSA. The higher difference in the L1 group in the use of *continuing* moves as compared to the CLIL group is also caused by the high use of *monitor* in the L1 groups in general.

Reacting moves, which were the most commonly used by the two classes and in the two activities, were found significantly higher in the CLIL class compared to the L1 class. This difference was related to the significantly higher use of *rejoinder-track* by the CLIL students compared to their L1 peers. Within *reacting* moves and in the *response* category, a significant difference was found in the use of *support* in the STA as compared to that in the PSA. In the first moment, this difference was not taken into account as the difference in the use of *support* across activities was only found significant in CLIL groups. However, in a further, group by group display of the results for both L1 and CLIL groups, the high use of *support* in the STA was proven present in all but one of the L1 groups, namely, L1b1, which had an unusually high use of *confront*. After the analysis of these results, L1b1 group was categorized as deviated from the rest and the difference in the use of *support* across activities was restated.

6.2.3 Summary of results in the discourse layer

The results retrieved from the discourse layer give us an outline of conversations in both classes (CLIL and L1) and in both activities (STA and PSA). As described before, in both groups and activities, discourse is organized around *initiating* moves that generate a longer stretch of *sustaining* moves. In the first step, initiations responded to the type of activity they were aiming to fulfil. In the activity where direct questions were asked through a prompt, the STA, both CLIL and L1 students tended to initiate *demanding information* as well. In the PSA, where there was no need to restate questions because the students had to follow a booklet with 60 items in the form of matrices that needed to be completed with a missing part, *giving information* was the first initiation step taken by students from both the CLIL and the L1 groups.

The results obtained in *sustaining* moves picture group interactions as a series of short reacting turns with a concern for *monitoring* (checking if the rest of the group members follow the conversation) by the L1 students. In turn, CLIL students were more concerned with the need for confirmations through the use of *rejoinder-track*. The use of *supporting* moves was also found different across activities, with a significantly higher use of these moves in the STA. It seems that the science questions in the prompt used in the STA pushed students to be more *supportive*.

6.3 Results in the knowledge layer

This section shows the results obtained in the knowledge layer. The knowledge layer is based on Christie's (2002) classification of classroom registers (see Chapter 2, section 2.2.2.2., and Chapter 5, section 5.3.2, for more details) and Dalton-Puffer's (2013) classification of CDFs (see also Chapter 2, section 2.3, and Chapter 5, section 5.3.2) as well as two more categories from Eggins and Slade's (1997) speech functions model: *agree* and *disagree*.

The results presented in this section are, therefore, based on two levels: registers and cognitive-speech functions. Within the first level, the study specifically addressed the *instructional* register. As stated in chapter 2, register is defined by Martin (2009) as a pattern of linguistic choices which entail a certain relationship with the content transmitted. The *instructional* register is therefore made of those choices which are related to the particular "content" being taught and learned (Christie, 2002). In the case of the *regulative* register, it describes choices that help organize and control a certain activity in the classroom. Since in the knowledge layer we are interested in the type of content dealt by students and not how they organize themselves and the activity, the *instructional* register was the focus of the knowledge layer in the analytical model developed in this study. Yet, the *regulative* register was analysed in the interactional layer, where the analytical focus was on the interaction among peers (see section 6.4 for results obtained in the interactional layer). Another category was added at the register level to account for linguistic choices that fell within neither *regulative* nor *instructional* register. These are the choices related to social content, and it was categorized under the term *social talk*.

Within the *instructional* register a more concrete knowledge level to attend to content closely related to the speech functions used in the discourse layer was designed. This level consists of 3 CDFs adapted from Dalton-Puffer (2013): *explanations*, *evaluations* and *facts*. *Explanations* and *evaluations* are two of the seven CDFs originally proposed by Dalton-Puffer (2013). *Facts*, however, and as explained in chapter 5, is an adaptation aimed at combining and simplifying several CDFs (*classify*, *define*, *describe*, *report* and *explore*). The three CDFs used in this study are incorporated within the discourse layer in: *give* and *demand information* (*give and demand facts, explanations or evaluations*, respectively) in *initiating* moves and *prolong*, *confront* and *support* (*prolonging, confronting and supporting explanations, evaluations and facts*, respectively) in *sustaining* moves.

Apart from these, two other speech functions from the last delicacy level in Eggins and Slade's (1997) model and pertaining to *replying* moves were used (see chapter 5, section 5.2.2, for a more detailed explanation): *agree* and *disagree*. These two functions provide a positive (*agree*) or a negative (*disagree*) response to the previous move. In contrast with Eggins and Slade's definition, these two moves were added to the *supporting* and *confronting* responses in the knowledge layer in this study to account for moves where the respondent only gave agreement or negation to the previous statement.

Finally, another category in the form of *prior move* was added to this analytical layer, which accounts for the move previous to *prolong*. This previous move is categorized as *supporting* or *confronting* in order to see whether that *prolong* is supporting the previous speaker's turn or confronting it. In Figure 6.3, which shows the whole multi-layered analytical model developed for the present thesis, the elements constituting knowledge layer are framed.

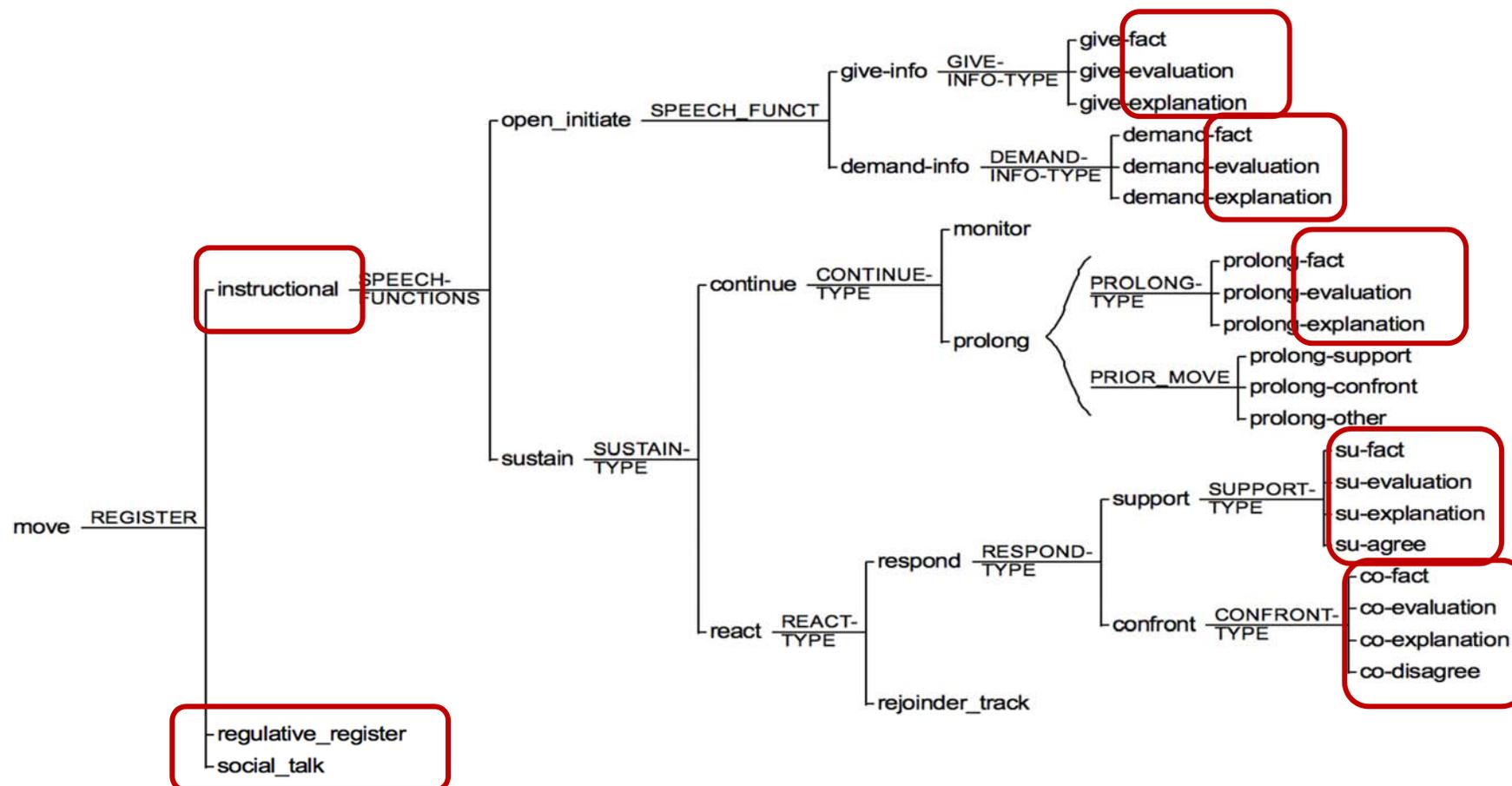


Figure 6.3: Discourse and knowledge layers in the final version of the multi-layered analytical model (knowledge layer framed).

6.3.1 Part 1: Descriptive results

This part presents the results obtained in the knowledge layer by the CLIL and the L1 groups in a descriptive way. In the same line as in the discourse layer, both quantitative and qualitative results will be presented for each group.

The statistical analysis of the data for the quantitative results was done in the same way as for the discourse layer, using the UAM corpus tool. Next, we show the results retrieved from the use registers and the delicacy level linked to knowledge and constituted by *explanations*, *evaluations* and *facts* (and *agree* and *disagree* in responses). Relevant and frequent features will be exemplified with extracts from the data. Following the structure used for the discourse layer, I will first present the results from the CLIL group.

6.3.1.1 CLIL groups

Following the same pattern of data presentation employed in the discourse layer, all results in this section are also presented locally, i.e. with each category considered as a whole, with a total of 100%. Table 6.15 shows the use of registers in the two activities (STA and PSA) by the CLIL group in terms of the frequency and distribution of *instructional* and *regulative* registers and of *social talk*. The results indicate that most of the talk produced by CLIL students in both activities is focused on the task: either for organizational aspects through *regulative* register (22.65%) or content aspects by discussing the topic at hand through *instructional* register (74.56%). Little space is left for the use of *social talk*.

Feature	N	Percent
REGISTER		
Instructional	4457	74.56%
Regulative	1354	22.65%
Social_talk	167	2.79%

Table 6.15: Registers used in the two group activities in the CLIL classroom.

Examples of the use of *regulative* register in the CLIL group are found in both activities, STA and PSA. Thus, in extract 6.19, the regulative register seems to help students be on track and focus on the activity at hand:

- 1 *Roberto: <L1SP ¿ Qué pasa?... SPL1>.. ((they turn the page))*
 2 *Blanca: **You have to participate Roberto (REGULATIVE REGISTER)***
 3 *Roberto: **But I participate** ((she makes a negative gesture)) **Yes, a lot***
 4 ***(REGULATIVE REGISTER)***
 5 *Blanca: **No...You are not participating, we are talking, Catalina and me***
 6 ***and you are not saying nothing (REGULATIVE REGISTER)***
 7 *Roberto: <L1SP Porque es que ni me preguntáis nada, Blanca SPL1>*
 8 *Catalina: **But you can say (REGULATIVE REGISTER)***
 9 *Roberto: **I can say one (REGULATIVE REGISTER)***
 10 *Blanca: **Is because... you don't know even what we are talking about***
 11 ***(REGULATIVE REGISTER)***

Extract 6.19: Clila8 using the *regulative register* in the STA.

This example shows how Blanca (lines 2, 5-6 and 10) and Catalina (line 8) are using the *regulative* register to make Roberto realize his lack of participation and call him into taking a more active part in the activity..

Extract 6.20 shows a CLIL group in the PSA using *instructional* register:

- 1 *Jimena: ((turns the page)) **five** ((they all move closer to see))*
 2 ***(INSTRUCTIONAL REGISTER)***
 3 *Irene: **Let me see... this is also very difficult because this one cannot be...***
 4 ***(INSTRUCTIONAL REGISTER)***
 5 *Jimena: **Yes this one is like this** ((pointing)) **(INSTRUCTIONAL REGISTER)***
 6 *Juan: **The five (INSTRUCTIONAL REGISTER)***
 7 *Irene: **No, is getting lowest, is getting lowest (INSTRUCTIONAL***
 8 ***REGISTER)***
 9 *Jimena: **No is four (INSTRUCTIONAL REGISTER)***
 10 *Juan: **Why not five? (INSTRUCTIONAL REGISTER)***

- 11 Irene: **No is very low, you see... the four is better** ((she writes and Jimena
 12 passes the page)) **(INSTRUCTIONAL REGISTER)**

Extract 6.20: Clila2 using the *instructional register* in the PSA.

In this example, all three group members are engaged in discussing the items of the problem the group is working on in the PSA.

Table 6.16 below shows the results regarding the CDFs (*facts, evaluations and explanations*) in *initiating* moves. CLIL students tend to initiate mostly by *giving facts* (54.35%), closely followed by *giving evaluations* (39.57%). The use of *giving explanation* is minimal (6.09%). *Demands* show the same tendency: first go *facts* (53.79%), followed by *evaluations* (28.41%). *Explanations* are also used to a certain extent (17.80%). We must conclude here that in *initiations*, *facts* are the preferred option, both when *giving* and *demanding* information. *Evaluations* are more frequently used in the *giving* moves whereas *explanations* are the least used type of moves but, when used, they are preferred in the form of *demands*.

Feature	N	Percent
GIVE-INFO-TYPE		
Give-fact	250	54.35%
Give-evaluation	182	39.57%
Give-explanation	28	6.09%
DEMAND-INFO-TYPE		
Demand-fact	142	53.79%
Demand-evaluation	75	28.41%
Demand-explanation	47	17.80%

Table 6.16: Facts, evaluations and explanations in initiating moves used in the two group activities in the CLIL classroom.

In the discourse layer, in section 6.2.1.1 extracts 6.1 and 6.2 already illustrated the cases when CLIL students used *giving* and *demanding information* moves referring to *facts*. The examples of these types of moves in CLIL are frequent. As stated in the

discourse layer, *demanding facts* is frequently used as a metalinguistic inquiry in the STA:

- 1 *Jorge: Okay ((he finishes writing and reads the next page)) name three*
 2 *vertebrates and three invertebrates and their main characteristics...((finishes*
 3 *reading))*
 4 *Eva: **What is inver..? (DEMANDING FACTS)***
 5 *Jorge: They don't have a backbone.. ((Eva and Raúl laugh)) they don't have a*
 6 *backbone...*
 7 *Raúl: Yes...((continues laughing)).. okay*

Extract 6.21: Clilb4 *demanding facts* in the STA.

In this extract, Eva seems not to remember the definition of a concept used in the prompt (line 4), and Jorge reminds her (line 5). In the discourse layer it was suggested that the use of a questions in the prompt might trigger reformulated demands (see comments on extract 6.11 in section 6.2.2.2). These content demands could be related to a concept (as in extract 6.21), in which case they would be *demanding facts* moves, or to a reason, in which case they would be *demanding explanations* moves, as illustrated in extract 6.22 below.

- 1 *Alicia: what? # the.. ehmm*
 2 *Lara: They...((while writing)) have sharped teeth...*
 3 *Alicia: # ((Lara keeps writing))...*
 4 *Saúl: No! No, why, **why is sharped teeth? (DEMAND EXPLANATION)***
 5 *Alicia: Because is...*

Extract 6.22: Clila3 initiating *demanding explanation* in the STA.

In this extract, Saúl (line 4) *demands explanation* because the prompt question also asks for it, and he is reminding Alicia and Lara that they must give reasons for their statement by reformulating the question in the prompt.

On the contrary, in the PSA, , and as also found in the discourse layer, the first initiation move tended to be *giving facts* since the stimulus of the item was already a clearly stated problem in itself. Due to the fact that the booklet with problems

showed an incomplete picture and required students to complete the pattern by choosing an option from 6 or 8 available (for further details see Chapter 4, section 4.3.2.2), this activity can be seen as promoting the use of *giving facts* as the answer to the items, that is, the options are answered in the form of facts and neither reasons nor opinions are demanded. See extract 6.23 for an example:

- 1 Lara: *One moment ((she turns back the page))... yes okay*
 2 Dani: ***This one (GIVING FACTS)***
 3 Guille: *This, this one*
 4 Lara: *This*
 5 Guille: *No, no, no, no, no, no, no.. is this*
 6 Dani: *Yes, is this.. is this.. is... is this*

Extract 6.23: Clilb3 *giving facts* in the PSA

In extract 6.23, Dani uses a *giving fact* move (line 2) - “Is this one” - as the answer to the item in question of the problem the group is trying to solve.,

However, when a student was involved in the question or item, this could motivate an initiation in the form of *evaluation*. In fact, *giving evaluations* (which was more frequent than *demanding evaluations*) was used by CLIL students as a way of expressing an opinion in initiations, mostly referring to the level of difficulty of the item the group was dealing with at the time, as, for example, in extract 6.24.

- 1 Dani: *%X% I am finished*
 2 Guille: ***I am completely sure, is this... (GIVING EVALUATION)***
 3 Lara: *This, is this one*
 4 Guille: *No! %X%! ((teacher approaches him))*

Extract 6.24: Clilb3 initiating *giving an evaluation* in the PSA

Table 6.17 shows the results regarding the CDFs (*facts, evaluations and explanations*) in *sustaining* moves. Taking into account that the CLIL students' participation in *supporting* and *confronting* moves within the *prolong-prior* move category is almost equal (47.51% vs 40.39%), within *prolong*, the results show that

explanations are the most commonly used functions (53.74%), followed by *facts* (33.81%) and finally *evaluations* (12.46%).

Feature	N	Percent
PROLONG-TYPE		
Prolong-fact	190	33.81%
Prolong-evaluation	70	12.46%
Prolong-explanation	302	53.74%
PRIOR_MOVE		
Prolong-support	267	47.51%
Prolong-confront	227	40.39%
Prolong-other	68	12.10%
SUPPORT-TYPE		
Su-fact	883	39.63%
Su-evaluation	265	11.89%
Su-explanation	397	17.82%
Su-agree	683	30.66%
CONFRONT-TYPE		
Co-fact	178	22.88%
Co-evaluation	104	13.37%
Co-explanation	162	20.82%
Co-disagree	334	42.93%

Table 6.17: Facts, evaluations and explanations in sustaining moves used in the two group activities in the CLIL classroom

In the *responses* category, *support* and *confront* show slightly different results. Apart from facts, being the most frequently used type of *supporting* move (39.63%), the difference also affects the use of *agree* and *disagree*. *Disagree* is the most frequent move used in *confronting* moves (42.93%) while *agree* in *supporting* moves is the second most frequent (30.66%), after *facts*. These two moves can be comprised by a mere acknowledgement or opposition or could be accompanied by *prolonging* moves.

When *agree* and *disagree* were followed by *prolonging* moves they revealed vivid discussions where each student justified their different opinion, as is the case in extract 6.25.

- 1 Alicia: *So... this is... I think is this because.*
 2 Lara: *No... No*
 3 Alicia: *Yes, it's this*
 4 Lara: **No because look, here is open and here isn't (DISAGREE-PROLONG EXPLANATION)**
 5 Saúl: *But look here, is.. is the two, the two*
 6 Alicia: **No, this is open, this is open (DISAGREE-PROLONG EXPLANATION)**
 7 Saúl: *and this...*
 8 Alicia: **Yes... And this is so thin... two lines, this** ((Lara looks at the picture carefully)) **..This is come like this... yes, yes.. I think yes (AGREE-PROLONG EXPLANATION)**
 9 Saúl: *This one?*
 10 Alicia: *Yes, this one ...*

Extract 6.25: Clila3 using *explanations* in PSA.

As mentioned before, the most frequent use of *prolong*-type move was *prolong-explanation*. In extract 6.25 above, Lara (line 4) and Alicia (line 7) introduce their chosen options first by *disagreeing* and then by justifying with a *prolonging* move that explains their position. Later (lines 9-10), Alicia uses a similar combination of moves to justify her *agreeing* with Saúl. It is frequent to find examples of students justifying a negative answer, especially after a strong disagreement. It is a resource to convince the counterpart that they are wrong. Extract 6.26 shows an example of a *confronting prolong* where *prolong-explanation* is used:

- 1 Lara: *plants don't eat people; Alicia*
 2 Alicia: *carnivorous...*
 3 Lara: *[Noooo!]*
 4 Saúl: *[[Nooo]]*
 5 Alicia: *A carnivore one*

6 Lara: *No, a carnivorous plant no,.. Because,.. you are not going to buy a*
 7 *carnivorous person eating plant...(DISAGREE-PROLONG-*
 8 **EXPLANATION-CONFRONTING PROLONG)**

Extract 6.26: Clila3 using *explanations* in STA.

In extract 6.26, after Alicia's insistence on the idea of a carnivorous plant (lines 2 and 5) and after two moves of bold disagreement by Lara and Saúl (lines 3 and 4) and Alicia not backing up, Lara tries to persuade Alicia by justifying the "silliness" of her idea (lines 6 and 7).

In the analysed CLIL data, on some occasions, *agreeing* or *disagreeing* moves were not be followed by any justification whereas on others they were followed by *prolong-support* or *prolong-confront* moves. If we were to assume that all *prolong-support* moves complement an *agreeing* move and all *prolong-confront* moves complement a *disagreeing* move, drawing on the results shown in Table 6.15 above, there is a difference of 416 instances in *agreeing* moves and 107 instances in *disagreeing* moves that would not be followed by *prolong*. This means that 60.9% of the total *agreeing* moves would be bare agreements and 32.03% of the total *disagreeing* moves would be bare disagreements, i.e. not followed by *prolonging* moves. The rest, 39.1% of the total *agreeing* moves and 67.97% of the total *disagreeing* moves would be followed by *facts*, *explanations* or *evaluations* through a *prolonging* move. It is, therefore, worth noticing the fact that there are more *agreeing* moves left without justification than *disagreeing* moves in the CLIL groups.

An example of a bare agreement is shown in extract 6.27 below.

1 Raúl: *But here?*
 2 Jorge: *No, but the, the.. like this is...*
 3 Raúl: *Or this*
 4 Jorge: *I think is this one*
 5 Raúl **yes, me too (AGREE)**

Extract 6.27: Clilb4 using *agree* in the PSA.

In the extract 6.27, Jorge puts forward an explanation (line 2) and makes a suggestion stating his opinion (line 3) to which Raúl agrees in the form of a *supporting* response (line 5).

As shown in Table 6.15 above, regarding the knowledge expressed in *supporting* moves, results indicate that CLIL students use *facts* as their first option (39.63%), then *agreeing* moves (30.66%), then *explanations* (17.82%) and lastly *evaluations* (11.89%). Regarding *confronting* moves, however, *disagree* is the most frequent one (42.93%), it is followed by *facts* (22.88%) and closely followed by *explanations* (20.82%) and then *evaluations* (13.37%). As we mentioned before, the high percentage of *facts* could be connected to students' attention to stating the preferred option in the PSA, as illustrated in extract 6.28 below.

- 1 Catalina: *We put it %X%*
- 2 Blanca: *No, is circle, circle, circle... and **this.. this...** (SUPPORT-FACT)*
- 3 Catalina: **This** (SUPPORT-FACT)
- 4 Blanca: **This** (SUPPORT-FACT)
- 5 Roberto: *<L1SP vosotras creeís? SPL1>...This*
- 6 Blanca: *Yes is this one*
- 7 Catalina: *Yes because is this*

Extract 6.28: Clila8 using facts to support in PSA.

In extract 6.28, Blanca (lines 2 and 4) and Catalina (line 3) are supporting each other merely by pointing at what they think is the correct option.

In the STA, *facts* also occur often when students are making a content-related statement. In extract 6.29 Lara is correcting Saúl (line 3) in what she thinks is a misinterpretation of the prompt's question (line 4).

- 1 Saúl: *[Because the houses of the birds, the houses of the birds]*
- 2 Alicia: *[[Yes..]]*
- 3 Saúl: *The houses of the birds are in trees*
- 4 Lara: **But they say mountains, no trees** (CONFRONT-FACT)
- 5 Saúl: *Mountains?*

6 *Lara: High mountains*

Extract 6.29: Clila3 using *facts* to *confront* in STA.

In general, we can conclude that the preferred option used by CLIL students in both activities are *facts*. The second option when *initiating* are *evaluations* whereas when *responding* and *prolonging*, the preferred options are *explanations*. It also appears that *explanations* are mostly used when *confronting* or *disagreeing*.

6.3.1.2 L1 groups

In this section, the total results obtained in the knowledge layer in both activities in the L1 group will be presented. Following the pattern for the CLIL data, results for the L1 data will also be presented both quantitatively and qualitatively, starting with the distribution of registers. Table 6.18 below presents the use of *registers* in the two group activities in the L1 classroom.

Feature	N	Percent
REGISTER		
Instructional	5217	72.74%
Regulative	1501	20.93%
Social_talk	454	6.33%

Table 6.18: Registers used in the two group activities in the L1 classroom.

The first column, which shows the frequency and distribution of *instructional* and *regulative* registers and of *social talk*, presents similar results to those found in the CLIL group (see Table 6.15 in section 6.3.1.1). Most of the talk is also focused on the task: either for organizational aspects through *regulative* register (20.93%) or content aspects by discussing the topic at hand through *instructional* register (72.74%). *Social talk* is used in very few occasions (6.33%) in the L1 class, although it is more frequent than in the CLIL class (2.79 %). This difference will be addressed in the comparative section.

Some examples of students' participation in different registers are given below. As shown in extract 6.30, the *regulative* register is used by the L1 students to organize the activity and, in that way, to improve the efficiency of the task.

- 1 *Inés: Bueno, entonces... tenemos todos que tener acuerdos, vale?...*
 2 **(REGULATIVE REGISTER)**
 3 *Ben: A ver, mira, cabras montesas,*
 4 *Inés: Calla, mira, tenemos que tener acuerdos, vale? no nos podemos*
 5 *pelear, tenemos que %x%, si tenemos algún problema pues pensamos y*
 6 *miramos, vale? A ver cuál es mejor y cuál es más %X% no tenemos que*
 7 *tener %X% también tenemos que tener en cuenta que también tiene que*
 8 *.. que también tiene que estar en el campo... (REGULATIVE REGISTER)*
 9 *Ben: Hombre, no va a ser un tractor.. bueno, esos están en el campo...*
 10 *Inés: ((Inés nods affirmatively)) Bueno, escribe ((to Lorenzo)) (REGULATIVE*
 11 **REGISTER)**

Extract 6.30: L1b5 using the *regulative* register in the STA.

In extract 6.30, , Inés is organising the group (lines 1 and 4-8), most probably, repeating the instructions given by the teacher at that time or in previous group work activities. She is concerned with guaranteeing efficient group work at the beginning of a joint activity. In line 9, Ben makes a comment categorized as *social talk* (underlined in order not to confuse it with the *regulative* register) as it is neither content-related nor concerned with the task organisation. However, Inés (line 12) uses the *regulative* register again rapidly, to get her peers to focus back on task.

As indicated above, the most common register is the *instructional* register. The linguistic choices that deal with the topic at hand are the ones mostly used. In extract 6.31, students in the PSA are discussing about the possible options to solve the matrix problem they are dealing with.

- 1 *Diego: Este ((also pointing at the one Juan is pointing at))*
 2 **(INSTRUCTIONAL REGISTER)**
 3 *María: ¿El uno? (INSTRUCTIONAL REGISTER)*

- 4 *Juan: Sí, el uno* ((*María writes and they turn the page*)) **(INSTRUCTIONAL**
 5 **REGISTER)**
 6 *María: Tiene que ser, una flor, una rosa y circular ...* **(INSTRUCTIONAL**
 7 **REGISTER)**
 8 *Juan: Esta, el dos* **(INSTRUCTIONAL REGISTER)**
 9 *María: El dos* ((*she writes and they turn the page*)) ... *dos de D10* ((*she turns*
 10 *the page*))... ... **(INSTRUCTIONAL REGISTER)**

Extract 6.31: L1a3 using the instructional register in the PSA.

In Table 6.19, the results on the use of the *initiating* moves have shown that L1 students tend to *initiate* and *give information* primarily through *facts* (75.61%). In comparison, the use of *giving-evaluations* (14.86%) and *giving-explanations* is minimal (9.53%). *Demands* show the same preference for *facts* (47.44%); however, the choice of this option is not so pronounced as in *giving information*. *Evaluations* are a strong second option (32.37%), followed by *explanations* (20.19%). We must conclude here that, in *initiations*, *facts* are the preferred option specially in *giving information*. *Evaluations* are the second option, and are more frequently used in the form of *demanding*, and *explanations* are used less frequently, in fact, much less when *giving information* format (9.53%) than when *demanding* it (20.19%).

Feature	N	Percent
GIVE-INFO-TYPE		
Give-fact	341	75.61%
Give-evaluation	67	14.86%
Give-explanation	43	9.53%
DEMAND-INFO-TYPE		
Demand-fact	148	47.44%
Demand-evaluation	101	32.37%
Demand-explanation	63	20.19%

Table 6.19: Facts, evaluations and explanations in initiating moves used in the two group activities in the L1 classroom

As in the CLIL group, the PSA was found to promote numerous situations for *initiating* by *giving facts*, as a way for the students to express their preferred option in this activity (see extract 6.32 below).

- 1 *María: Esta, cinco ((she turns to write and then they turn the page))...*
 2 *Juan: **Es este... cuatro** ((Diego also points)) **(GIVE-FACT)***
 3 *María: No, es que tiene que ser un cuadrado, así...*
 4 *Juan: Sí*
 5 *Diego: seis ((she writes and then turns the page))*
 6 *Juan: **Este (GIVE-FACT)***
 7 *Diego: Esta, este*
 8 *Juan: no, este ya está*
 9 *María: Este, la cuatro*

Extract 6.32: L1a3 *giving facts* to initiate turns in the PSA.

Every time the page is turned (lines 1 and 5), a new item appears for students. As the type of activity has repetitive items in the form of problems, there is no need to state new question every time, and the first initiation tends to be *giving-facts*, which function as possible solutions proposed for the problem (lines 2 and 6).

As stated and shown previously, in the STA the presence of *demanding facts* as *initiating* move is prominent and can frequently be connected to reformulating part of the prompt's question (e.g. extracts 6.10, 6.22). Examples can however be found also of *giving information*, and the type of information given depends on the requirements of the question in the prompt.

- 1 *Carol: ((reads ahead of Lucía)) ¿Creeís que es verdad? Por qué? Razonad*
 2 *vuestras respuestas... a ver, la primera pregunta ((reading)) ¿Por qué creeís*
 3 *que lo piensan?.. **Porque algunas plantas..te.. te producen enfermedades***
 4 ***(GIVE-EXPLANATION)***
 5 *Juan: Y también.. y tam,bién..hay algunas plantas que también son %X% y*
 6 *cuando te %X% veneno*
 7 *Lucía: ¿Esas son plantas venenosas, no?*
 8 *Juan: Claro!... Yo en la playa ví una planta venenosa.. venenosa...*

Extract 6.33: L1b2 *giving explanations* to initiate turns in the STA.

In extract 6.33, Carol initiates the turn (line 3) by giving an explanation. She uses this move because the prompt question demands an explanation. The STA itself promotes the use of facts, explanations and evaluations depending on the question under discussion in the prompt, and whether it demands facts, opinions or reasons from the students.

When *initiating* through a *demanding* move, *evaluations* are the second most frequent move and when used, these *demands* are mostly asking for opinions. In extract 6.34 some *social talk* has interfered with the conversation and the *evaluating demand* that follows is used to get the students back into the *instructional* register.

- 1 Carol: Aullar.. vale, qué más?
- 2 Lucía: Por que crecen, porque crecen, porque crecen en la naturaleza?.
- 3 ((reading))... **¿Tú qué crees?** ((to Juan))... qué asco! (**DEMAND-**
- 4 **EVALUATION**)
- 5 Carol: **Ese pelo es demasiado corto para que sea mio, mira** ((takes a bit of
- 6 her hair and shows it to Lucia)) (**SOCIAL TALK**)
- 7 Juan: **¿Qué tipo de planta creéis que ponemos? ¿la carnívora?** (**DEMAND-**
- 8 **EVALUATION**)

Extract 6.34: L1b2 giving evaluations to initiate turns in the STA.

Table 6.20 with the results on *sustaining* moves in L1 groups shows a different distribution in some categories as compared to that of *initiations*.

Feature	N	Percent
PROLONG-TYPE		
Prolong-fact	277	36.40%
Prolong-evaluation	69	9.07%
Prolong-explanation	415	54.53%
PRIOR_MOVE		
Prolong-support	336	44.15%
Prolong-confront	337	44.28%

Feature	N	Percent
Prolong-other	88	11.56%
SUPPORT-TYPE		
Su-fact	1067	40.43%
Su-evaluation	152	5.76%
Su-explanation	621	23.53%
Su-agree	799	30.28%
CONFRONT-TYPE		
Co-fact	150	17.06%
Co-evaluation	86	9.78%
Co-explanation	180	20.48%
Co-disagree	463	52.67%

Table 6.20: Facts, evaluations and explanations in sustaining moves used in the two group activities in the L1 classroom

Within the *continuing prolong*, the use of *supporting* (44.15%) and *confronting* (44.28%) moves is equal. Within *prolong*, *explanations* are the most frequent moves (54.53%), followed by *facts* (36.40%) and finally *evaluations*, with a very infrequent use (9.07%). This distribution seems very similar to the one found in the CLIL class (see Table 6.17, section 6.3.1.1).

In the *responses* category, *support* and *confront* show slightly different results. *Disagree* is the most frequent move used to *confront* (52.67%) while *agree* is a very common *supporting* move, being, after *facts*, the second most frequent move with 30.28%. Assuming, as in the case of the CLIL data, that *prolong-support* would follow *agreeing* moves and *prolong-confront* – *disagreeing* moves, there would be 463 *agreeing* moves not followed by *prolong* (57.95% out of total *agreeing* moves) and 126 in the case of *disagreeing* moves (27.21% out of total *disagreeing* moves). This means that the rest, 42.05% out of the total *agreeing* moves and 72.79% out of the total *disagreeing* moves, would be followed by *facts*, *explanations* or *evaluations* by means of a *prolonging* move. This is a similar result to the one obtained in the CLIL data. That is, there are more *agreeing moves* not followed by *facts*, *explanations* or

evaluations than *disagreeing* moves. Extract 6.35 shows the use of a *disagreeing* move followed by *prolonging- explanation*, when a student has to defend his response against another one proposed before.

- 1 *María: Qué partes del cuerpo tienen que le ayude a hacerlo? ((reading))*
 2 *Juan: El bronquio!*
 3 *Diego: No!... La... la aleta.. la aleta para poder salir! ah!... **los delfines saltan***
 4 ***porque tienen la.. una aleta muy potente (DISAGREE-FACT-PROLONG-***
 5 ***EXPLANATION)***
 6 *María: Vale, los delfines eso sí*

Extract 6.35: L1a3 using *prolong-explanation* in the STA.

María has read the prompt question (line 1) and Diego and Juan try to respond. Diego's response disagrees with Juan's (line 2) and, therefore, he *prolongs* with an *explanation* to convince the others of using his reasoning.

- Diego: Hay más caducas que perennes.. ponlo! ((she writes)).. hay.. más*
María: No, porque no hay diferencia... (DISAGREE AND PROLONG
EXPLANATION)
Diego: Sí (AGREE)
María: Sí, vale, sí ((she continues writing)) (AGREE)
Diego: Recuerda que te están viendo a través de una cámara... ((Juan makes
silly faces)) Tío, me estoy durmiendo
Juan: Yo también ((makes a noise))

Extract 6.36: L1a3 using *disagree* with *prolong* and *agree* without *prolong* in the STA.

Extract 6.36 shows María justifying her *confronting* statement (*disagree* and then *prolong-explanation* in lines 2 and 3). The extract also shows the use of *agree* (underlined) by several other members of her group which is not followed by *prolong* (lines 4 and 5). It seems that opposition needs to be justified while *agreeing* does not necessarily.

As stated above, the most frequent use of *prolonging* were *explanations* that followed *disagree*. However, some examples were found of other types of *prolonging*, such as *evaluation*, as illustrated in extract 6.37 below.

- 1 *María: La seis, Diego?*
 2 *Diego: ((points at another one)) esta... la uno*
 3 *Juan: Si?*
 4 *Diego: Sí ((María turns to write and he turns the page))*
 5 *Juan: espera, espera, espera que creo que me he equivocado*
 6 *María: No, está bien porque %X% (DISAGREE AND PROLONG-*
 7 *EVALUATION; PROLONG-EXPLANATION)*
 8 *Juan: ah, vale ((they turn the page again))... esta.. ((pointing))*

Extract 6.37: L1a3 using *disagree* and *prolong-evaluation* in the PSA.

In extract 6.37, in her second turn (line 6), María uses both *prolonging-evaluation* and *prolonging-explanation* to ratify Juan's previous statement as correct. In this way, María performs the justification that Juan is lacking to justify his option.

Moving to *supporting responses*, Table 6.18 above shows that these seem to be more frequent in general compared to confront. The results show that L1 students use *facts* as first option (40.43%), then *agreeing* moves (30.28%), then *explanations* (23.53%) and lastly *evaluations* (5.76%). In *confronting* responses, however, and as in CLIL groups, *disagree* is the first option (52.67%), followed by *explanations* (20.48%), closely followed by *facts* (17.06%) and, finally, *evaluations* (9.78%).

In the STA context, *demanding facts* are frequently produced through the questions in the prompt. In extract 6.38, students are asked to name animals that are adapted to the mountain environment. This type of question triggers *supporting* answers in the form of *facts*, in order to answer the question.

- 1 *Ana: Vale, pues, a ver, otro animal*
 2 *Pedro: Girafa (SUPPORT-FACT)*

- 3 *Sonia: Pájaro (SUPPORT-FACT)*
- 4 *Ana: Que haya en las montañas (SUPPORT-FACT)*
- 5 *Sonia: Los pájaros... ((Ana is staring at her)) pájaros hay en las montañas..*
 6 *((they all laugh and Ana writes))... ¿Sabes que te ha grabado, no?*
 7 **(SUPPORT-FACT)**
- 8 *Ana: Pájaros... ¿Y ahora? (SUPPORT-FACT)*
- 9 *Sonia: Pon olivos, (SUPPORT-FACT)*
- 10 *Ana: Eh?*
- 11 *Sonia: Olivos hay en la montaña... pon olivos y pinos (SUPPORT-FACT)*
- 12

Extract 6.38: L1b1 using *facts* as *supporting* moves in the STA.

Explanations are common in answers to questions in the prompt that demand reasons, as, for example, in extract 6.39 below.

- 1 *Lorenzo: Los pinos pelados... los pinos pelados son unos pinos*
- 2 *Inés: No me interesa*
- 3 *Lorenzo: Sí te interesa... Los pinos pelados son unos pinos, que no tienen hoja*
 4 ***porque ahí no pueden crecer porque siempre hay mucho, mucho***
 5 **(PROLONG-EXPLANATION)**
- 6 *Inés: Porque hay mucho viento (SUPPORT-EXPLANATION)*
- 7 *Lorenzo: Hay mucho viento entonces por eso, por eso se les vuelan las*
 8 ***hojas y no pueden crecer esas hojas al... (SUPPORT-EXPLANATION)***
- 9 *Inés: ¿Te parece bien eso? ¿Ponerlo?*
- 10 *Ben: Sí*

Extract 6.39: L1b4 using *explanations* in *responsive* moves in the STA.

In this extract, Inés and Lorenzo (lines 4 to 8) are building together a justification elicited in a question in the prompt. Each of them tries to build on the previous reason given by the other, until they complete the explanation.

The use of *explanations* is also frequent as a *confronting response* move. As stated before, it is frequent to find students producing a *prolong-explanation* move after a *disagreeing* move, since a negative response needs justification. Thus, in the case of *confronting-explanation*, the same reasoning can be applied. *Confronting-explanation* is a way of justifying a *confronting* move where the disagreement is clear. An example of this can be found in extract 6.40:

- 1 Gerardo: *Es esto, esto es igual que esto, tiene que ser*
 2 Juan: *Mira*
 3 Elena: *¡Es la uno!*
 4 Gerardo: *No es la cinco!*
 5 Elena: ***No ves que esto está así inclinado, y esto está al revés***
 6 **(CONFRONT-EXPLANATION)**
 7 Juan: ***Porque esto es un lado!... mira este... no, espera (CONFRONT-***
 8 ***EXPLANATION)***
 9 Gerardo: *Es esta mira*
 10 Elena: *Es esta*
 11 Juan: *No, a ver ...*
 12 Gerardo: *Es la cinco seguramente, mira **es así, y así** ((doing it with his*
 13 *finger)) **y así... así, así y así, entonces es igual que esta, tiene que ser***
 14 ***esta.. no es... mira... esto es así y esto es así revés (CONFRONT-***
 15 ***EXPLANATION)***
 16 Elena: ***Tiene que ser la uno (SUPPORT-FACT)***
 17 Juan: ***Es la uno (AGREE)***

Extract 6.40: L1a4 using *explanations* in *confronting responsive* moves in the PSA.

In extract 6.40, Juan, Elena and Gerardo are looking for the correct option within an item in the PSA. After a few turns stating their options and not *agreeing*, they start *confronting* options through *explanations* that justify their opposition to the other student's option (Elena in lines 5-6, Juan in lines 7-8 and Gerardo in lines 12-15). Later on, when an answer seems to have been found, *support* is given by simply stating the option (line 16) and agreement is reached without any need for a further

justification (line 17). This confirms what was pointed out before, *disagreement* and opposition in the form of *confront* seem to foster more *explanations*.

We can conclude that in the L1 group, in general, the preferred options used by students in both activities differ depending on the type of move. In *initiating* moves students tend to use *facts* and *evaluations*. In turn, in *sustaining* moves there is a stronger preference for *explanations*, in both *response* and *prolonging* moves. The presence of *disagreeing* moves in *confronting* responses and *facts* in *supporting* responses is also worth mentioning. Finally, as in the CLIL groups, *disagreeing* moves tend to be more frequently followed by *prolonging* moves than *agreement* moves.

6.3.1.3 Summary of descriptive results

The descriptive results obtained in the knowledge layer on the CLIL data and presented in this section illustrate CLIL students' high reliance on *facts* in all *initiating* moves (*giving* and *demanding*) and in the majority of *prolonging* and *responding* moves. The relevance of the type of discourse move to make choices has also been shown. Thus, when *initiating* their discourse, CLIL students also tend to use *evaluations* while they often prefer to end it or *sustain* it by *giving explanations*. They generally follow their *disagreeing* moves with *explanations*, in this way justifying their *confrontations*. When *supporting* a previous statement, they tend to do it with *facts*. CLIL students have also been seen to *support* others through a bare agreement.

The descriptive results on the L1 data picture L1 students' use of knowledge as strongly centred in *facts* and *evaluations* when *initiating* and in *explanations* as a common ground in *sustaining* moves. *Disagreeing confronting* moves have shown to be mostly linked to some kind of justification by *explanations* most of the times. Generally, L1 students *support* their ideas using *facts* and *confront* other students' ideas by giving *explanations*.

The next section focuses on the comparisons across the groups (CLIL and L1) and across the activities (STA and PSA).

6.3.2 Part 2: Comparative results

As in the discourse layer, in this second part of the presentation of results obtained in the knowledge layer, comparisons between the CLIL and L1 classes and the two activities, science topic group discussion and problem-solving activity, will be made. As in the previous section, this part will present the results obtained both quantitatively and qualitatively for each comparison (group, CLIL and L1; and activity, STA and PSA).

To obtain the comparative quantitative results the same statistical analysis of the data corpus as in the descriptive part has been used. The comparison of two different databases, CLIL and L1 and STA and PSA, was done using the UAM Corpus Tool. As in the discourse layer, another, third, comparison, including a combination of the two variables (groups and activities), was added to facilitate the interpretation of the results. All comparisons include the calculation of Chi-square and, therefore, provide information about the statistical significance of the difference between the datasets. As in the discourse layer, first, the comparison across groups will be presented.

6.3.2.1 Comparison across groups: CLIL versus L1

Tables 6.19, 6.20 and 6.21 below present the comparative results on *registers* and *CDFs* found in the CLIL and L1 groups. The first two columns show the frequency and distribution of the different *registers* and *CDFs* in the CLIL class and the third and fourth in the L1 class. The fifth column shows the Chi-square value for a $p=0.05$ (95% confidence level) with one degree of freedom. The last column indicates if the difference across the CLIL and L1 groups is statistically significant. As mentioned before, and although there are three possible degrees of statistical difference, in this study we have considered significant or very significant differences only, except when a slight significance might help explain other more significant results. In all

Tables in this section, results are presented locally, considering each category with a total of 100%, as it has been explained earlier in section 6.3.1.

In Table 6.12 we can see the distribution of the *registers* used in the two group activities in the CLIL and L1 classrooms. There is a very significant difference in the use of all *registers* between the CLIL and the L1 groups. These differences are caused by the high use of *social talk* in the L1 groups, which has a significantly high Chi-square value (90.63). Results also show that the presence of *social talk* is significantly higher in L1 groups than in CLIL groups (6.33% vs 2.79%). In turn, CLIL students use the *instructional* and *regulative* register significantly more than L1 students. With these results it appears that CLIL students focus significantly better on the given task than their L1 peers.

Feature	CLIL		L1		Chisqu	Signif.
	N	Percent	N	Percent		
REGISTER	N=5978		N=7172			
Instructional	4457	74.56%	5217	72.74%	5.53	+++
Regulative	1354	22.65%	1501	20.93%	5.68	+++
Social_talk	167	2.79%	454	6.33%	90.63	+++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.21: Registers used in the two group activities in the CLIL and L1 classroom

Some examples of *social talk* in the L1 are mere short distractions from the task at hand, but there is usually a student who brings the group back in focus. This is the case in extract 6.41 below, where Elena (line 7) switches from *social talk* to *regulative register* (underlined) to get her peers to focus on the task again.

- 1 Gerardo: La dos ((she writes and Gerardo turns the page))... Fácil, esta
- 2 ((pointing)), esta, tres, tres, esto cuadrado
- 3 Juan: Sí porque aquí falta una
- 4 Gerardo: Esto es, esto así, es esta, la tres ((she writes))
- 5 Juan: **Como mola si lo miras desde aquí, esta (SOCIAL TALK)**
- 6 Gerardo: **A ver ((the three look)) ah, es verdad! (SOCIAL TALK)**

- 7 *Elena: Ja, mola, vamos a pasar a la D. venga... ¿llevamos ya bastantes,*
 8 *no? (SOCIAL TALK - REGULATIVE REGISTER)*

Extract 6.41: L1b1 using *social talk* in the PSA.

However, other extracts from the L1 data corpus show how *social talk* in the L1 can also interrupt the activity for a longer period of time, as in extract 6.42 below. Juan's distraction (line 2) drives Diego along (lines 3 and 6), creating an extended exchange of social talk between the two students until María (underlined; line 8) helps them to focus and get back into the activity.

- 1 *María. No, pero... a ver otra... vamos a ver...*
 2 *Juan: King kong %X% (SOCIAL TALK)*
 3 *Diego: ¿Dónde está? (SOCIAL TALK)*
 4 *Juan: Ahí lo pone mira ((pointing to the window)) King kong . mira pone*
 5 *king kong... (SOCIAL TALK)*
 6 *Diego: Pone rincón hijo (SOCIAL TALK)*
 7 *Juan: Ah, pues yo creí que era eso (SOCIAL TALK)*
 8 *María: Claro, a ver... Dejamos eso de la otra clase (SOCIAL TALK -*
 9 *REGULATIVE REGISTER)*
 10 *Diego: Vale.. eh..la caduca*

Extract 6.42: L1a4 using *social talk* in the STA.

In extract 6.42, once more the *regulative* register (line 8; María) is used to switch back to the activity. María takes the leading role in organising the group activity, thus adopting the role of the “teacher”, and brings her peers back to the task at hand and away from their distractions.

As far as *initiations* are concerned, Table 6.22 shows results in the use of *facts*, *evaluations* and *explanations* in *initiating* moves and across the two group activities in the CLIL and L1 classrooms. The table shows no significant differences in the distribution of *demand facts*, *evaluations* and *explanations* between the two groups

(CLIL and L1); in turn, results show a very significant difference in the use of *giving facts* and *evaluations* across groups. L1 students' use of *giving facts* as an *initiation* move is higher than that by CLIL students (75.61% vs 54.35%). On the other hand, in the CLIL group, the use of *giving evaluations* as initiation is significantly higher than in the L1 group (39.57% vs 14.86%).

Feature	CLIL		L1		Chisqu	Signif.
	N	Percent	N	Percent		
GIVE-INFO-TYPE	N=460		N=451			
Give-fact	250	54.35%	341	75.61%	45.18	+++
Give-evaluation	182	39.57%	67	14.86%	70.00	+++
Give-explanation	28	6.09%	43	9.53%	3.77	+
DEMAND-INFO-TYPE	N=264		N=312			
Demand-fact	142	53.79%	148	47.44%	2.31	
Demand-evaluation	75	28.41%	101	32.37%	1.06	
Demand-explanation	47	17.80%	63	20.19%	0.53	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.22: Facts, evaluations and explanations in initiating moves used in the two group activities in the CLIL and L1 groups

Giving-evaluations in *initiation* moves in the CLIL group was realised, most of the times, through the use of *I think*. In the PSA it was often used to defend a position as a matter of opinion. In extract 6.43 below, instead of expressing a mere fact (as Irene does in line 1), Jimena expresses her opinion (lines 3 and 6-7) through the use of "*I think*".

- 1 Irene: six ((Jimena turns the page))... this is, six ((they look at the next one;
- 2 Juan stands up to see better))..look well
- 3 Jimena: **I think is this here** because these are ...<L2SP rayas SPL2> **(GIVE-**
- 4 **EVALUATION)**
- 5 Irene: Yes, it has to be a line,.. Maybe is this one, this one.. is five
- 6 Jimena: Yes, is five ((Irene writes and Jimena turns the page))... Now this **one I**
- 7 **think.. (GIVE-EVALUATION)**

Extract 6.43: Clila2 using *give-evaluation* in the PSA.

Within *sustaining* moves (see Table 6.23), results show no differences in the distribution of *prolong-support* or *prolong-confront*. However, in *prolonging* moves there is a significant difference in the use of *prolong-evaluation* by CLIL students as compared to L1 students (12.46% vs 9.07%). This difference in *evaluation* by the CLIL group is constant in all *sustaining* moves. Both *support-evaluation* and *confront-evaluation* are significantly more frequent in the CLIL group than in the L1 group (CLIL: 11.89% and 13.37%, respectively; L1: 5.76% and 9.78%, respectively). This states a preference in the use of *evaluations* by the CLIL group.

Feature	CLIL		L1		Chisqu	Signif.
	N	Percent	N	Percent		
PROLONG-TYPE	N=562		N=761			
Prolong-fact	190	33.81%	277	36.40%	0.95	
Prolong-evaluation	70	12.46%	69	9.07%	3.95	++
Prolong-explanation	302	53.74%	415	54.53%	0.08	
PRIOR_MOVE	N=562		N=761			
Prolong-support	267	47.51%	336	44.15%	1.47	
Prolong-confront	227	40.39%	337	44.28%	2.00	
Prolong-other	68	12.10%	88	11.56%	0.09	
SUPPORT-TYPE	N=2228		N=2639			
Su-fact	883	39.63%	1067	40.43%	0.32	
Su-evaluation	265	11.89%	152	5.76%	58.03	+++
Su-explanation	397	17.82%	621	23.53%	23.84	+++
Su-agree	683	30.66%	799	30.28%	0.08	
CONFRONT-TYPE	N=778		N=879			
Co-fact	178	22.88%	150	17.06%	8.79	+++
Co-evaluation	104	13.37%	86	9.78%	5.22	++
Co-explanation	162	20.82%	180	20.48%	0.03	
Co-disagree	334	42.93%	463	52.67%	15.69	+++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.23: Facts, evaluations and explanations in sustaining moves used in the two group activities in the CLIL and L1 classroom

This a preference in the use of *evaluations* by the CLIL group, and as shown in extract 6.44 below, could be related to the use of the chunk “I think”.

- 1 *Saúl: No!... I do this, okay? ((taking the paper from her)) that I don't do*
 2 *nothing.. I do it ((he starts reading)) People think that sleeping, with a plant*
 3 *is dangerous, why do you think... they think that? Is it true? give reasons for*
 4 *your answers... why?*
 5 *Alicia: **I think is for,.. is because (GIVING-EVALUATION)***
 6 *Saúl: No!*
 7 *Alicia: Is because... is because,*
 8 *Lara: is for, is for*
 9 *Alicia: the.. because of the, because of the.. of the..*
 10 *Saúl: **I think is because of danger(GIVING-EVALUATION)***
 11 *Lara: The # they don't have your # or yours.. **I think that, I think that is not***
 12 *danger, is not dangerous, (GIVING-EVALUATION)*
 13 *Saúl: is not dangerous..*
 14 *Lara: Is not dangerous because of...*

Extract 6.44: Use of *I think* in Clila3 group in the STA.

In extract 6.44 it can be seen how the question in the prompt motivates the use of *evaluations* as it requires students to discuss about what they think (lines 2 and 3). They do it through the use of the chunk “I think” when they initiate *giving-evaluation* (line 5) and continue using the same chunk to give answers either to *support* (line 10) or *confront* (line 11) their peers’ opinions.

Regarding other types of *supporting* moves, the results in Table 6.21 above show a significant difference in the use of *explanations* by L1 students as compared to CLIL students (23.53% vs 17.82%). L1 students seem to use explanations to support their statements significantly more than CLIL students.

Extract 6.45 illustrates this tendency among L1 students:

- 1 *Laura: Esperad..((continues reading)) creéis que es verdad? Por qué?*
 2 *razonad vuestras respuestas...*

- 3 *Gael: Sí porque..*
 4 *Saúl: Porque cogen el oxígeno que tienen en la habitación (SUPPORT-*
 5 *EXPLANATION)*
 6 *Gael: Por que cogen el oxí.. el oxí... oxígeno (SUPPORT-EXPLANATION)*

Extract 6.45: Use of *explanations* by L1a1 in the STA

In the STA, certain questions (as in line 1 in extract 6.45) triggered explanations (lines 4-6). However, sometimes students in the L1 groups used explanations which were not elicited by the prompt (see extract 6.46 below).

- 1 *Ana: Esí, es este ((pointing))*
 2 *Sonia: %X% ((while writing)) bueno, da igual %X%*
 3 *Pedro: porque mira,... mira! mira! Aquí (SUPPORT-EXPLANATION)*
 4 *Ana: porque aqui pones una parte, y luego aqui pones la otra*
 5 *(SUPPORT-EXPLANATION)*
 6 *Pedro: Aquí es lo mismo que aqui, aqui es lo mismo (SUPPORT-*
 7 *EXPLANATION)*
 8 *Ana: Y ya tienes la parte así ((Sonia writes and they turn the page))*
 9 *(SUPPORT-EXPLANATION)*
 10 *Sonia: Aunque si tenemos un fallo tampoco pasa nada*

Extract 6.46: Use of *explanations* by L1a1 in the PSA

Although the PSA activity did not specifically require students to give reasons for their answers, as the only had to choose the option they thought was correct, in extract 6.46 above, Ana and Pedro *agree* on the option and build together a series of *supporting responses* (lines 3-9) to convince Sonia.

As Table 6.23 shows, in *confronting* moves, CLIL students use *facts* to confront ideas significantly more than their L1 peers (22.88% vs 17.06%). In turn, L1 students use *disagree* significantly more when confronting the previous speaker's ideas than CLIL students (52.67% vs 42.93%). However, as indicated previously, when we take into

account the *prolonging confront* used by the L1 students and assume that many of them are used after *disagree*, 72.78% out of the total of *disagreeing* moves would be followed by *prolong*. This would mean that, most of the times, the *disagreeing* move used by the L1 students is explained through either *facts*, *explanations* or *evaluations*. Several examples of the frequent use of *prolong* after *disagree* have been shown in the descriptive section 6.3.1.2 (see extracts 6.35 and 6.36). These have brought into attention the fact that the students used more *prolonging* moves when showing disagreement than with agreement. As pointed out above, opposition seems to need more justification than support.

6.3.2.2 Comparison across activities: STA versus PSA

As for the discourse layer, this section first compares the two activities (STA and PSA) for each of the groups: first the CLIL group and then the L1 group. This will be followed by a four-entry comparison which considers both the activity type (STA or PSA) and the group (CLIL or L1). This comparison will show whether the difference found across activities is particular of the context examined (CLIL or L1) or is connected to the activity type itself (STA or PSA). Given the case that the same difference across activities in both groups is found, the difference would be related to the activity. However, if such difference across activities is found only in one group, this would mean that the difference is related to the context (L1 or CLIL) and not to the activity.

In table 6.24 below, results show the *registers* and *cognitive discourse functions* found in the science topic discussion activity (STA) and in the problem solving discussion activity (PSA) in the CLIL group and table 6.25 shows the same results for the L1 group. As we can see from the results presented in both tables, the different activities comprise a very different approach to knowledge, as most of the registers and CDFs differ significantly from one activity to the other. However, it is noticeable, that the differences between the STA and the PSA in the L1 group are not so strong as the ones found in the CLIL group.

Feature	CLIL STA		CLIL PSA		Chisqu	Signif.
	N	Percent	N	Percent		
REGISTER	N=1979		N=3999			
Instructional	1249	63.11%	3208	80.22%	204.24	+++
Regulative	613	30.98%	741	18.53%	117.04	+++
Social_talk	117	5.91%	50	1.25%	105.95	+++
GIVE-INFO-TYPE	N=90		N=370			
Give-fact	53	58.89%	197	53.24%	0.93	
Give-evaluation	28	31.11%	154	41.62%	3.34	+
Give-explanation	9	10.00%	19	5.14%	3.00	+
DEMAND-INFO-TYPE	N=141		N=123			
Demand-fact	95	67.38%	47	38.21%	22.48	+++
Demand-evaluation	29	20.57%	46	37.40%	9.15	+++
Demand-explanation	17	12.06%	30	24.39%	6.83	+++
PROLONG-TYPE	N=92		N=470			
Prolong-fact	41	44.57%	149	31.70%	5.69	+++
Prolong-evaluation	13	14.13%	57	12.13%	0.28	
Prolong-explanation	38	41.30%	264	56.17%	6.84	+++
PRIOR_MOVE	N=92		N=470			
Prolong-support	44	47.83%	223	47.45%	0.00	
Prolong-confront	30	32.61%	197	41.91%	2.77	+
Prolong-other	18	19.57%	50	10.64%	5.76	+++
SUPPORT-TYPE	N=662		N=1566			
Su-fact	358	54.08%	525	33.52%	82.16	+++
Su-evaluation	40	6.04%	225	14.37%	30.78	+++
Su-explanation	125	18.88%	272	17.37%	0.73	
Su-agree	139	21.00%	544	34.74%	41.33	+++
CONFRONT-TYPE	N=184		N=594			
Co-fact	49	26.63%	129	21.72%	1.92	
Co-evaluation	40	21.74%	64	10.77%	14.58	+++
Co-explanation	28	15.22%	134	22.56%	4.59	++

Feature	CLIL STA		CLIL PSA		Chisqu	Signif.
	N	Percent	N	Percent		
Co-disagree	67	36.41%	267	44.95%	4.18	++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.24: Registers and CDFs in the STA and in the PSA in the CLIL group..

Feature	L1 STA		L1 PSA		Chisqu	Signif.
	N	Percent	N	Percent		
REGISTER	N=2595		N=4577			
Instructional	1643	63.31%	3574	78.09%	182.25	+++
Regulative	641	24.70%	860	18.79%	34.97	+++
Social_talk	311	11.98%	143	3.12%	219.26	+++
GIVE-INFO-TYPE	N=78		N=373			
Give-fact	53	67.95%	288	77.21%	3.00	+
Give-evaluation	13	16.67%	54	14.48%	0.24	
Give-explanation	12	15.38%	31	8.31%	3.74	+
DEMAND-INFO-TYPE	N=196		N=116			
Demand-fact	89	45.41%	59	50.86%	0.87	
Demand-evaluation	63	32.14%	38	32.76%	0.01	
Demand-explanation	44	22.45%	19	16.38%	1.67	
PROLONG-TYPE	N=136		N=625			
Prolong-fact	60	44.12%	217	34.72%	4.26	++
Prolong-evaluation	19	13.97%	50	8.00%	4.83	++
Prolong-explanation	57	41.91%	358	57.28%	10.64	+++
PRIOR_MOVE	N=136		N=625			
Prolong-support	67	49.26%	269	43.04%	1.76	
Prolong-confront	40	29.41%	297	47.52%	14.84	+++
Prolong-other	29	21.32%	59	9.44%	15.42	+++
SUPPORT-TYPE	N=886		N=1753			
Su-fact	379	42.78%	688	39.25%	3.04	+
Su-evaluation	40	4.51%	112	6.39%	3.81	+

Feature	L1 STA		L1 PSA		Chisqu	Signif.
	N	Percent	N	Percent		
Su-explanation	199	22.46%	422	24.07%	0.85	
Su-agree	268	30.25%	531	30.29%	0.00	
CONFRONT-TYPE	N=288		N=591			
Co-fact	106	36.81%	44	7.45%	117.94	+++
Co-evaluation	37	12.85%	49	8.29%	4.55	++
Co-explanation	62	21.53%	118	19.97%	0.29	
Co-disagree	83	28.82%	380	64.30%	97.77	+++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 6.25: Registers and CDFs in the STA and in the PSA in the L1 group.

Results show a significantly higher use of the *regulative register* (organizational aspects of the task) and *social talk* in the STA than in the PSA in both the CLIL and the L1 group. Thus, in CLIL classes, regulative register is used 30.98% in the STA and 18.53% in the PSA whereas social talk is used 5.91% and 1.25%, respectively. In L1 classes, the distribution is quite similar: 24.70% in the STA and 18.79% in the PSA for regulative register and 11.98% and 3.12% for social talk. In contrast, the PSA is characterized by a significantly higher use of the *instructional register* in both groups (CLIL classes: 80.22% vs 63.11%; L1 classes: 78.09% vs 63.31%), which makes us think that the focus on the topic at hand in this activity is greater.

As already explained, both classes produce significantly more *regulative register* and *social talk* in the STA compared to the PSA, which is illustrated in extracts 6.47 and 6.48 where L1 and CLIL students use the *regulative register* in the STA.

- 1 *Andrés: No, tenemos que llegar a un acuerdo... (REGULATIVE REGISTER)*
- 2 *Guille: Pensar, hay que pensar (REGULATIVE REGISTER)*
- 3 *Celia: Primero los animales (REGULATIVE REGISTER)*
- 4 *Guille: Veinte segundos para pensar... (REGULATIVE REGISTER)*
- 5 *Andrés: Un jabalí... un jabalí*

- 6 Guille: ***Ya, ya, pero... .. ya ha pasado todo el tiempo (REGULATIVE***
 7 ***REGISTER)***
 8 Andrés: *Hierba... %X%*

Extract 6.47: L1b6 using the *regulative* register in the STA.

In extract 6.47 we can see how the members of the L1 group use the *regulative* register to organise the activity. They jointly set some rules or proceedings to help each other deal with the task and work in the group. All members of the group participate in organising the activity (lines 1-4 and 6-7). The *regulative* register here alternates with several interventions by Andrés (lines 5 and 8, underlined) who uses the *instructional* register. The *regulative* register here is helping the students focus on the task.

In extract 6.48 below, we observe how the *regulative* register is used by the CLIL students in an attempt to understand what they have to do in order to achieve the objectives of the STA. However, in this case, the alternation of the *regulative* register with the *instructional* register, does not help students focus on the task but rather results in the opposite.

- 1 Eva: *Okay, I think that... ((Nono is hitting her under the desk))* ***STOP IT!!!***
 2 *Okay I think that... if you let me finish ((Continues kicking her and*
 3 *laughing)) (REGULATIVE REGISTER)*
 4 Ana: *((to Eva)) what- what we need to put???? ((Eva tries to kick Nono's*
 5 *feet and Ana looks at her))... What we need to put? What we need to put!!!!*
 6 ***(REGULATIVE REGISTER)***
 7 Nono: *<L1SP estás destrozando la silla SPL1>*
 8 Ana: ***What we need to put, Eva ((Touching her shoulder))... what we need***
 9 ***to put?... Eva!!!! Nono Stop!!!!... What we need to put ((They kick her too))***
 10 ***...Au!!!!...What we need to put? (REGULATIVE REGISTER)***

Extract 6.48: Clilb1 using the *regulative register* in the STA.

Eva uses the *regulative* register at the beginning (lines 1-3) to control Nono who is misbehaving and distracting her and to keep track of the activity however without much success. Ana steps in trying to convince Eva to return to the activity by repeatedly asking her to finish the statement she was about to make (lines 4-6 and 8-10). However, in this case, the use of the *regulative* register does not seem to bring them back to the task.

In other cases, as in extract 6.49 below, the *regulative* register can be used in a less imperative manner, as a way of negotiating a collaborative way of working.

- 1 *Irene: There has to be a #*
 2 *Juan: ((trying to take the pen away from Jimena)) **No! Now me! Now me!***
 3 **(REGULATIVE REGISTER)**
 4 *Jimena: **No! Me!... All this and then this and this and then you are..***
 5 **(REGULATIVE REGISTER) # ((pointing at the parts of the prompt they still**
 6 *have to do))*
 7 *Irene: **Yes...Okay, we have to write two.... (REGULATIVE REGISTER)***
 8 *Juan: **It is two (REGULATIVE REGISTER)***
 9 *Irene: **The whale!***
 10 *Juan: **Put short! (REGULATIVE REGISTER)***
 11 *Irene: **It has this big mouth to catch many fishes***

Extract 6.49: Clila2 using the *regulative register* in the STA.

In extract 6.49, Irene, Juan and Jimena negotiate the order of writing turns (lines 2-8). They use the *regulative* register to organize the activity and collaborate to create equity in the writing. Later Juan also uses the *regulative register* but in a more imperative way (line 10).

When moving to *initiating*, Tables 6.22 and 6.23 above show that both groups give more *explanations* in the STA than in the PSA, although the difference in their appearance between the two activities is only slightly significant in both groups. Thus, CLIL students use 10% in the STA and 5.14% in the PSA while L1 students use

15.38% and 8.31%, respectively. In addition, there is also a slight difference which indicates a preference in the use of *giving evaluation* in the CLIL group (31.11% vs 41.62%) and a preference in *giving facts* in the L1 group (67.95% vs 77.21%), both in the PSA compared to the STA. In *demanding* moves, CLIL students prefer to use significantly more *facts* in the STA (67.38% vs 38.21%) and *evaluations* and *explanations* in the PSA (37.40% vs 20.57% and 24.39% vs 12.06%, respectively). In contrast, no significant differences are found in the use of any of the *demanding* moves (*facts, explanations* or *evaluations*) by the L1 group.

In *sustaining moves*, both CLIL and L1 students significantly favour the use of *facts* in the STA than in the PSA, which are used significantly more as *prolongs* and *supporting responses*. Thus, the use of *prolong-facts* in the CLIL groups makes a highly significant difference in L1 groups it is also statistically significant. The use of *support-fact* in CLIL groups again shows a highly significant difference whereas in L1 groups the difference is only slightly significant. In *prolonging* moves, both groups use *prolong-explanations* and *prolong-confronting* moves significantly more in the PSA than in the STA, although to a different degree. There is also a significantly higher use of *prolonging-other*, that classifies the prolonging moves that fell neither under *prolonging-support* nor under *prolonging confront*, in the STA compared to the PSA. In what refers to *responses, supporting-facts* and *confronting-evaluations* are used significantly more by both groups in the STA than in the PSA, although to a different degree. In turn, *supporting-evaluations* and *confronting-disagree*, are produced more frequently by both groups in the PSA as compared to the STA, again to a different degree.

In sum, both in the L1 and CLIL groups there are differences across activities that could be related to the type of activity itself. This is reflected in the facts that the STA favours the use of the *regulative register* and *social talk*, a slight tendency to *giving-explanations* in *initiating* moves and the use of *evaluation* to *confront* other students. In the PSA, students in both groups seem to be very focused on the topic at hand with a high use of the *instructional register*. In *sustaining* moves, students doing the PSA activity have a tendency to *confront* other students by *disagreeing* and then

using *prolonging-explanations* to give reasons for their opposition. CLIL and L1 students in the PSA also use *supporting-evaluations* more frequently than in the STA.

However, there are several differences that have been found across activities but only present in one of the two groups (CLIL or L1). Thus, the CLIL group showed a very significant difference in their more frequent use of *facts* in the STA as compared to the PSA (in *demanding*, a Chi-square value of 22.48, in *prolonging* a value of 5.69 and in *supporting* moves a value of 82.16), which was not so strongly found in the L1 group, where differences in *prolonging* and *supporting facts* were not so highly significant (Chi-square values of 4.26 and 3.04, respectively). In addition, only the CLIL group showed a significantly higher use of *supporting-agreeing* moves and *confronting-explanations* in the PSA compared to the STA (Chi-square values of 41.33 and 4.59, respectively). In turn, only the L1 group showed a higher use of *prolonging-evaluations* and *confronting-facts* in the STA as compared to the PSA (Chi-square values of 4.83 and 117.94, respectively).

This pronounced use of facts by the CLIL group and particularly in the STA was already shown in the students' tendency to *demand facts* in the STA. We have already shown an example of this use in the descriptive section 6.3.1.1 (extract 6.23). This frequent use of *demand* is closely linked to a focus on the language or, as stated before in the discourse layer, to metalinguistic inquiries. This is also clearly seen in extract 6.50 below.

- 1 Antonio: No...eh.. we can say.. a goat and an owl.. **you know what is an owl?**
 2 **(DEMAND-FACT)**
 3 Clara: Yes, Daniel, **do you know what is an owl? (DEMAND-FACT)**
 4 Daniel: Yes
 5 Antonio: An owl and a.. a .. a [goat...no, Daniel?]
 6 Clara: [[huhuhu]] ((imitating the sound of an owl))
 7 Daniel: Yes

Extract 6.50: Clila5 *demanding-facts* in the STA.

In extract 6.50, the question made by Antonio (line 1) and Clara (line 3) to Daniel comes from the need to understand a word in their L2 which they perhaps do not know or do not remember. The understanding of the L2 words is key to make the discussion possible and to avoid a communication breakdown; therefore, these types of demands can be expected within the CLIL context. However, examples of *demands* more specifically related to the content discussed by the group were also found. These content-related enquiries have been found both in the L1 and CLIL context (see extract 6.51).

- 1 *Lara: ((to Dani)) fishes have gills?*
 2 *Dani: Yes ((Lara starts writing))*
 3 *Lara: Fishes have gills ((while she writes))... ((Dani and Guille start playing*
 4 *around))*
 5 *Dani: ((to the camera)) <L1SP está %X% L1SP>*
 6 *Lara: **And frogs what have? (DEMAND-FACT)***
 7 *Dani: Frogs have %X%*

Extract 6.51: Clilb3 *demanding-facts* in the STA.

In this extract, Lara is writing the answer to the prompt's question (see comment in line 3) which requires the students to name a part of the animal's body that is adapted to their environment (water environment in this case). Therefore, her own question (line 6) is related to her need to fulfil this requirement by providing a fact without any need to justify her answer. This need is not specifically connected to the CLIL setting and could have taken place also in the L1 class.

As already mentioned above, a higher use in *confront-disagree* and *prolong-explanation* by both groups and *confront-explanations* only in CLIL classes was found in the PSA compared to the STA. This means that the characteristics of the PSA appear to trigger a higher use of *confronting* and *explanations* as compared to the STA. In order to illustrate this possible connection, a closer examination of the use of these moves in context is necessary (see extract 6.52 below).

- 1 *Saúl: Number three.. three...A*
- 2 *Alicia: So.. this is... I think is this because.*
- 3 *Lara: No... No*
- 4 *Alicia: Yes, it's this*
- 5 *Lara: No because look, here is open and here isn't (DISAGREE-PROLONG*
 6 **EXPLANATION) (DISAGREE-PROLONG EXPLANATION)**
- 7 *Saúl: But look here, is.. is the two, the two (CONFRONT-EXPLANATION)*
- 8 *Alicia: No, this is open, this is open (DISAGREE-PROLONG*
 9 **EXPLANATION)**
- 10 *Saúl:#*
- 11 *Alicia: Yes...And this is so thin... two lines, this ((Lara looks at the picture*
 12 *carefully)) This is come like this... yes, yes.. I think yes (AGREE-*
 13 **EXPLANATION)**

Extract 6.52: Clila4 *disagreeing* and *prolonging* with *explanations* in the PSA.

In this extract, both Lara (lines 5-6) and Alicia (lines 8-9) are *disagreeing* with the previous move and justifying their options by using *prolong-explanation*. In between, Saúl is *confronting* with an *explanation* too and even when they come to an *agreement* (Alicia, line 12), *explanations* are also given. This group dynamics illustrates the role of *explanations* in the PSA, when there is opposition or *disagreement*.

6.3.2.3 Comparison across groups and activities

This section presents the comparative results across both group (CLIL and L1) and activity type (STA and PSA). To avoid unnecessary repetition, it only examines the statistically significant results that differ from those obtained separately in the comparisons between the two groups (section 6.3.2.1) and the two activities (section 6.3.2.2). This comparison will be used as a way of confirming some of the differences found in the previous section and connected only to one of the groups (L1 or CLIL). Thus, Table 6.24 below shows whether the significant differences in the use of registers and CDFs found across activities (STA and PSA) can be linked to the specific group or not. In order for it to be linked to the group and not the activity

the significant difference would have to be present in both activities (L1 STA and L1 PSA) within the same the group (L1 in this case). When the difference is related to the activity (for example STA) but also to the group (for example CLIL) there will only be a significant difference in STA in the CLIL group (CLIL STA).

As in case of Tables in the comparative section 6.2.2.3, in Table 6.26, cells coloured in light yellow show a slightly significant difference, those coloured in yellow – a significant difference, and cells in dark yellow represent a very significant difference. The Chi-square values were not shown in this table due to space constraints but the same criteria as the one taken in previous tables was followed.

	CLIL STA		L1 STA		CLIL PSA		L1 PSA	
Feature	N	%	N	%	N	%	N	%
REGISTER	N=1979		N=2595		N=3999		N=4577	
Instructional	1249	63.11 %	16 43	63.31 %	320 8	80.22 %	357 4	78.09 %
Regulative	613	30.98 %	64 1	24.70 %	741	18.53 %	860	18.79 %
Social_talk	117	5.91%	31 1	11.98 %	50	1.25%	143	3.12%
GIVE-INFO-TYPE	N=90		N=78		N=370		N=373	
Give-fact	53	58.89 %	53	67.95 %	197	53.24 %	288	77.21 %
Give-evaluation	28	31.11 %	13	16.67 %	154	41.62 %	54	14.48 %
Give-explanation	9	10.00 %	12	15.38 %	19	5.14%	31	8.31%
DEMAND-INFO-TYPE	N=141		N=196		N=123		N=116	
Demand-fact	95	67.38 %	89	45.41 %	47	38.21 %	59	50.86 %

Feature	CLIL STA		L1 STA		CLIL PSA		L1 PSA	
	N	%	N	%	N	%	N	%
Demand-evaluation	29	20.57%	63	32.14%	46	37.40%	38	32.76%
Demand-explanation	17	12.06%	44	22.45%	30	24.39%	19	16.38%
PROLONG-TYPE	N=92		N=136		N=470		N=625	
Prolong-fact	41	44.57%	60	44.12%	149	31.70%	217	34.72%
Prolong-evaluation	13	14.13%	19	13.97%	57	12.13%	50	8.00%
Prolong-explanation	38	41.30%	57	41.91%	264	56.17%	358	57.28%
PRIOR_MOVE	N=92		N=136		N=470		N=625	
Prolong-support	44	47.83%	67	49.26%	223	47.45%	269	43.04%
Prolong-confront	30	32.61%	40	29.41%	197	41.91%	297	47.52%
Prolong-other	18	19.57%	29	21.32%	50	10.64%	59	9.44%
SUPPORT-TYPE	N=662		N=886		N=1566		N=1753	
Su-fact	358	54.08%	379	42.78%	525	33.52%	688	39.25%
Su-evaluation	40	6.04%	40	4.51%	225	14.37%	112	6.39%
Su-explanation	125	18.88%	199	22.46%	272	17.37%	422	24.07%
Su-agree	139	21.00%	268	30.25%	544	34.74%	531	30.29%

Feature	CLIL STA		L1 STA		CLIL PSA		L1 PSA	
	N	%	N	%	N	%	N	%
CONFRONT-TYPE	N=184		N=288		N=594		N=591	
Co-fact	49	26.63 %	10 6	36.81 %	129	21.72 %	44	7.45 %
Co-evaluation	40	21.74 %	37	12.85 %	64	10.77 %	49	8.29 %
Co-explanation	28	15.22 %	62	21.53 %	134	22.56 %	118	19.97 %
Co-disagree	67	36.41 %	83	28.82 %	267	44.95 %	380	64.30 %
Notes: 1. Coloured cells: light yellow - slightly significant; yellow – significant; dark yellow - very significant.								

Table 6.26: Registers and CDFs in STA and in the PSA both in the L1 and the Clil classroom.

Regarding *registers* and *social talk*, results show that the use of *social talk* is highly significantly different in both L1 activities. This means that apart from the difference found between STA and PSA, there is also a very significant difference across groups, as we presented in the previous section. Results show that *social talk* is more frequently used not only by the L1 group as compared to the CLIL group, but also in L1 STA more than in L1 PSA. As for the rest of the registers, the *regulative register* is more significantly used by CLIL students in the STA (CLIL STA) while the *instructional* is also more frequently used by CLIL students but this time more in the PSA than in the STA. In other words, there is a statistically higher use of both registers in CLIL groups: the *instructional* register in CLIL PSA than in the STA and in both activities in L1 groups and the *regulative* register in CLIL STA than in the PSA and in both activities in L1 groups.

In *initiation* moves, results show that *giving-evaluations* is a used significantly more by CLIL students (is uin dark yellow in the PSA and in light yellow in the STA) than by the L1 students. Therefore confirming the results presented previously across groups. *Giving facts* is however significantly more used by L1 students in the PSA.

As regards *demanding* facts, they are significantly more used by the CLIL group (as compared to the L1 group) and significantly more in the STA (CLIL STA) than in the PSA. In fact, because of this high frequency of *demanding facts* in CLIL STA, resulting in a very significant difference, the weight of the other two options: *demand explanations* and *demand evaluations* in CLIL STA, when compared to results in the L1 group, is strongly decreased. Because of this, if we compare these two moves (*demand evaluations* and *demand explanations*) in the STA in the CLIL group and the L1 group, these become significantly more frequent in L1 STA, even if compared to L1 PSA. As shown in the comparative section 6.3.2.2 (see particularly Tables 6.24 and 6.25), this is probably the case because when taken separately, the results across activities in the L1 data have revealed no preference in the use of *demanding-evaluations* and *demanding-explanations* in the STA.

As Table 6.24 shows, in *sustaining* moves, *prolong-evaluations* are only significant in the CLIL class and only in the PSA. Meanwhile, the use of *support-fact* and *support-agree* depend on the activity type (STA and PSA) and group (CLIL and L1). Thus, the CLIL class uses significantly more *supporting-facts* in the STA whereas the L1 class uses them more in the PSA. However, the opposite correlation is seen in *supporting-agreeing* moves: they are significantly more used by L1 students in the STA and by CLIL students in PSA. In addition. In relation to *support-evaluations* and *support-explanations*, it can be argued that the significantly higher use of both in the PSA, of the former in the CLIL group (as compared with the L1 group) and of the latter in the L1 group (as compared with the CLIL group) seems connected to the activity type rather than to group type. This means that *support-evaluation* is more frequently used in CLIL PSA (than in the STA and in both activities in the L1 group) and *support-explanation* is more common in L1 PSA (than in the STA and in both activities in the CLIL group).

In relation to the results on the use of *supporting-facts* and *confronting-facts*, the situation resembles the one with *supporting-facts* and *supporting-agreeing* presented above. Namely, The CLIL class uses significantly *more supporting-facts* in the STA while the L1 class uses them significantly more in the PSA. The opposite happens with *confronting-facts*: CLIL students use them significantly more in the

PSA whereas L1 students use them slightly less significantly in the STA. This apparently contradictory results are probably caused by a notably low use of *confronting-facts* by the L1 group in the PSA. The results on *confront-evaluation* do confirm what was found in the comparison between the two activities in each group: CLIL students use significantly more *confront-evaluation* in the STA. Finally, the results on *confront-disagree* show a significantly higher use of *disagree* in the L1 group and only in the PSA, thus confirming the results already presented in the L1 comparison across activities..

6.3.2.4 Summary of comparative results

The comparative results have presented the differences that the two contexts (CLIL and L1 classes) and the two types of group work activities (science topic discussion activity, STA, and problem solving discussion activity, PSA) bring into the knowledge layer. In the previous sections, a clear contrast between the CLIL and the L1 groups and the STA and PSA has been established that can help enlighten some of the results shown previously in the descriptive part.

Thus, the comparative analysis has confirmed that, in *initiating* moves, CLIL students highly rely on *facts*, especially when they *initiate* with *demands*, this being particularly frequent in the PSA. CLIL students also prefer to *initiate* their turns by *evaluating* more than their L1 peers. In *sustaining* moves, L1 students have a preference for *supporting explanations* and *disagreeing* moves followed by *prolonging-explanations*.

In terms of the use of registers and CDFs, L1 students make more use of *social talk* while CLIL students employ more frequently the *regulative* and *instructional* registers. In sum, the comparison of the results obtained in the knowledge layer underlines a contrast between the two groups (CLIL and L1) focused on two aspects: *demanding facts* and *evaluations* favoured in the CLIL group and *social talk* and *explanations* in the form of *sustaining* and *prolonging* moves in the L1 group.

The comparison across activities has also revealed interesting findings. The presence of *prolonging* moves after *confronting* moves has been more significantly

associated to the PSA. Results have also shown that *demanding facts* and the *instructional register* are more frequently used in the PSA than in the STA. In contrast, the STA seems to trigger a more frequent use of the *regulative register* and of *social talk*.

6.3.3 Summary of results on the knowledge layer

The knowledge layer represents the view of the language as meaning-maker and, thus, it is the layer that addresses the way language represents content. In the developed multi-analytical model, this has been represented by registers: the language used to interact socially (*social talk*), the language that organizes the learning (*regulative register*) and the language that expresses the learning (*instructional register*). In addition to register, this layer incorporates the articulation of knowledge through *facts, evaluations and explanations*. These analytical elements help us see how content is expressed, or the connection between discourse and knowledge.

The results of the quantitative and qualitative analysis of the CLIL and L1 data in the STA and PSA have shown how *facts* are an important element both when *initiating* and *sustaining*, in both groups and activities. Also, students from both groups favour *evaluations* in the *initiating* moves and *explanations* in the *sustaining* part of the discourse. After most of the *disagreeing* moves there is a *prolonging* move where students seek to *explain, evaluate* or justify with a *fact* their opposition to the previous move. However, *agreeing* moves are not so frequently followed by *prolongs*. As stated previously, *disagreeing* usually triggers justification (and therefore some kind of *prolong*) and *agreeing* often does not. The descriptive results provide a general view of how knowledge is co-constructed in both activities, while the comparative section brings in further details.

The analysis in the comparative section has shown that CLIL students are slightly more focused on the task, both its organizational and content aspects, than L1 students. They dedicate more time to setting up the activity and to speaking about the topic. They also show preference for *giving evaluations* and both *giving* and *demanding facts* and more so in *initiations*. Qualitative analysis has given examples

of this evaluative language in the CLIL groups, where the chunk “I think” has been found to be very frequent.

The results obtained in this layer have also shown that L1 students find it easier to talk about their personal matters through their more pronounced use of *social talk*. It is often triggered by something discussed in the activity but other examples of *social talk* as merely off-task talk have also been found. Similar to CLIL students, L1 students also prefer *initiating* turns by *giving facts*. However, in *sustaining* moves, they use *disagreeing* moves, which are often justified through *explanations*, and *confronting-facts* more frequently than their CLIL peers..

The different activity types resulted in both groups producing different *cognitive discourse functions*. Both groups found it easier to focus on the problems than science topic and therefore used more *instructional* register in the PSA. The STA demanded from both groups a higher organization of the task (*regulative register*) but also allowed for more off-task moments (*social talk*). The STA has also been shown to favour a slighter higher use of *explanations* in *initiations* and more *supporting-facts* and *confronting-evaluations* for both groups than the PSA. On the other hand, apart from resulting in students’ stronger attention to the task, the PSA has also been shown to generate more conflict among the members of the group, with a stronger presence of *disagreeing* moves but also more *prolonging-explanations*, which have been proven to be mostly linked to these *disagreements*. In addition, when *supporting* each other, students tended to use *evaluations* in a more significant way in the PSA than in the STA.

When using the classroom registers across the two activities (STA and PSA), CLIL and L1 students differ slightly. Both groups use the *regulative register* and *social talk* more in the STA than in the PSA, but the *instructional* register more in the PSA than in the STA. In the STA, CLIL students tend to *demand facts* frequently in *initiations*, and illustrative examples have shown a focus on metalinguistic aspects, whereas L1 students tend to use *confronting-facts* more frequently in this activity. On the contrary, in the PSA, L1 students use *supporting-facts* more than in the STA and more

than their CLIL peers. Across activity type results have also shown a particular tendency L1 students have developed to use *social talk* in the STA activity.

Many similarities and differences have been put forward across groups (CLIL and L1) and activities (STA and PSA). The interpretation of these relevant features for CLIL or L1 students, for the STA or the PSA, will be further interpreted in the discussion chapter X. In the next section, the results obtained in the last layer of the multi-layered model, the interactional layer, are presented.

6.4 Results on the interactional layer

The third layer in the multi-layered model developed in this study relates to smallgroup interaction. As mentioned before (see Chapter 5, section 5.3.3), this level of analysis is based on three distinct patterns of interactions: collaboration, peer tutoring and cooperation (Damon and Phelps, 1989), and two indexes proposed to describe them: equality and mutuality (Storch, 2002). Again, the UAM Corpus Tool was used in order to retrieve equality and mutuality elements of group interaction.

As stated in section 5.3.3 in Chapter 5, equality is defined by an equal distribution of turns and control over the direction of a task (Van Lier, 1996), meanwhile mutuality is the learners' level of engagement with the contributions of their partners. The results on the distribution of turns reveal the total number of turns produced by each group member and the total number of words per each turn. In order to account for results referring to the control over the direction of the task the *regulative* register was used.

In this layer, and following the same descriptive-comparative division, both the quantitative results on the distribution of turns and *regulative* register by each member of the different groups and a more detailed and contextual qualitative analysis of the interaction produced in different groups with a higher level of equality will be presented. The more detailed analysis was used to identify mutuality features within the small group interactions.

6.4.1 Part 1: Descriptive results

This part presents the results obtained from the descriptive analysis in the interactional layer. As with the results obtained in the other two layers, both the quantitative and qualitative results will be presented simultaneously. As with all the quantitative results presented previously, the statistical analysis of the data was done using the UAM Corpus Tool. For this layer, the results retrieved from the distribution of turns and *regulative* register will be shown in each randomly selected groups, first in the CLIL class and then in the L1 class.

As explained previously, two CLIL classes and two L1 classes participated in this research, coded as CLIL A and CLIL B, and L1 A and L1 B respectively. A number shown next to each code (e.g. Clila2) refers to the group number assigned by the teacher. Four groups were randomly chosen from each class, which amounts to a total of eight groups in the CLIL data and eight groups in the L1 data. In the following section, we will present the quantitative and qualitative results, first of the eight CLIL groups and next of the eight L1 groups.

In order to facilitate the presentation of results on the interactional layer within a considerable amount of groups, these have been grouped in similar interactional patterns, following the model for group interaction proposed by Storch (2002). In other words, the common features of the CLIL smallgroups and the L1 small groups have been put together in order to make the general picture easier to grasp. The results on each smallgroup will be presented together with the rest of the groups that have similar patterns in terms of equality only or equality and mutuality. Those groups categorized as high in equality in terms of distributions of turns and control of the activity will be further analysed qualitatively using illustrating extracts in order to draw results on mutuality aspects.

6.4.1.1 CLIL groups

In this section, the results for eight CLIL smallgroups from both CLIL A and CLIL B classes will be presented. The section is divided into three parts to present the groups according to the identified interactional pattern as follows:

- a) groups with *low equality* in distribution of turns led by one or two members (three small groups);
- b) groups with *high equality* in distribution of turns but *low equality* in control of the activity (three small groups);
- c) groups categorized as *high in equality* in both factors, distribution of turns and control of the activity, (two small groups). These groups will be further qualitatively analysed in terms of *mutuality*.

6.4.1.1.1 Groups low in equality in terms of distribution of turns

In the CLIL group, three groups emerged as *low in equality* in terms of distribution of turns. However, the interactional patterns that produced this inequality were of two kinds. The first one was produced due to the high participation of two group members and the low participation of one in terms of percentage of turns per each student. The second one was produced by a very high participation of one member and the low participation of the remaining two.

The first pattern, where two students participate more and the other one less, shows two smallgroups: Clila2 and Clila5.

Before presenting the results on these groups, several comments on the tables with results should be made. Thus, in each table, the first column presents the total number of turns per student with the percentage of turns out of the total number of turns of the group (Clila2 in this case) assigned to that number. An equal distribution of turns was assigned to those distributions that showed no more than a five point difference in the percentage between the lowest and the next and then between the middle percentage and the highest. Taking into account that one student might have a large number of very short turns while another student might have less but longer turns, the number of words per student with the corresponding percentage and the average number of words per turn, excluding the ones produced in the L1 in the

CLIL group, were also calculated, as shown in second and fourth columns. These aspects were mainly considered in a descriptive way. Therefore they were not used to determine equality in distribution of turns except when the difference found in moments of doubt. The mentioned three columns (turns, words and average words per turn) inform about one of the factors related to equality: the distribution of turns. In addition, another column was added referring to the number of words in the L1⁷ produced by each student (column three). These words were excluded from the average number of words per turn as they were also excluded from the total word amount in the CLIL data.

Table 6.27 shows the results obtained by Clila2 group.

Clila2	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 <i>Irene</i>	223 42.72%	1812 55.69%	106 32.51%	7.6
Student 2 <i>Jimena</i>	194 37.16%	1099 33.77%	166 50.92%	4.8
Student 3 <i>Juan</i>	110 21.07%	343 10.54%	54 16.56%	2.6
Total	522	3254	326 10.01%	

Table 6.27: Distribution of turns and words in Clila2 group.

Results show that the distribution of turns is not equal as Student 1, Irene and Student 2, Jimena, are the ones that mostly intervene (42.72% and 37.16%, respectively). Irene produces the highest amount of words out of the total number of words (55.69%) and the longest turns since her average number of words per

⁷ The words in Spanish were coded as L1 words and assigned to each group member using the UAM corpus tool. This tool was also used to later retrieve number of words per student and percentages of words in Spanish per member from the total produced in the group.

turn is also the highest (7.6). She is followed by Jimena whose turns represent slightly more than one third of the total and whose total number of words is also very high (33.77%). Her turns, however, are considerably shorter than Irene's (4.8) and she is also responsible for most of the words produced in L1 Spanish (50.92%). Juan's notably lower participation rate, completes the data of this group, who has the least number of turns (21.07%), who speaks five times less than Irene and three times less than Jimena (10.54%) and whose interventions are very short (2.6 average number of words per turn).

In Table 6.28 the distribution of the results obtained by group Clila5 are shown.

Clila5	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 <i>Clara</i>	269 42.09%	1783 49.47%	12 54.54%	6.5
Student 2 <i>Antonio</i>	249 38.97%	1482 41.12%	8 36.36%	5.9
Student 3 <i>Daniel</i>	121 18.94%	339 9.41%	2 9.1%	2.7
Total	639	3604	22 0.61%	

Table 6.28: Distribution of turns and words by the Clila5 group.

The results make it clear that the distribution of turns in group Clila5 also lack the equality factor as Student 1, Clara, is responsible for almost half of the turns (42.09%). She clearly dominates in all parameters: she produces the highest number of words (49.47%) and the highest average number of words per turn (6.5) as compared to the other two group members as well as most of the L1 words (54.54%). Antonio has more than one third of the total amount of turns (38.97%) and he is also the second in the total number of words (41.12%), average number of words per turn (5.9) and the number of words spoken in the L1 (36.36%). Daniel's notably lower participation rate, completes the data of this group: he speaks half

less than Clara and Antonio in terms of turns (18.94%) and between four to five times less in terms of words (9.41%), his interventions are also very short (2.7 average number of words per turn). However, it has to be mentioned that Daniel is a student with special learning needs. His classmates are constantly trying to help him to get involved in the activity (see extracts 6.13 and 6.48 in sections 6.2.2.2 and 6.3.2.2).

In the second pattern, where one member participates significantly more than the other two, results show only one smallgroup: Clila8. In table 6.29 the results obtained by the Clila8 group are presented.

Clila8	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 <i>Blanca</i>	281 43.36%	1884 56.17%	2 0.98%	6.6
Student 2 <i>Catalina</i>	176 27.16%	743 22.15%	9 4.39%	4.1
Student 3 <i>Roberto</i>	191 29.48%	727 21.68%	194 94.63%	2.7
Total	648	3354	205 6.11%	

Table 6.29: Distribution of turns and words by the Clila8 group.

Results show how Student 1, Blanca, is the one who participates the most, with a very high percentage in the number of turns (43.36%). In addition, she produces the highest number of words (56.17%) and her number of words per turn is also the highest (6.6). She is followed by both Student 2, Catalina, and Student 3, Roberto, whose turns represent almost the same amount (27.16% and 29.48%, respectively). However, Roberto is responsible for almost all of the words spoken in the L1 (94.63%). On the other hand, Catalina's average number of words per turn (4.1) is much higher than Roberto's (2.7). However there is not much difference in Catalina's and Roberto's total number of words (22.15% and 21.68%, respectively).

The fact that the words in the L1 are not counted for the average and that Roberto produced almost the total amount of L1 words might explain the difference in his average number of words per turn. The high participation of Blanca and a considerably lower participation rate of both Catalina and Roberto characterize this group's interactions.

These results might be explained in the light of the bigger context as Catalina is a very shy girl who finds it often difficult to express herself whereas Blanca is a very confident person; these facts could have affected the turn distribution in this group. In addition, Roberto's lack of motivation to contribute to group work, exemplified in his constant use of the L1 and general passiveness, was criticized by Blanca and Catalina on several occasions during the activities (see extract 6.19 in section 6.3.1.1).

In sum, drawing on the results presented for these three small groups (Clila2, Clila5 and Clila8), they cannot be categorized as fostering *equality* in terms of distribution of turns and, therefore, they were not considered for the analysis of the second *equality factor*, which is control over the task.

6.4.1.1.2 Groups high in equality in distribution of turns but low in control of the activity

In groups with high level of equality in distribution of turns, that is the ones presented in this section and the next section (6.4.1.1.3), another column with the distribution of the use of the *regulative* register per student was added to reflect the results on the second aspect related to *equality*, control of the activity. In this section, three CLIL groups were categorized as *high in equality* in terms of distribution of turns but *low in equality* in terms of control of the activity: Clila3, Clilb3 and Clilb4.

Table 6.30 shows the distribution of turns and words in Clila3 group.

Clila3	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative register
Student 1 <i>Lara</i>	242 36.56%	1282 31.57%	22 35.48%	5.2	56 38.1%
Student 2 <i>Alicia</i>	222 33.53%	1567 38.6%	14 22.58%	6.9	32 21.77%
Student 3 <i>Saúl</i>	198 29.91%	1211 29.83%	26 41.94%	5.9	59 40.13%
Total	662	4060	62 1.53%		147

Table 6.30: Distribution of turns and words by the Clila3 group.

Results show that the distribution of turns in this group is fairly equal. The student who uses the highest number of turns is Student 1, Lara, who is the one that mostly intervenes (36.56%). However, she is the second in total number of words (31.57%) and the third in average number of words per turn (5.2). Student 2, Alicia, who is the second in the total number of turns produced (33.53%), is, however, the one with the highest amount of words (38.6%) and the highest average number of words per turn (6.9). This means that although she produces a bit less turns than Lara, her turns are almost two words longer than Lara's. Student 3, Saúl, intervenes the least (29.91% of turns) and produces also the least amount of words (29.83%). His total number of words, however, is not very low but it must be taken into account that he produces the highest amount of words in L1 Spanish (41.94%). As the difference between the lowest percentage of turns (Student 3: 29.91%) and the next percentage (Student 2: 33.53%) is less than five points and the same happens with the latter and the highest percentage (Student 1: 36.56%) and the total number of words per student and the average number of words per turn are also quite equally distributed, we can categorize this group as equal in respect to the first aspect of

equality in group interaction, that is, the distribution of turns (signaled in the table by coloured column) .

This takes us to the second *equality factor*, the control of the activity, where the use of the *regulative* register has been measured (see the last column in Table 6.30). The results show that the activity has been mostly organized and controlled by Saúl and Lara, who present very close results in the use of the regulative register (40.13% and 38.1%, respectively) and are followed by Alicia, who is notably behind in this factor (21.77%). Since the difference in the percentage between Student 2 (Alicia, with the lowest percentage in control of the activity) and 1 (Lara, with the middle percentage value in this factor) more than 5 points even though between this 1st student (Lara) and 3 (Saúl, the member with the highest percentage in control of the activity) comprises a less than 5 point difference, the control of the activity in terms of the use of the *regulative* register cannot be categorized as equally distributed among the group members.

The results of Clilb3 group, the second group in this interactional pattern (high in equality in terms of the distribution of turns but low in the distribution of control of the activity) are shown in Table 6.31.

Clilb3	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative register
Student 1 <i>Dani</i>	227 36.55%	1158 35.74%	96 46.83%	4.6	69 45.39%
Student 2 <i>Lara</i>	181 29.15%	1045 32.25%	36 17.56%	5.5	36 23.69%
Student 3 <i>Guille</i>	213 34.3%	1037 32.01%	73 35.61%	4.5	47 30.92%
Total	621	3240	205 6.33%		152

Table 6.31: Distribution of turns and words by the Clilb3 group.

Results show that in this group the distribution of turns is fairly equal. The student that produces most turns is Student 1, Dani, who is the one that mostly intervenes (36.55%). He is also the one who produces the highest number of words (35.74%); however, his average turn length is not very high, being the second lowest one (4.6). Although apparently contradictory, this finding can probably be explained by the fact that he has produced most of the group's discourse in the L1 (46.83%). Student 3, Guille, is the second in the total amount of interventions (34.3%) but he is the lowest in the amount of words produced out of the total number of words (32.01%) and the average number of words per turn (4.5), with results close to those by Dani, probably because he also produces many interventions in L1 Spanish (35.61%). The two leading participants, therefore, seem to make short interventions and rely notably on the L1, as they produce the bigger part of the total words used in Spanish by the group.

Student 2, Lara, is the one that intervened the least (29.15%), and having produced almost the same amount of words as Guille (32.25%), she is however the one who spoke the least in Spanish (17.56%). This apparent contradiction is explained by the fact that her turns were the longest in the group as she produced the highest average number of words per turn (5.5). The difference between the lowest percentage of turns (Student 2: 29.15%) and the next (Student 3: 34.3%) is slightly higher than five points however the latter and the highest percentage is a lot lower than five (Student 1: 36.55%). Since, in addition, the total number of words per student and the average number of words per turn are quite equally distributed, even with the slightly higher than five points difference in percentage of turns, we can categorize this group as quite equal in reference to the first equality factor, distribution of turns (see Column 1 coloured in green).

This takes us to analyse the second *equality* factor, the control of the activity through the use of the *regulative* register (see the last column in Table 6.29). The results show that the activity has been mostly organized and controlled by Student 1 (45.39%); he is then followed by Student 3 (30.92%) whereas Student 2 has stepped back in this factor (23.69%). Therefore, and since the percentage difference in the distribution of the *regulative* register between Students 2 (the lowest) and 3 (the

middle value) and then between this last one and 1 (the highest value) comprises a more than 5 point difference, the control of the activity in this group in terms of the use of the *regulative* register is not distributed in an equal way among the group members.

The results of Clilb4 group, the third small group in this interactional pattern, are shown in Table 6.32.

Clilb4	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative register
Student 1 <i>Eva</i>	308 33.44%	1083 27.58%	55 61.11%	3.3	73 37.05%
Student 2 <i>Jorge</i>	293 31.81%	1616 41.15%	28 31.11%	5.4	52 26.4%
Student 3 <i>Raúl</i>	320 34.74%	1228 31.27%	7 7.78%	3.8	72 36.55%
Total	921	3927	90 2.29%		197

Table 6.32: Distribution of turns and words by the Clilb4 group.

Results show that the distribution of turns in this group is fairly equal. The one with most turns is Student 3, Raúl (34.74%), being thus the one who intervenes the most. However, he produces 31.27% out of the total number of words, which places him in the second position, and his average number of words per turn is quite low (3.8). Student 1, Eva, is the second with most turns (33.44%) but she produces the least number of words (27.58%) and her turns are the shortest ones due to a low average number of words per turn (3.3), probably because she produces the highest number of words in the L1 (61.11%). Student 2, Jorge, is the lowest in the number of turns (31.81%), but he is the second in the amount of words produced in the L1 (31.11%) and the first in the total number of words (41.15%), his interventions are also the longest ones (5.4). As the differences between the lowest percentage of turns

(Student 2: 31.81%) and the next (Student 1: 33.44%) is less than five points and the same happens with the latter and the highest percentage (Student 3: 34.74%). Taking into account only this fact, we can categorize this group as high in equality in reference to turns (the column is coloured in green to show this). However, the total number of words per student and the average number of words per turn are quite unequally distribute, therefore this group will be further analysed cautiously and with certain doubts.

This takes us to the second equality factor of group interactions, the use of the *regulative* register (see the last column in Table 6.30). The results show that the activity has been mostly organized and controlled by two students: Eva (37.05%) and Raúl (36.55%), with a very small difference between the two. The third student, Jorge, shows, however, much lower results in this factor (26.4%). The control of the activity in terms of use of the *regulative* register is, hence, falls, almost equally, into the hands of Eva and Raúl. The difference between the member with the lowest value, Jorge, and the next, (middle value, Raúl) is however almost 10 point different, marking a strong inequality in control of the activity.

In sum, after the quantitative analysis of Clila3, Clilb3 and Clilb4 groups presented in this section, these groups could not be categorized as having *equality* in the second factor related to the control of the activity and, therefore, have not been considered for the qualitative analysis.

6.4.1.1.3 Groups high in equality in both turn distribution and control of the activity

Two groups can be grouped as high in both equality factors, distribution of turns and control of the activity: Clilb1 and Clilb6.

The results of the first group, Clilb1, are presented in Table 6.33.

Clilb1	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative register
Student 1 <i>Eva</i>	284 33.85%	2021 45.13%	149 27.14%	6.5	77 30.55%
Student 2 <i>Ana</i>	261 31.11%	1205 26.91%	88 16.03%	4.2	84 33.33%
Student 3 <i>Nono</i>	294 35.04%	1252 27.96%	312 56.83%	3.1	91 36.11%
Total	839	4478	549 12.26%		252

Table 6.33: Distribution of turns and words by the Clilb1 group.

Results show that the distribution of turns in this group is fairly equal. The student who intervenes the most is Student 3, Nono, who has the highest percentage of turns (35.04%) However, he produces slightly less than a third of the total amount of words (27.96%) and his interventions are very short since he has the lowest average number of words per turn (3.1). This is probably due to the fact that he uses the L1 the most, producing more than half of the total number of words in the L1 (56.83%), which are not taken into account when calculating the turn length. Student 1, Eva, is the second in the number of turns produced (33.85%), however, she produces the highest number of words (45.13%) and has the highest average number of words per turn (6.5), meaning that her turns are long. This is not affected by her quite high percentage of the L1 words used (27.14%). Student 2, Ana, has the lowest number of turns (31.11%) and words (26.91%). Although her total amount of words is very similar to that of Nono (27.96%), however, her average number of words per turn (4.2) is noticeably higher than Nono's (3.1). This means that although Ana intervenes less than Nono (31.11% vs 35.04%), she probably speaks more in English since her amount of L1 talk is very low (16%) and that explains her higher

average number of words per. turn. As the differences between the lowest percentage of turns (Student 2: 31.11%) and the next (Student 1: 33.85%) is less than five points and the same happens with the latter and the highest percentage (Student 3: 35.04%), we can categorize this group as high in *equality* in the first aspect, distribution of turns (the column is coloured in green to show this).

This takes us to the second *equality factor*, the control of the activity, where the use of the *regulative* register has been measured (see the last column in Table 6.31). The results show that the activity has been mostly organized and controlled by Nono, who has the highest percentage in the use of the *regulative* register (36.11%). However he is closely followed by Ana (33.33%) and Eva (30.55%). As the difference in percentages in the use of the regulative register between Eva and Ana (the lowest and the second in the percentage of regulative register used) is less than five points, and the same occurs between the middle percentage value (Ana) and the highest (Nono), this group can be categorized as having *equality* in both factors.

In order to confirm the use of the *regulative* register as a way to control the activity and to delve deeper into *mutuality* aspects of this group, a more contextual and detailed analysis is necessary. In extract 6.53 below, it can be observed how *evaluations* in the form of questions and answers and *supporting* moves are highly present in this group.

- 1 Ana: *Is your turn*
 2 Nono: *Yes, is my turn*
 3 Ana: ***I think is here***, ((Eva and Nono also point at the same)) *because it is*
 4 *the same pattern (GIVE-EVALUATION)*
 5 Nono: *You are agree? (DEMAND-EVALUATION)*
 6 Ana: ***Yes, I agree (SUPPORT-AGREE)***
 7 Eva: ***Yes (SUPPORT-AGREE)***
 8 Nono: *Is five*
 9 Ana: ***Yes (SUPPORT-AGREE)***
 10 Nono: *Number five ((while he writes))*
 11 Eva: *Okay, is my turn to write*

- 12 Ana: I don't want to write
- 13 Eva: No?
- 14 Nono: oh! Okay!
- 15 Ana: you two write ((pointing at them; Eva gets near her and whispers
 16 something to her))
- 17 Eva: Okay... I write now
- 18 Nono: Okay... I think.. (GIVE-EVALUATION)
- 19 Eva: Okay, I think is this because it has a cross... more cross and is.. (GIVE-
 20 EVALUATION-PROLONG EXPLANATION)
- 21 And: And this only four
- 22 Nono: and this a lot ... yes (SUPPORT-AGREE)
- 23 Ana: Yes (SUPPORT-AGREE)
- 24 Eva: So I think that is number two (SUPPORT-EVALUATION)
- 25 Ana: I think too (SUPPORT-EVALUATION)
- 26 Eva: A4 number two
- 27 Nono: Are you agree? (DEMAND-EVALUATION)
- 28 Ana. Yes, I'm agree ((Eva writes))

Extract 6.53: Clilb1: Use of *evaluations* and *support*.

Extract 6.53 shows a very high involvement in the activity of all group members. They express themselves using *evaluations* frequently. They tend to start by *giving-evaluations* (lines 3 18 and 19) and seek for all the members' opinion by *demanding-evaluations* (lines 5 and 27). Students also use *support-evaluation* (lines 24 and 25) and often resort to *support-agree* (lines 6, 7, 9, 22 and 23), which help the group fulfil the task. An extensive use of the chunk "I think" can also be observed. It seems that in this group, opinions are frequently given and sought for. By expressing opinions students show their involvement with the objectives and the content of the task.

In what refers to their participation, all group members show high involvement since they often continue by building on the other member's comments (lines 19-20 and 21-22). The students' use of the *regulative* register (underlined section: lines 11-17) helps them get organized for the task, although in lines 12-15 there is a short

disagreement on the writing turn but this is quickly solved. In general, there is a very democratic use of the *regulative* register, where group members are consulted and heard and giving orders is not the norm.

In the extract below (6.54) more examples of Clilb1 using the *regulative* register are presented.

- 1 Eva: *What number it is?*
- 2 Ana: *two ((Eva writes and Ana turns the page)). **next one**(REGULATIVE REGISTER)*
- 3 **REGISTER)**
- 4 Nono: **Is your turn, no? (REGULATIVE REGISTER)**
- 5 Ana: *Yes. I think is number **one because this.. Ehh***
- 6 Eva: **Lines**
- 7 Ana: **Lines they more** ((Making gestures)) *is like...*
- 8 Eva: *Yes, **is more bigger***
- 9 Ana: **Than these ones**
- 10 Eva: *Yes, **more big yes but... they are wider.. but the same lines***
- 11 Nono: *Number?... Ehh. one.. <L1SP %X%? SPL1> ((to Eva))*
- 12 Eva: *((whispering)) <L1SP %X% SPL1>... Okay*
- 13 Nono: **Now is the mine?.. (REGULATIVE REGISTER)**
- 14 Ana: **yes (REGULATIVE REGISTER)**

Extract 6.54: Clilb1: in the PSA.

In this extract, the use of reasons to justify options proposed is seen from line 4 to 9 (marked in bold). Each member is *supporting* but at the same time building on the reasons given in favour of a certain item in the PSA booklet. Underlined above are examples of the group using the regulative register in a 'democratic' way (see lines 2,4, 13, and 14). However, in this group we also find examples of *confrontation* (see extract 6.55 below).

- 1 Ana: *I think is five.. or four.. four, four*
- 2 Nono: **This is more difficult (SUPPORT-EVALUATION)**
- 3 Ana: *Yes*

- 4 *Eva: **I think I.. am not... I am not agree with that (CONFRONT-***
 5 ***EVALUATION)***
 6 *Nono: Yes, is four*
 7 *Eva: Yes I am agree*
 8 *Nono: Is four ((he takes the pen to write and Ana turns the page)).. Is your*
 9 *turn, no? ((to Ana))*
 10 *Eva: My turn ...*

Extract 6.55: Clilb1: Use of *confronting* moves in the PSA.

In extract 6.55, we see an example of a situation where group members are confused and they find the task difficult (line 2). As stated above, the use of *evaluation* is frequent in this group, and in this case it is used in a *confrontation*, mitigated with the chunk “I think” (line 4), which softens the opposition. It is a “polite” confrontation, which is quickly supported (lines 6 to 7) and ends up in a conclusion that helps them reach the answer to the item.

However, some examples of the members of the Clilb1 group working in a different way were also found, particularly in the STA. The following three extracts were labelled with the same number (6.56a, b and c) because they come from a longer data segment and are presented here in a chronological order, in order words, as the events shown really took place. In the moment exemplified below, Eva tries to exercise a leading role and drive the group towards the task completion. However, Nono takes the tasks as a game and makes the group work difficult. The other member, Ana, tries to follow Eva but is frequently distracted by Nono. The extract 6.56a illustrates this.

- 1 *Eva: ((turns to Ana, looks at Ana, then looks back at Nono)) because grass!*
 2 *Ana: Is in the mountain ((**Nono with both hands covers Ana's mouth and***
 3 ***she laughs**))*
 4 *Eva: <L1SP que %X% SPL1> Because grass ...Ehmmmm*
 5 *Ana: is in the mountains ((**smiles and Nono laughs**))*
 6 *Eva: <L1SP Vale %X% SPL1>*

7 *Ana: It is IN the mountains ((she complains Nono must be hitting her*
 8 *under the table))*

9

Extract 6.56a: Clilb1: in the STA activity.

In this extract, Nono is not focusing on the task and distracts Ana by playing around and drawing her attention by making her laugh, lines 2 and 3, or hitting her leg under the table, lines 7 and 8. Ana follows his game by smiling and laughing several times (lines 3 and 5). Eva, however, is left out of this complicity. She is trying to get some work done; however, Ana and Nono continue staying out of focus (see extract 6.56b below).

1 *Eva: Grass... grows ... in the mountains ((she writes))*
 2 *Ana: oh yes, that is very different ((laughs))*
 3 *Eva: No %X% in the mountains ((to Ana and she goes back to writing)) %X%*
 4 *Nono: You speak in Spanish ((to Eva)),*
 5 *Eva: ((kicks Nono under the desk, then looks at him, smiles))*
 6 *Ana: %X% ((to Eva))*
 7 *Nono: ((makes silly gestures about Eva))*
 8 *Eva: ((raises head, sees him and stares at him))*
 9 *Nono: hurry up!*

Extract 6.56b: Clilb1: in the STA activity.

The complicity established between Ana and Nono is clearly seen in this extract. They even make fun of Eva (lines 2 and 7) and Nono makes comments that disturb her work (lines 4 and 9). However, at the end, Ana gets tired and is urged by the need to complete the task (see extract 6.55c below).

1 *Eva: eh daisy is a type of flower that has like- (INSTRUCTIONAL*
 2 *REGISTER)*

- 3 Ana: ((open eyes, leans forward to Eva)) **yes, like this.. like this.** ((puts wrists
4 together and then widely opens them, making a shape of inverted
5 triangular))(SUPPORT-AGREE)
- 6 Eva: ((**Nono kicks her again**)) Stop! <L1SP para de pegarme!!... qué broma!
7 Vale de broma! SPL1> %X% until I put my shoes on ((Ana laughs))... ((Nono
8 also))...stop that! %X% you ((Nono throws Eva's pen to the floor))
- 9 Ana: <L1SP no sé donde está L1SP> ((to)) o:h
- 10 Nono: ((bends, looks under the desk searching for the pen)) <L1SP No sé
11 dónde está.... Ah! Allí está ((he stands up to get it)) me la quedo! L1SP>...
- 12 Ana: **please quickly!** ((To Eva that didn't finish tying her laces, it
13 seems)) (REGULATIVE REGISTER)

Extract 6.56c: Clilb1: in the STA activity

After a while, Ana gets back, focusing again on the activity and responds to Eva's intervention (line 3). She also helps her look for the pen when Nono throws it away (line 9). Her use of *regulative* register at the end of this extract (line 12) communicates interest in the completion of the task.

In sum, the extracts analysed above have contributed to making a very detailed picture of the interactional pattern present in Clilb1. Thus, extract 6.53 showed a frequent use of *evaluations* and *supporting* moves, showing involvement in the task and a tendency towards *agreement*; extract 6.54 showed how the group members were concerned with *giving* reasons for their answers and extract 6.55 showed an example of *confrontation* where agreement was sought at the end. In extracts 6.56a-c a situation generated in the STA was shown. However, it was rather an exception in Clilb1 group rather than a common practice.

In sum, the examples above and especially extract 6.53 have illustrated how students in Clilb1 group, and especially in the PSA, use the *regulative* register in an even way by organizing each member's turns of speech and writing in a democratic way. This confirms the second *equality factor*, an equal distribution in the control of the activity by all group members. In what refers to *mutuality*, where we seek a high

level of learners' engagement with their partners' contributions or, as Damon and Phelps (1989:127) describe, whether interactions are rich in reciprocal feedback and sharing of ideas during the task, the extracts have shown how group members are constantly giving feedback to each other. Namely, they give opinions about the content discussed and what other members are saying; they are also concerned with including the other members when asking for their opinions.

Following Storch's model of dyadic interaction (2002) and drawing on these results, we can categorize the Clilb1 group as *collaborative*, i.e. *high in equality* and *high in mutuality*. However, it must be put forward that most of the examples of group interaction where mutuality was promoted were found in the PSA activity. In the comparative section on this layer (see section 6.4.2), we will delve deeper into whether this is due to group characteristics or it is specifically linked to the PSA.

The second group that showed high *equality* in both factors (distribution of turns and of the *regulative* register) is group Clilb6. Table 6.34 shows the results for this group.

Clilb6	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative register
Student 1 <i>Pedro</i>	215 35.83%	1213 40.22%	16 32.65%	5.5	54 37.5%
Student 2 <i>Marta</i>	189 31.5%	962 31.9%	22 44.9%	4.9	41 28.47%
Student 3 <i>Covi</i>	196 32.67%	841 27.88%	11 22.45%	4.2	49 34.03%
Total	600	3016	49 1.62%		144

Table 6.34: Distribution of turns and words by the Clilb6 group.

Results show that the distribution of turns is fairly equal. The student with most turns is Student 1, Pedro, who is the one that mostly intervenes (35.83%). He is also the highest in the number of words (40.22%), with a fairly low amount of words produced in the L1 (32.65%). Pedro produces the highest average number of words per turn (5.5). This results in most of his interventions being quite long. Student 3, Covi, also intervenes frequently. She produces 32.67% of the total number of turns. She has, however, the least number of words (27.88%) and her average number of words per turn is also the lowest (4.2) compared to the rest of the group. In addition, since she produces the lowest number of words in the L1 (22.45%), she probably uses very short turns.

Student 2, Marta, produces an intermediate number of words per turn (4.9), being placed in between the other two students in this aspect. However, she has a fairly high total number of words (31.9%). This apparent contradiction is explained by the fact that she uses a high number of words in the L1 (44.9%) compared to the rest of the group members. As the differences between the lowest percentage of turns (Student 2: 31.5%) and the next (Student 3: 32.67%) is less than five points and the same happens with this last one and the highest percentage (Student 1: 35.83%), we can categorize this group as quite equal in reference to the distribution of turns (the column is coloured in green to show this).

This takes us to the second *equality factor*, the control of the activity, where the use of the *regulative* register has been measured (see the last column in Table 6.32). The results show that the activity has been mostly organized and controlled by Student 1, Pedro (37.05%), who is, however quite closely followed by Student 3, Covi (34.03%). Student 2, Marta is a bit far out in this factor (28.47%) making the difference between her and Covi slightly over five points (5.56 points). Therefore, if we follow strictly the criteria used to determine group *equality*, this group cannot be categorized as having the second *equality factor* related to the control of the activity. However, because the difference is rather slight (0.56), the group has been assigned to the following category: *high in equality* in terms of equal use of the *regulative* register. To further decide whether this group should be categorized as

equal in this second factor or not, we will examine interaction produced in this group closer in a more qualitative way.

As in Clilb1, a more contextual and detailed analysis is necessary to delve deeper into the second *equality factor* and the *mutuality* aspects in this group. These extracts, as the ones shown previously in the Clilb1 group, come from a longer data extract and are labelled with the same number and letters (6.57a, b and c) when they are presented in chronological order, as the events shown took place.

No special comments about this group were made by the teacher but during the observation, it was noticed that they all seemed try hard to have a dominant role in the interventions and control the tasks. Most of the times and as shown in the quantitative results referring to the use of the *regulative* register, this resulted in a rather even distribution of the control of the activity. However, since the distribution did not completely meet the equality requirements, it was necessary to further examine the data. While doing so, an event that might have altered results was found. As illustrated in extract 6.57a below, Covi was the student that complained the most when the others did not let her control the development of activity or intervene. In addition, Pedro showed a strong temper when one of his expectations was not met and remained upset and non-participant for a while.

- 1 *Pedro: Okay, flowering plants, the leaves of flowering plants..*
- 2 *Marta: Flowering plants*
- 3 *Covi: Flowering plants are..*
- 4 *Marta: Flowering plants are of flowers..*
- 5 *Covi: **Can I talk, please?***
- 6 *Pedro: **((gets upset and turns around))***
- 7 *Teacher: What happen here? **((the teacher talks to him))***
- 8 *Pedro: **((turns back but with an angry face))***
- 9 *Covi: **They don't let me talk.. I don't talk.. this person think and then I***
- 10 ***think one thing and the other one is talking***
- 11 *Teacher: Come on Pedro... You two keep going*

Extract 6.57a: Clilb6: in the STA.

This extract illustrates how, during the STA, Covi starts talking (line 3) but Marta quickly takes over (line 4) and Covi seems offended because of this. Pedro gets upset (line 6) and has an extreme reaction turning around and interrupting his participation. The teacher approaches and tries to help out in the situation (lines 7 and 11). When she approaches, Covi explains how she feels left out (lines 9-10). Finally, as shown in extract 6.57b below, Covi and Marta continue with the task (.

- 1 Marta: *Flowering plants have flower and coniferous no*
 2 Covi: ***I think... flowering plants grow up with.. eh.. polen and coniferous***
 3 ***trees no (CONFRONT-EVALUATION)***
 4 Marta: ***No, only the flowering, the flowers make the..eh.. seed with the***
 5 ***polen (CONFRONT-FACT)***
 6 Covi: *okay... Me I put that.. I put that? ... Can you write, now? ((she takes the*
 7 *paper to write))*
 8 Marta: ***Flowering plants have flower and coniferous no? ((she writes))...***
 9 Covi: ***Okay ((Marta finishes))... other***

Extract 6.57b: Clilb6's *confronting* moves in the STA.

This extract shows how, as they continue with the task, Marta and Covi discuss the facts asked by the prompt. Covi involves herself with the answer by *confronting* Marta's previous turn and states the fact in the form of an *evaluation* (lines 2 and 3), which in turn is *confronted* by Marta's justification with a *fact* (lines 4 and 5). Covi supports Marta's proposal (line 5) and later Marta checks the answer they have agreed upon (line 8). However, Pedro continues upset (he doesn't participate in this part), as we can see in extract 6.56c below.

- 1 Marta: *Okay...Ah!.. cones.. no..eh coniferous eh.. leaves don't fall and flowering*
 2 *yes*
 3 Covi: *Okay.. alright you..alright %X% ((she reads identification paper from*
 4 *researcher)) %X% ((she mocks Pedro who is sitting with his arms crossed*
 5 *apparently still upset))*
 6 Pedro: *Noo!!!*
 7 Covi: *In English!*

- 8 *Pedro: I am boreeedddd*
- 9 *Covi: %X% ((yawns twice))....*
- 10 *Pedro: %X% then.. give me the pencil*
- 11 *Covi: **Say something first for...***
- 12 *Pedro: Give me the pencil, please*
- 13 *Covi: **If you say an answer I give you... the pen... the next... answer** ((Marta finishes writing))*
- 14 *Pedro: nooooo*
- 16 *Marta: ((reading)) which type.. of.. of plant will survive better to the amazon rainforest, why?*
- 18 *Covi: %X%*
- 19 *Pedro: Is my turn... ((reads again))... ((all thinking))*
- 20 *Marta: mmmmmm... I don't know*
- 21 *Covi: **I Don't want to write more..***
- 22 *Marta: But I don't know... the solution...*
- 23 *Covi: **I don't know also... but this is going to do Pedro... and I give him the***
- 24 ***pencil***
- 25 *Pedro: This.... no...*
- 26 *Marta: I think one but... eh... need a lot of water*

Extract 6.57c: Clilb6's *confronting* moves in the STA.

Pedro continues upset at first (line 6). Then Covi blackmails him (line 13) and pushes him to get back to the group and participate. She offers to give him back a pencil she has taken from him (lines 11 and 13) and later she states that she does not want to write anymore (line 21) maybe to motivate Pedro and force him to give an opinion. A plausible explanation for their behaviour is seen in lines 21-24: the two girls do not know the answer and if they make Pedro write (23) they manage to get him back into the activity.

However, except for the conflict described in the extracts above (6.57a, b and c), the most frequent interactional pattern in Clilb6 is quite different, as illustrated in extract 6.58 below.

- 1 Covi:((Continues reading))Ok, camp... for the night, name two animals and
 2 plants you... find there...
- 3 Marta: **You could find there... I think we could find a fox because they live**
 4 **eh...on top (GIVE EVALUATION-PROLONG EXPLANATION)**
- 5 Covi: **And a.. and a cow (SUPPORT-FACT)**
- 6 Pedro: Cow?
- 7 Marta: **And a cow because they live... almost at the top (SUPPORT-**
 8 **EXPLANATION)**
- 9 Covi: Because they live almost at the top
- 10 Marta: **Yes because they... (SUPPORT-AGREE)**
- 11 Pedro: **an eagle! An eagle! Eagle! Eagle! (SUPPORT-FACT)**
- 12 Marta: Ehhh what was a eagle? ((Pedro whispers))
- 13 Pedro: eagle.. eagle can be
- 14 Covi: I think a fox and a cow ((Pedro whispers the translation of eagle to her
 15 too))
- 16 Pedro: **No, I think that eagle (CONFRONT-EVALUATION)**
- 17 Marta: Okay
- 18 Covi: Okay ((she writes)) <L1SP eagle L1SP>
- 19 Marta: I think we can found...
- 20 Covi: Trees! We can find trees.. they found ((she writes))
- 21 Pedro: **yes okay, okay trees.. (SUPPORT-AGREE)**
- 22 Marta: how do you say <L1SP ortigas SPL1>?
- 23 Pedro: **No, no, that no, because. they don't live in %X%...((They think,**
 24 **Pedro whispers something to Covi)) (CONFRONT DISAGREE-PROLONG**
 25 **EXPLANATION)**
- 26 Covi: %X%
- 27 Marta: Flowers.. we can find flowers because %X%
- 28

Extract 6.58: Clilb6: Use of *supporting* and *confronting* moves in the STA.

In extract 6.58, we frequently see all members participating and giving their opinions as *facts* (lines 5 and 11) and frequently justifying them with *reasons* (lines 3-4 and 7-8). At the end, they also tend to reach an *agreement* and be *supportive* of

each other's comments (lines 10, 11 and 21). When someone *disagrees* or *confronts* (lines 16 and 23-25), another *fact* is put forward (lines 16 and 27) and sometimes an *explanation* is given (line 23-25).

Extract 6.59 below shows that students in this group work together putting forward their ideas and looking for common agreement.

- 1 Covi: *This.. number one*
- 2 Marta: *Can we put that one... this one, look*
- 3 Pedro: **No, this goes with this... Ehhhhh... five** ((he turns to write))
- 4 **(DISAGREE-PROLONG EXPLANATION)**
- 5 Marta: **Five** ((she reaches to take the pen but Pedro gives it to Covi himself
- 6 and they pass the page)).. **I think is five** (SUPPORT-AGREE, SUPPORT-
- 7 **EVALUATION)**
- 8 Pedro: **No, this one, this one, look it has this** (DISAGREE PROLONG-FACT
- 9 **- PROLONG-EXPLANATION)**
- 10 Marta: **Number %X%** (SUPPORT-AGREE)
- 11 Covi: ((turns to write)) **this is stupid (confront-evaluation)**((when she
- 12 finishes, Pedro smiles and they turn the page)) **I think is this one** (GIVE
- 13 **EVALUATION)**
- 14 Pedro: **No.. this is** (CONFRONT-FACT)
- 15 Covi: *I think is this*
- 16 Pedro: *It is this.. it has to be this.. number five*
- 17 Marta: **And that one, one two and three** (CONFRONT-EXPLANATION)
- 18 Pedro: *One, two.. ((counting))*
- 19 Marta: **Yes, yes because this has this and this this** (SUPPORT-AGREE -
- 20 **PROLONG- EXPLANATION)**
- 21 Pedro: **Okay, number four** ((Marta turns to write)) *the four ((to her while*
- 22 *she is writing, they pass the page and Marta gives the pen to Covi)).. the pen*
- 23 *please ((he takes it from Covi's hands))* (SUPPORT-AGREE)
- 24 Marta: **Okay.. is this .. the one .. because this %X%** (SUPPORT-AGREE -
- 25 **PROLONG-EXPLANATION)**
- 26 Covi: **Yes, is this** (SUPPORT-AGREE)

Extract 6.59: Clilb6: examples of reaching an answer in the PSA.

As seen in extract 6.59, when there is *disagreement*, there is frequently an *explanation* (lines 3, 8-9, 17,) or another *fact* is put forward (line 14), and one of the other group members generally accepts it (lines 5-7, 10, 19-20, 21-23, 24-25 and 26). Moreover, some students frequently *explain* their answers (lines 19-20 and 24-25). A few examples of *supporting evaluations* are also found (lines 6-7, 17 and 19 and 24), however less frequently.

Another example of *evaluation* in the form of positive feedback is found in extract 6.60.

- 1 *Marta: I think we can..*
- 2 *Pedro: Well because the fox live on the mountains and ((Covi writes)) **forest***
- 3 **(SUPPORT-EXPLANATION)**
- 4 *Marta: **Fox live... eh.. almost at the top because there is not hot forest***
- 5 **(SUPPORT-EXPLANATION)**
- 6 *Pedro: **That is true** ((Pedro makes an agreement gesture)) **that is very***
- 7 ***true!!!!..** ((playing with the recorder)) **(SUPPORT-EVALUATION)***

Extract 6.60: Clilb6: *Giving evaluations* in the STA.

In extract 6.60, both Marta and Pedro are giving *explanations* to *support* their answers (lines 2-3 and 4-5) and finally Pedro acknowledges Marta's comment with a *supporting evaluative* move (line 6-7). This presents an example of students giving positive feedback to one another.

These extracts have shown that the Clilb6 group fulfills the first equality factor since it has an almost even participation of all members. They all are supportive of one another's comments and share their ideas despite the strong personalities of both Pedro and Covi that ended up in a small conflict, as has been shown in extracts 6.57a, b and c above. However, few examples of feedback have been found. As regards the use of the *regulative* register, measuring each member's control of the activity, it was slightly uneven, due to confrontations and unequal participation (acknowledged by Covi). Therefore, we cannot categorize this group as fully *collaborative* although it is fairly *high in both equality and mutuality*.

In sum, after the quantitative analysis of both Clilb1 and Clilb6 and the qualitative analysis of the extracts on each group presented above, it can be concluded that Clilb1 appears to meet all descriptive features of a collaborative group. However, Clilb6, although fairly high in both equality and mutuality, does not completely meet all the collaborative aspects.

6.4.1.1.4 Equality and mutuality in CLIL small groups

Results in most of the CLIL groups have shown a fairly equal distribution of turns in more than half of the CLIL groups. However, the unequal distribution of the control of the activity is the norm. Only one group has met the *equality* requirements in both factors (Clilb1) and another group came very close (Clilb6). Both groups have also been closely examined qualitatively in order to determine if they fulfilled the *equality* criteria in both aspects (equal distribution of turns and control of the activity through the use of the *regulative* register). However, results referred to *mutuality* (use of evaluation and feedback) have confirmed only one group as collaborative (Clilb1).

The following section will present the results of the groups examined in the L1 class.

6.4.1.2 L1 groups

As in the CLIL groups, in this section, the results for eight L1 small groups will be presented in both the L1 A and L1 B class. The section is divided into two parts to present the groups according to the identified interactional pattern as follows:

- a) groups with *low equality* in distribution of turns led by one or two members (five small groups)
- b) groups with *high equality* in distribution of turns but *low equality* in control of the activity (three small groups).

This section is organized in the same way as section 6.4.1.1 on CLIL small groups and the results will be presented in a separate table per each small group. This table shows the quantitative results obtained by the given group and has three columns. The first column presents the total number of turns per student with the percentage of turns out of the total amount of turns assigned to that number. The criteria for categorizing a group with an equal distribution of turns was the same as the one used for the CLIL group. The second and the third column show the number of words per student, with the corresponding percentage, and the average number of words per turn, respectively. In the groups where a fairly equal distribution of turns was shown, another column with the distribution of the *regulative* register per student was added, with the corresponding percentage to measure the second *equality factor*, each group member's control of the activity. When a group was low in both equality factors, it wasn't further analysed, that is, it wasn't examined for mutuality aspects.

6.4.1.2.1 Groups low in equality in terms of distribution of turns

In the L1 group, five groups emerged as *low in equality* in terms of distribution of turns. The interactional pattern that produced this inequality was the high participation of two members and the low participation of one in terms of number of turns per each student. Within this pattern, the following five small groups were categorized: L1a1, L1b1, L1b2, L1b5 and L1b6.

Table 6.35 below illustrates the findings obtained in the L1a1 group.

L1a1	Turns	Words	Av. words per turn
Student 1 <i>Laura</i>	239 36.1%	824 24.58%	3.4
Student 2 <i>Sandro</i>	182 27.49%	1297 38.68%	7.1
Student 3 <i>Gael</i>	241 36.41%	1232 36.74%	5.1
Total	662	3353	

Table 6.35: Distribution of turns and words in the L1a1 group.

Results show that the distribution of turns lacks the equality factor as Student 2, Sandro, intervenes very little (27.49% of the total amount of turns). However, he produces the highest number of words (38.68%) and the highest average number of words per turn (7.1). This is probably a result of few but long interventions. Student 3, Gael, and Student 1, Laura, produce a very similar number of turns, 36.41% and 36.1%, respectively, but Gael uses a significantly higher number of words than Laura, 36.74% and 24.58%, respectively, and a higher average number of words per turn, 5.1 and 3.4, respectively. Since Laura produces the least number of words and her average number of words per turn is the lowest, too, she is expected to make very short turns.

The difference in percentage of turns from the total number of turns is less than five points (0.31) between the student with the highest number of turns, Gael (36.41%) and the middle one Laura (36.1%). However, Laura is more than five points away from Sandro (8.61 points) and the total number of words per student and the average number of words per turn are also distributed very unequally.

The second group in this pattern is group L1b1. Table 6.36 presents the findings obtained in this group.

L1b1	Turns	Words	Av. words per turn
Student 1 <i>Ana</i>	249 34.97%	1279 33.03%	5.1
Student 2 <i>Sonia</i>	275 38.62%	1627 42.02%	5.9
Student 3 <i>Pedro</i>	188 26.41%	966 24.95%	5.1
Total	712	3872	

Table 6.36: Distribution of turns and words in the L1b1 group.

Results show that the distribution of turns lacks the equality factor as Student 3, Pedro, intervenes very little (26.41%) compared to the member with the middle value, Ana, with whom he has a more than 5 point difference. He has the lowest number of words (24.95%) although his average number of words per turn (5.1) is the same as that of Student 1, Ana. This indicates that although Pedro does not intervene much, when he does, he makes fairly long interventions. Student 1, Ana and Student 2, Sonia have more similar percentage of produced turns, although Sonia leads (34.97% and 38.62%, respectively; a difference slightly under 5 points). Student 2, Sonia, produces the highest number of words (42.02%) and has the highest average number of words per turn (5.9). Meanwhile, Ana is the second highest in the number of words produced (33.03%). In this small group, and as indicated previously, there is a difference of more than five points between Pedro, with the lowest value, and Ana, with the next value. The difference between these two members is high (8.56 points). The percentage of turns between Ana and Sonia (with the highest value is however smaller (3.65 points)).

Table 6.37 illustrates the results obtained in the L1b2 group.

L1b2	Turns	Words	Av. words per turn
-------------	--------------	--------------	---------------------------

Student 1 <i>Lucía</i>	335 36.69%	2343 39.17%	6.9
Student 2 <i>Carol</i>	329 36.03%	2275 38.03%	6.9
Student 3 <i>Juan</i>	249 27.27%	1364 22.8%	5.4
Total	913	5982	

Table 6.37: Distribution of turns and words in the L1b2 group.

In this group, the distribution of turns lacks the equality factor as Student 3, Juan, intervenes very little (27.27%) compared to the other two students (Lucía 36.69% and Carol 36.03%). He also produces the lowest number of words (22.8%) almost half less than the ones produced by the other two members (Carol 38.03% and Lucía 39.17%). Juan's average number of words per turn is also the lowest (5.4), as compared to Lucia's and Carol's average (6.9 both). This probably means that his turns are short in comparison with those produced by the other two members of his group. Juan (the member with the lowest value of percentage of turns) and Carol (who has the middle value) have a more than five point difference in percentage of turns (8.76) even though this last member and Sonia have similar percentage of turns that differ only 0.66 points (36.03% and 36.69%, respectively).

The results obtained in the fourth small group, L1b5, are presented in Table 6.38.

L1b5	Turns	Words	Av. words per turn (not L1)
Student 1 <i>Inés</i>	220 34.59%	1407 36.82%	6.3
Student 2 <i>Ben</i>	232 36.48%	1308 34.22%	5.6

Student 3 <i>Lorenzo</i>	184 28.93%	1107 28.96%	6
Total	636	3822	

Table 6.38: Distribution of turns and words in the L1b5 group.

In this group, the distribution of turns lacks the equality factor as Student 3, Lorenzo, intervenes less (28.93%) than the other two group members (Inés: 34.59% and Ben 36.48%) Lorenzo has the lowest number of words (28.96%) but his average number of words per turn is not the lowest one (6) in contrast with the other two students (Inés, 6.3 and Ben, 5.6). Therefore, he probably does not intervene frequently but when he does, his turns are fairly long. Student 2, Ben and Student 1, Inés have a similar number of turns (36.48% and 34.59%). However, Ben, is the second in the number of words (34.22%) and his turns are the shortest ones (5.6) while Inés uses the highest number of words (36.82%) and words per turn on average (6.3) out of the three. The difference in percentage of turns between the lowest value (Lorenzo) and the middle value (Inés) is slightly more than five points (5.66). In turn, the difference between this member with the middle value (Inés) and the one with the highest value (Ben) there is a small difference of less than 5 points. Therefore, and contrary to the groups described previously within this interactional pattern, there is a difference, however rather slight.

The last small group within this pattern is L1b6. Table 6.39 presents the results obtained by this group.

L1b6	Turns	Words	Av. words per turn
Student 1 <i>Celia</i>	333 37.8%	1974 36.35%	5.9
Student 2 <i>Andrés</i>	187 21.22%	1003 18.47%	5.3

Student 3	361	2454	6.7
<i>Guille</i>	40.98%	45.18%	
Total	881	5431	

Table 6.39: Distribution of turns and words in the L1b6 group.

Results show that the distribution of turns lacks the equality factor as Student 3, Guille, is the one that mostly intervenes (40.98%). He is also responsible for the most of the words produced in this group (45.18%) and his average number of words per turn is the highest (6.7). Student 1, Celia follows Guille in all parameters: number of turns (37.8%), falling close to him, thus but falling behind in the number of words (36.35%) and the average number of words per turn (5.9). Student 2, Andrés, is in the third position in the number of turns (21.22%). He also produces the lowest number of words (18.47%). In the average number of words per turn he is however quite close to Celia (Andrés: 5.3 and Celia: 5.9). Thus, Andrés seems to make very few turns compared to the other two members (Celia and Guille), however when he does participate, his turns are fairly long. Regarding the equality factor in turn distribution, between the member with the lowest value, Andrés and the one with the middle value, Celia, there is very high difference of more than 15 points. Even though between her and the highest in percentage of turns, Guille, there is a less than five point difference.

Within this interactional pattern groups with very pronounced differences (L1b6) and groups with slight differences (L1b5) between two leading members and one participating less have been presented. Even though this difference within each of the other small groups in this pattern is below 0.5%, drawing on the results presented for all five small groups (L1a1, L1b1, L1b2, L1b5 and L1b6), these cannot be categorized as fostering *equality* in terms of distribution of turns. Thus, they were not considered for the analysis in the second *equality factor*, control of the activity.

6.4.1.2.2 Groups high in equality in distribution of turns but low in control of the activity

In groups with high level of equality in distribution of turns presented in this section, another column with the distribution of the use of the *regulative* register per student was added to reflect the results on the second aspect related to *equality*, control of

the activity. Three L1 groups were categorized as *high in equality* in terms of distribution of turns but *low in equality* in terms of control of the activity: L1a3, L1a4 and L1a5.

Table 6.40 shows the distribution of turns and words in the L1a3 group.

L1a3	Turns	Words	Av. words per turn	Regulative register
Student 1 <i>Diego</i>	222 35.19%	1173 36.13%	5.2	44 32.56%
Student 2 <i>María</i>	207 32.48%	1109 34.15%	5.3	63 46.67%
Student 3 <i>Juan</i>	206 32.33%	965 29.72%	4.6	20.74%
Total	635	3247		135

Table 6.40: Distribution of turns and words in the L1a3 group.

Results show that the distribution of turns seems fairly equal. Student 1, Diego, is the one that mostly intervenes (35.19%). He also produces the highest number of words (36.13%) and uses the a rather high average number of words per turn (5.2). Student 2, María, and student 3, Juan, use slightly less turns than Diego (32.48% and 32.33%, respectively). Only one turn differentiates María and Juan, however Maria produces more words (34.15%) than Juan (29.72%), and her average number of words per turn is the highest (5.3) and Juan's is the lowest (4.6), which means that María's turns are the longest of the group and Juan's are the shortest. As the differences in the distribution of turns between the lowest percentage of turns (Student 3: 32.33%) and the next (Student 2: 32.48%) is less than five points and the same happens with the latter and the highest percentage (Student 1: 35.19%), and as the total number of words per student and the average number of words per turn differ only slightly, we can categorize this group as high in *equality* in this factor (see the green column).

This takes us to the results on the second *equality factor* referred to the control of the activity, where the use of the *regulative* register has been measured (see the last

column in Table 6.38). The results for the *regulative* register show that the activity has been mostly organized and controlled by Student 2, María (46.67%). Student 1, Diego also uses the *regulative* register too, although less frequently (32.56%) whereas Student 3, Juan, uses it the least (20.74%) as compared to the other two group members . Therefore, he is very far out in this factor.

The results of the second group in this pattern, L1a4, are shown in Table 6.41.

L1a4	Turns	Words	Av. words per turn	Regulative register
Student 1 <i>Elena</i>	316 32.95%	1742 36.01%	5.5	108 48.43%
Student 2 <i>Juan</i>	307 32.01%	1188 24.55%	3.8	56 25.11%
Student 3 <i>Gerardo</i>	336 35.04%	1908 39.44%	5.6	59 26.46%
Total	959	4838		223

Table 6.41: Distribution of turns and words in the L1a4 group.

These results show that the distribution of turns seems to be fairly equal. The student who participates the most is Student 3, Gerardo (35.04%). He also produces most of the words in the group(39.44%) and has the highest average number of words per turn (5.6). Student 1, Elena, and Student 2, Juan, participate similarly (32.95% and 32.01%, respectively). However, Elena produces a higher number of words (36.01%) than Juan (24.55%). This results in Elena having a considerably high average number of words per turn (5.5), which is very close to that of Gerardo, leaving Juan in the third position with the lowest average number of words per turn (3.8). Therefore, Elena probably intervenes less than Gerardo but her length of turn is similar to his; whereas Juan intervenes considerably less and with much shorter turns. Although there is a less than five point difference in the percentage between the lowest percentage of turns (Student 2: 32.01%) and the next (Student 1: 32.95%) and the last one and the first (Student 3: 35.04%), the difference in the total number of words per student and the average number of words per turn is quite

significant. Therefore, even if we can categorize this group as *high in equality* in turn distribution (the column is coloured in green to show this) this is done with big doubts and reservations because of the notable difference in the other two parametres measured in this aspect.

This takes us to the second *equality factor*, the control of the activity, where the use of the *regulative* register has been measured (see the last column in Table 6.39). Results show that the activity has been mostly organized and controlled by Student 1, Elena (48.43%). Student 3, Gerardo and student 2, Juan have a very similar percentage of the use of the *regulative* register (26.46% and 25.11%, respectively) and are very far out from Elena. Since the difference in the percentage in the use of the *regulative* register between Gerardo and Juan is less than 5 points (1.35) but between Elena and both of them comprises a more than 5 point difference (21.97 points with Gerardo and 23.32 points with Juan), the control of the activity is therefore not distributed equally within this group. This ratifies the reserves regarding the classification of this group mentioned previously.

The last small group within this pattern is group L1a5. Table 6.42 shows the distribution of turns and words in this group.

L1a5	Turns	Words	Av. words per turn	Regulative register
Student 1 <i>Pedro</i>	181 36.07%	986 40.54%	5.4	59 45.38%
Student 2 <i>María</i>	168 34.22%	786 32.32%	4.6	44 33.85%
Student 3 <i>Gustavo</i>	145 29.71%	660 27.14%	4.5	27 20.77%
Total	494	2432		130

Table 6.42: Distribution of turns and words in the L1a5 group.

Results show that the distribution of turns seems to be fairly equal. The one with most turns is Student 1, Pedro, who is the one that mostly intervenes (36.07%). He also produces the highest number of words (40.54%) and his average number of words per turn is the highest (5.4). Student 2, María, follows Pedro as she is the second in all three parameters: she produces slightly less turns than Pedro (34.22%) but her total number of words is notably lower (32.32%) and her average number of words per turn is also lower (4.6). Therefore, the difference in these categories between María and Pedro is pronounced. Student 3, Gustavo, is the member who intervenes the least (29.71%) and produces less words (27.14%), however, his average number of words per turn (4.5) is only slightly lower than María's.

As the differences between the lowest percentage of turns (Student 3: 29.71%) and the next (Student 2: 34.22%) is less than five points and the same happens with this last one and the highest percentage (Student 1: 36.07%), we can categorize this group as quite equal in relation to the distribution of turns (the column is coloured in green to show this). However, as in the case of the previous group (L1a4), this is done with reservations due to higher differences found in the total number of words per student and the average number of words per turn among the three members. The third column in Table 6.40 presents the results on the use of the *regulative* register (). It shows that the activity has been mostly organized and controlled by Student 1, Pedro (45.38%). María uses the *regulative* register quite a lot too (33.85%), however, Juan (20.77%) controls the activity on fewer occasions than the other two members. The differences in the use of the *regulative* register among the members is more than five points; Pedro has a 11.53 point difference with María and María has a 13.08 difference with Gustavo. The control of the activity is therefore not distributed equally within this group and this ratifies the reserves referred to above.

In sum, and following the results shown for the three groups: L1a1, L1a4 and L1a5, these cannot be categorized as having *equality* in the second factor related to the control of the activity.

6.4.1.2.3 *Equality and mutuality in L1 small groups*

Results in the L1 groups have shown a fairly unequal distribution of turns in more than half of the groups. Moreover, those three groups that met the *equality* requirements in one factor, the distribution of turns (L1a3, L1a4 and L1a5), did not meet them in the second factor, control of the activity. Therefore, none of the L1 groups will be closely examined in search of *mutuality* in the qualitative part.

6.4.1.3 *Summary of descriptive results*

Descriptive results from CLIL and L1 groups have presented a general picture of student interaction as full of inequality. Most of the distribution of turns in the L1 and some CLIL groups have been shown to be uneven. It is common to find the dominance or expertise of one member and the passivity or inexperience of the rest (Clila5, Clila8, Clila2 and Lb6), or the dominance or expertise of two members and the passiveness or inexperience of the third member (L1a1, L1b1 and L1b2). In those groups, where *equality* based on a fairly equal distribution of turns was found, the control of the activity was in hands of only one member (Clilb3, L1a3, L1a4 and L1a5) or two members (Clila3; Clilb4). Thus, from a total of sixteen groups, only two CLIL groups could be categorized as *high equality* groups (Clilb1 and Clilb6).

A further qualitative examination of the group interaction in those two groups has shown that, Clilb1 is the only one that can be categorized as having *high equality and mutuality*, although some differences across activities have appeared. Clilb1 seems to have more *mutuality* aspects in the PSA than in the STA. In other words, Clilb1 could be categorized as a *collaborative group* (Storch, 2002), especially in the PSA. In turn, Clilb6, where ideas were shared but there was a lack of mutual feedback, could be categorized as a more *dominant/dominant type of interaction*. In the following section, we will draw comparisons, focusing on *equality* and *mutuality* aspects, between the CLIL and the L1 classes and across activities.

6.4.2 *Part 2: Comparative results*

In this second part, comparisons between the CLIL and L1 classes and across the the STA and PSA will be made. The presentation of results will follow the same structure used in the previous descriptive section. The quantitative results of the interactional

layer were obtained through the UAM Corpus Tool. Later these results were used in the elaboration of graphs to make the large amount of data observable. Two comparisons were made: CLIL and L1 groups and STA and PSA.

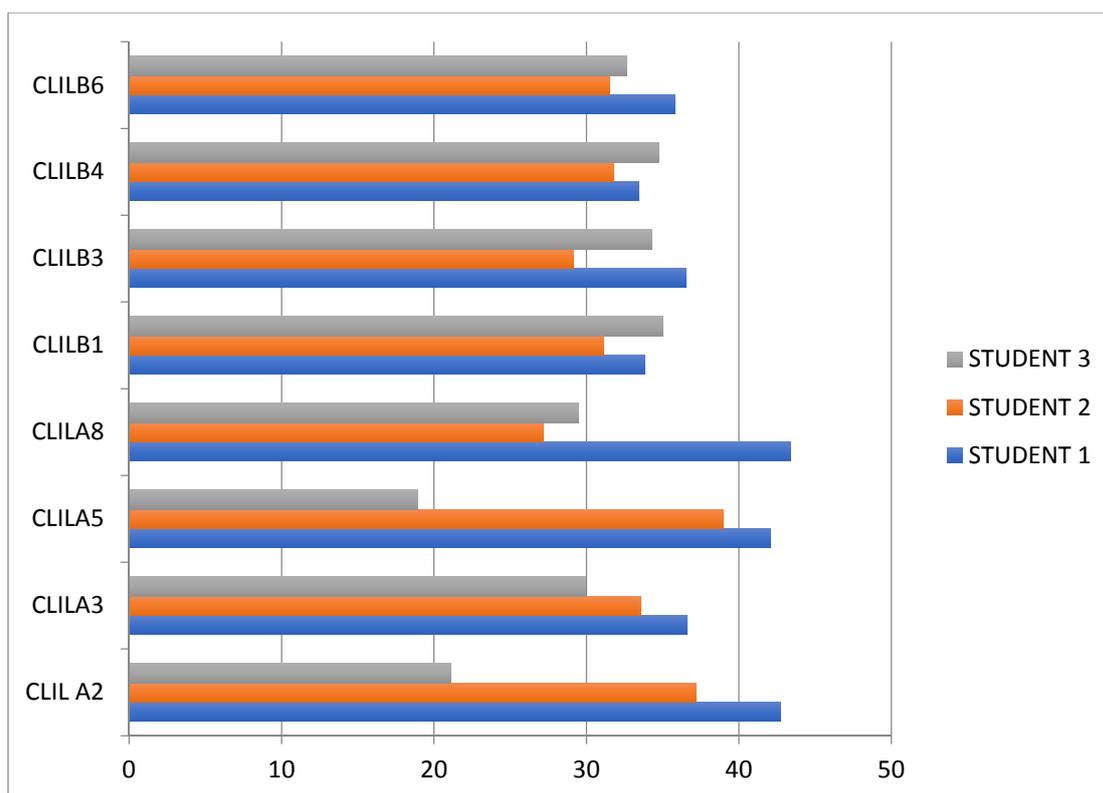
6.4.2.1 Across groups: CLIL versus L1

Table 6.41 shows the general distribution of turns and words in the CLIL and L1 classes. This gives a general overview of results: L1 students use a higher number of turns, use more words and their turns are slightly longer as compared to the CLIL class.

	Turns	Words (excluding L1 words in CLIL)	Av. Words per turn
CLIL	5452	27,415	5
L1	5892	32,977	5.5

Table 6.43: Distribution of turns and words by the CLIL and L1 classes.

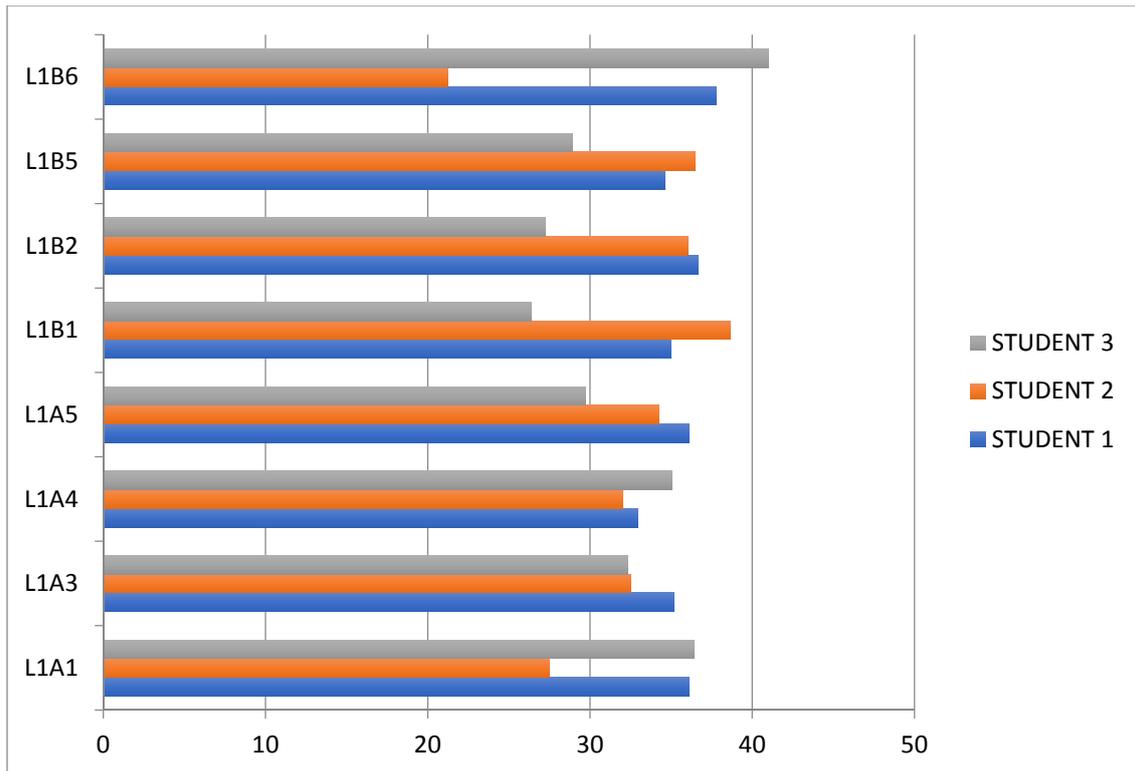
Graph 6.3 presents the results on the distribution of turns obtained in the CLIL class.



Graph 6.3: Percentage of turns per student in the CLIL groups

The graph summarizes the results presented in the descriptive part of the results in CLIL groups in this layer: all small groups in CLIL B class show a fairly high *equality* in turn distribution (Clilb1, Clilb3, Clilb4 and Clilb6). This was the reason why all small groups in this class were eligible for the second *equality* factor: control of the activity through the use of *regulative* register as will be presented later. In turn, only one group from CLIL A class was found to be high in the first *equality* factor (Clila3). The rest of the groups in this class show a sharp difference in the distribution of turns between one member and the rest of the group.

Graph 6.4 presents the results on the percentage of turns per student and group retrieved from the two L1 classes (L1 A and L1 B).



Graph 6.4: Percentage of turns per student in the L1 groups

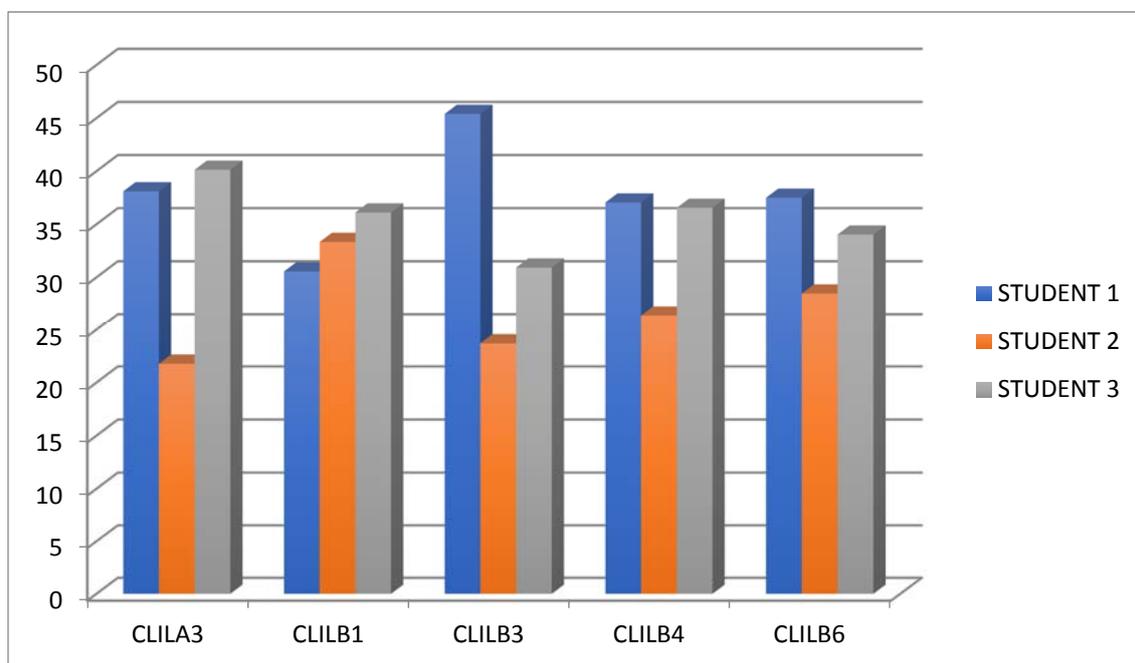
As stated in the descriptive section of the results in L1 groups in this layer, most groups present a pronounced difference between one of the members and the rest, resulting in one student intervening a lot and the other two participating much less. We find this situation in all small groups in L1 B class (L1b1, L1b2, L1b5 and L1b6) and one small group in L1 A class (L1a1). The rest of the groups in L1 A class (L1a3, L1a4 and L1a5) show a fairly equal distribution of turns and were considered for the analysis in the second *equality* factor.

When comparing Graphs 6.3 and 6.4 above, results show that the distribution of turns in the randomly selected groups in the CLIL class favours the first *equality* factor (distribution of turns) more than in the L1 class since the difference in the percentage of turns among group members is smaller within the CLIL class, especially within the CLIL B class. As explained previously, *equality* in terms of distribution of turns was assigned to those groups that had a no more than five point difference in the percentage of turns among the group members. In all L1 small groups categorized as non-equal there was always a member who seemed to be passive or did not participate enough in comparison with the other two members,

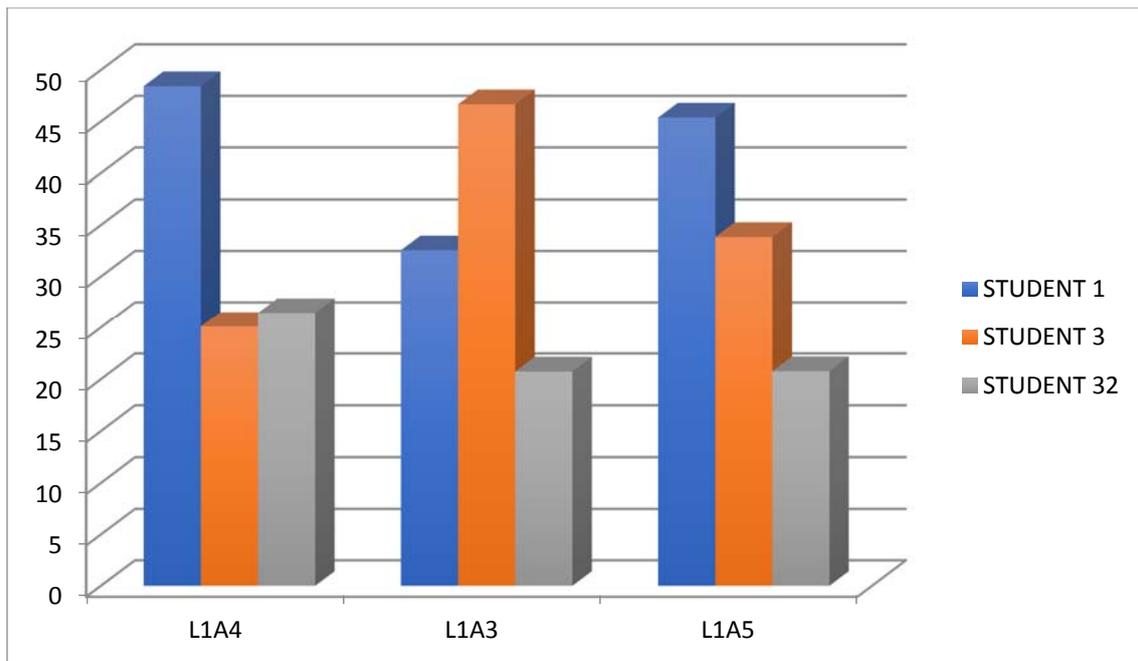
who produced a higher number of turns. In CLIL small groups categorizes as unequal in this first factor, the same pattern is seen except for Clila8, where one member is highly participant and the other two remain passive or inactive (see section 6.4.1.1.1 for earlier references to this group).

In what concerns small groups that have *high equality*, a similar pattern emerges in both the CLIL and L1 groups, where two members of the small groups produce a high percentage of turns as compared to the third member, whose intervention rate remains low. However, the difference between the two more participating members and the one that participate less is not as big as in the unequal groups. L1a3 is an exception in this pattern in that it presents the reversed pattern: in this group one member produces a high percentage of turns and the other two members produce a lower percentage, making thus the same pattern but reversed.

Graphs 6.5 and 6.6 present the results of the second *equality* factor, control of the activity through the use of the *regulative* register, in CLIL and L1 small groups.



Graph 6.5: Percentage of *regulative* register per student in the CLIL groups



Graph 6.6: Percentage of *regulative* register per student in the L1 groups

Graph 6.5 shows that in Clilb3 the *regulative* register is in the hands of only one member of the group. Whereas the results of Clila3, Clilb4 and Clilb6 show a tendency to keep control of the activity between two members of the group. Finally, only one group, Clilb1, presents a fairly equal distribution of the *regulative* register among the three members. When we move to the results of L1 small group, Graph 6.9 shows that in all three L1 groups the *regulative* register is mostly used by one member of the group which leads to their predominant control of the activity.

To sum up, the comparison between the CLIL and L1 class shows both similarities and differences. In both datasets, small groups with *low equality* in terms of the distribution of turns show fairly similar patterns, most of the times with two members intervening the most and the remaining member participating significantly less. The CLIL and L1 with a *high equality* in terms of distribution of turns also show a similar interactional pattern in their use of the *regulative* register, dominated by one member. Differences, however, have been found in a higher number of groups with *high equality* in the distribution of turns in CLIL classes as compared to L1 classes. In other words, results show the presence of more equal groups in CLIL classes than in L1 classes.

In the next section, comparisons will be drawn across activities (STA and PSA).

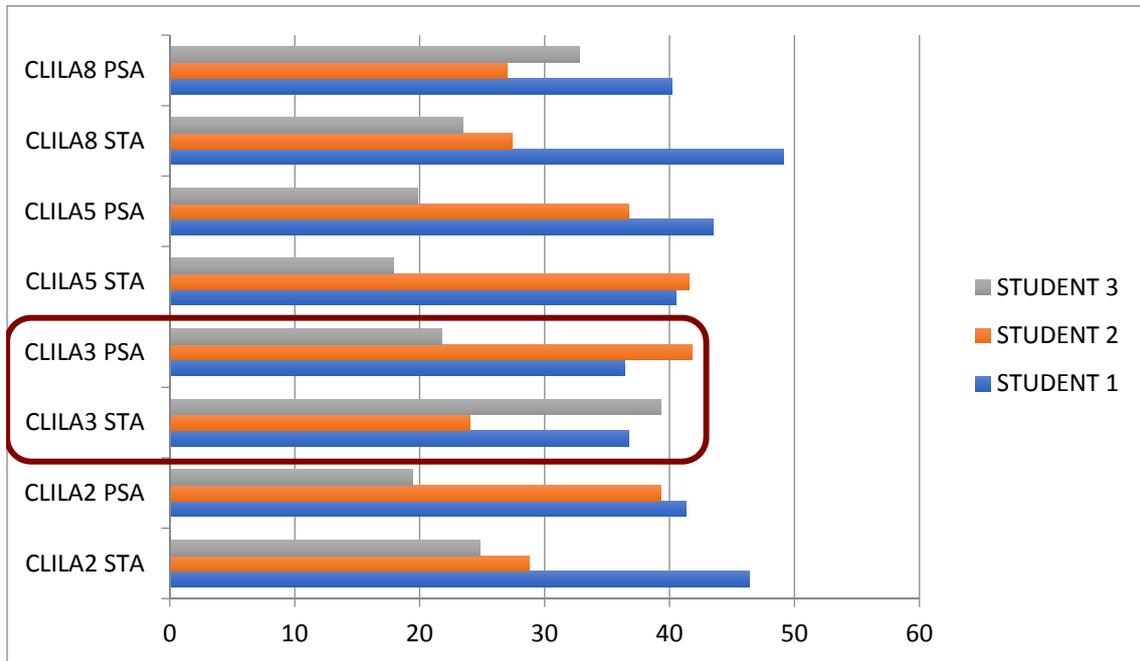
6.4.2.2 Across activities: STA versus PSA

This section compares the results on the distribution of turns across the two activities in both the CLIL and the L1 class. In light of the relevant features found in these results, a further analysis of the distribution of the *regulative* register in these groups will be performed.

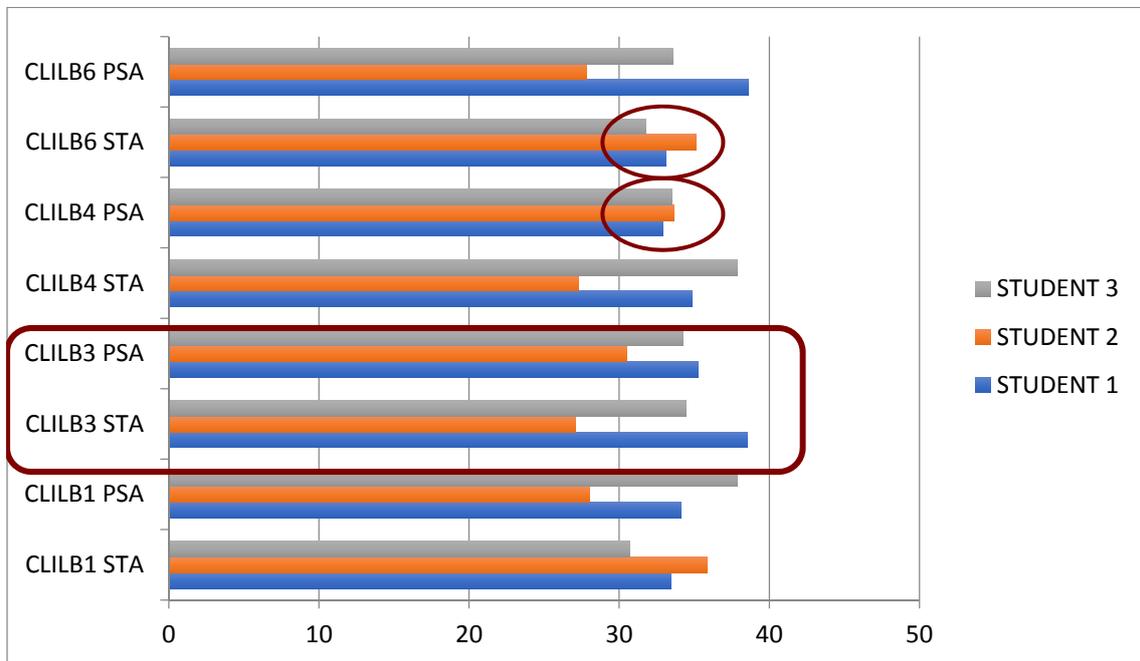
6.4.2.2.1 Distribution of turns in CLIL groups

This section only presents the results that differ from those obtained jointly for both activities (STA and PSA) in the descriptive section 6.4.1. In the comparison across activities, results show that most group members have a different participation rate depending on the activity type and all groups differ in their distribution of turns across activities. Following these results, the groups categorization according to the identified interactional pattern in the descriptive section would be activity dependant, that is, the pattern described depends completely on the activity at hand. In order to facilitate the presentation of the differences across activities, the results of the groups will be presented following the same categories as in the descriptive section.

Graph 6.7 shows the distribution of turns in percentages in each activity per group for all four small groups in CLIL A class and graph 6.8 shows the same distribution in all four small groups in CLIL B class.



Graph 6.7: Percentage of turns per student in the Science topic discussion Activity (STA) and the problem solving discussion activity (PSA) by the CLILA groups



Graph 6.8: Percentage of turns per student in the Discussion activity (STA) and the problem solving activity (PSA) by the CLILB groups

In the STA the pattern is very unequal, with Student 3 leading (37.88%), Student 1 following (34.85%) and Student 2 staying very far behind (27.27%). The unequal distribution of turns present in the STA probably influenced the results retrieved in the descriptive section where both activities were considered jointly. However, in the PSA, Student 2 increases his intervention around 7 points (33.64%) which results in a very equal distribution of turns in this activity (Students 2 and 3 having almost the same rate, 33.64% and 33.48%, respectively, and Student 1 following them very closely, 32.88%). This results in a very different interactional pattern for this group across activities.

Third, and within the two groups categorized as *high in equality* in both turn distribution and control of the activity (Clilb1 and Clilb6), in the activity comparison, the *equality* results retrieved in the descriptive section are questioned. In Clilb1, a very different pattern takes place depending on the activity type and neither of the activities (PSA or STA) meets the *equality* criteria met in the descriptive section. However, the difference in the STA is very slightly over the criteria with Student 2 having the highest percentage of turns (35.87%), followed by Student 1 (33.43%) and lastly by Student 3 (30.7%). However, in the PSA, it is Student 3 who has the highest percentage of turns (37.84%) and Student 2 the lowest (28.04%), with Student 1 in between (34.12%). Thus, the differences in percentages of turns are slightly higher than 5 points in the STA and significantly higher in the PSA.

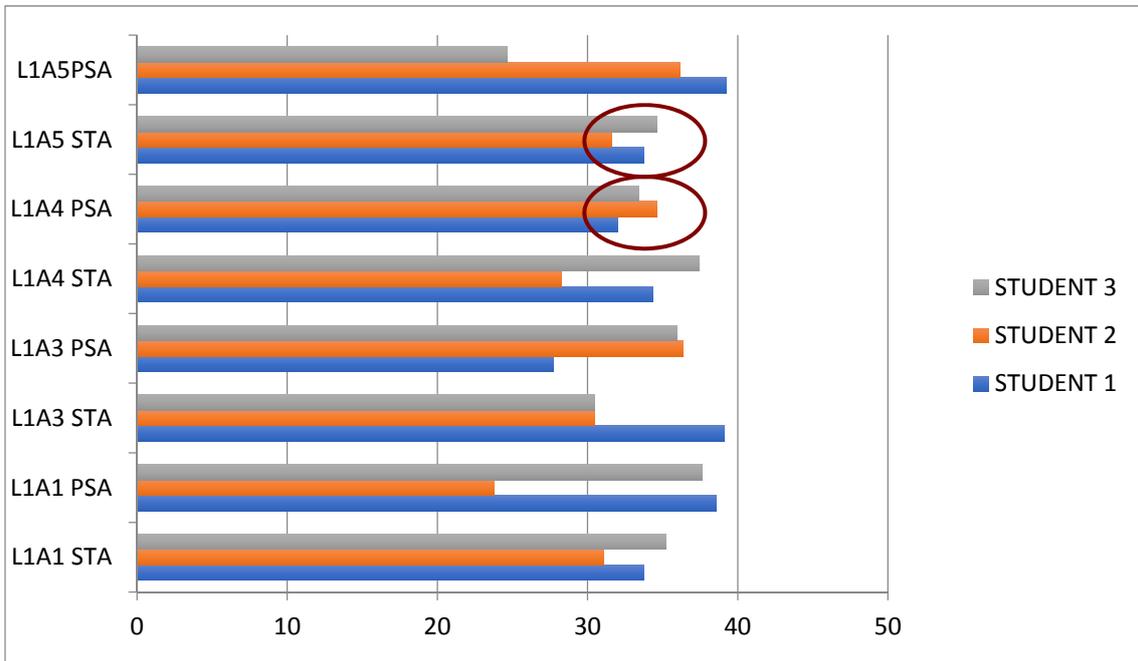
In Clilb6, only the distribution in the STA maintains the *equality* criteria since there is a less than 5-point difference in the distribution of turns in this activity. Student 2 has the highest percentage of turns (35.1%), Student 1 is the second (33.11%) and Student 3 is the third (31.79%). The change in the interactional pattern across activities in this groups is mainly performed by Student 2 since, in comparison to the STA, in the PSA, Student 2 has the lowest percentage of turns (27.85%), with Student 3 as the second (33.56%) and Student 1 as the highest (38.59%). Thus, the differences in percentages of turns are lower than 5 points in the STA and significantly higher in the PSA.

In sum, this comparison across activities has shown some differences within the categories made in the descriptive section. First, the *equality* results obtained in Clilb1 in both activities but mainly connected with the PSA are questioned. Second, the *equality* results for Clilb6 in the PSA are also put into doubt. On the contrary, new *equality* candidates emerge: Clilb4 in the PSA and Clilb6 in the STA (see circles in Graph 6.10).

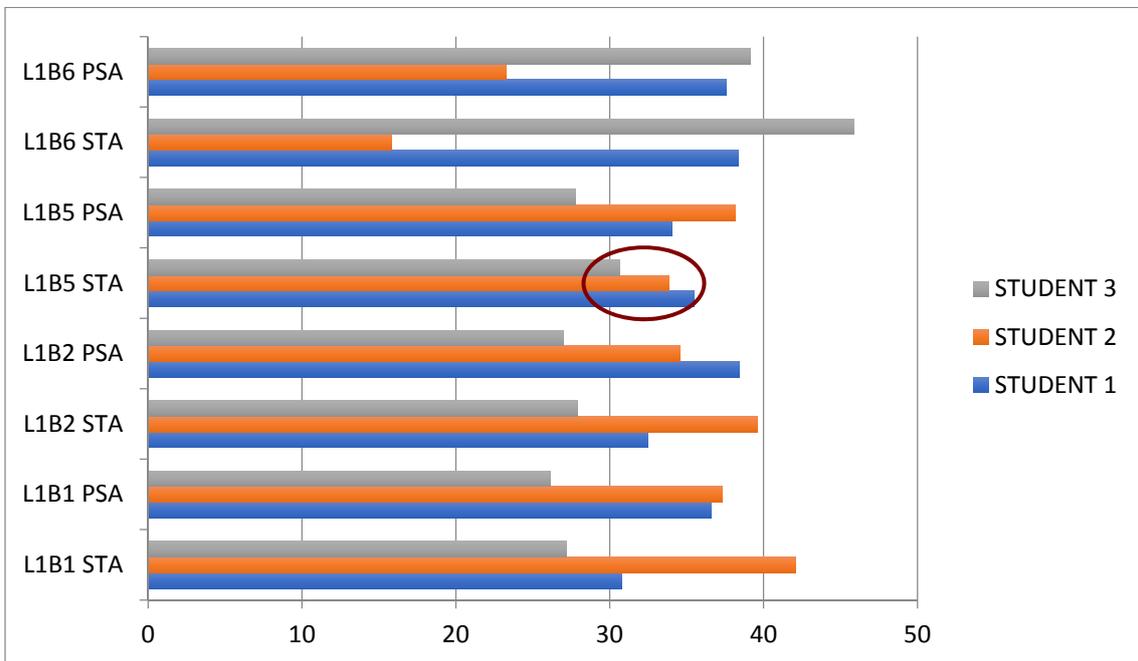
6.4.2.2.2 *Distribution of turns in L1 groups*

As previously found in the CLIL group, in the results of the comparison across activities in the L1 group, it is shown that most group members have a different participation pattern depending on the activity type. Only two small groups maintain the interactional pattern within turns in both activities: L1b1 and L1b6. As previously done for CLIL groups, this section only presents the results that differ from those obtained jointly for both activities (STA and PSA) in the descriptive section 6.4.1.2. The presentation of the comparative results here will follow the same group categorization into two interactional patterns as in the descriptive section.

Graph 6.9 shows the distribution of turns in percentages in each activity per group for all four small groups in L1A class and graph 6.10 shows the same distribution in all four small groups in L1B class.



Graph 6.9: Percentage of turns per student in the STA and the PSA in L1 A class



Graph 6.10: Percentage of turns per student in the STA and the PSA in L1 B class

The first pattern was *low in equality* in terms of distribution of turns. Within this category were five small groups (L1a1, L1b1, L1b2, L1b5 and L1b6). All these groups, except L1b5, maintain the inequality across activities. L1b5 emerges as having *high equality* in distribution of turns in the STA (see circled area in graph 6.13). As for the rest of the groups, for example in L1b1, while students perform the STA, Student 1 has the second highest number of turns (30.77%) well after Student 2 (42.05%), however, in the PSA, Student 1 increases the percentage (36.56%) and Student 2 decreases (37.33%), which makes them come closer in their participation rate. In group L1b6, a similar transition is made from one activity to the other. The student 2, who intervenes the least in the STA (15.83%) has a more than 10-point difference with Student 1 (38.33%) and 20-point difference with Student 3 (45.84%). However, in the PSA, Student's 2 percentage increases (23.24%) while Student's 3, the first in both activities, decreases (39.16%), whereas Student's 1 rate remains the same. In L1b1 then, the general distribution of turns stays relatively stable but there is a difference across activities within turn percentages and therefore, inequality in turn distribution is maintained. Other groups also changed in the members holding the lead in the number of turns produced. The most frequent pattern is that the second member with the highest percentage of turns in the STA becomes the first one in the PSA (e.g., Student 1 in L1a1 and L1b2). However, as stated before, in these groups the *low equality* in terms of distribution of turns remained the same.

The only group that emerged as *high in equality* was L1b5 and only within the STA. This group, whose strong inequality in distribution of turns is present in the PSA (Student 2, with the highest percentage of turns produced is almost 10-points above Student 3), does fulfill the *equality* criteria in the STA. It seems that Student 3, that was lagging behind, caught up the other members by increasing the number of his interventions (30.68%) whereas the other two (Student 1: 35.46% and Student 2: 33.86.%) slightly decreased the number of theirs.

The second category was three small groups *high in equality* in terms of distribution of turns but *low in equality* in terms of control of the activity (L1a3, L1a4 and L1a5). Thus, L1a3 shows inequality in distribution of turns in both activities, therefore it

must be concluded that the *equality* results obtained in the descriptive section 6.4.1.2 were probably falsely produced when comparing both activities. This could probably be caused by the significant changes in the interactional pattern. As we can observe in graph 6.12, the member that participates the most in one activity, e.g. Student 1 in the STA, participates the least in the other activity, PSA.

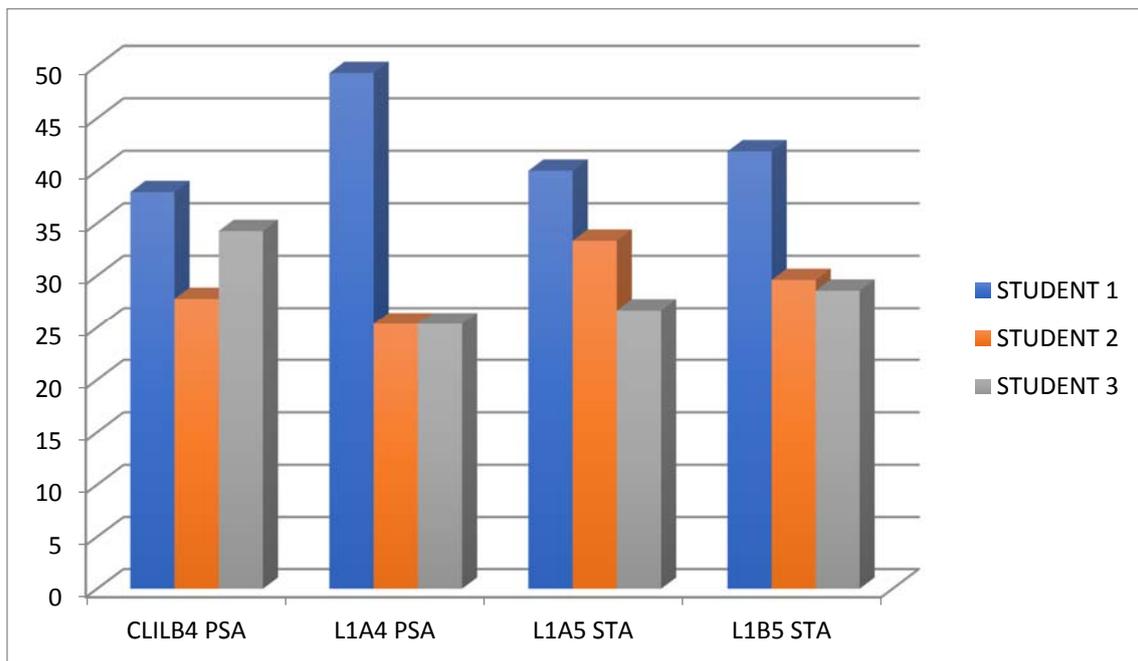
L1a4 maintains its *equality* in the distribution of turns in the PSA, with a less than 5-point difference between the lowest value and the middle value (Student 1: 31.98% and Student 3: 33.39%) and the middle value and the highest (Student 3: 33.39% and Student 2: 34.63%). In contrast, a strong inequality emerges in the STA between members with the lowest and the middle value in percentage of turns (Student 2: 28.24% and Student 1: 34.35% respectively) although the difference remains below 5 points between the referred member with the middle value, Student 1, and the member with the highest value (Student 3: 37.41%). L1a5 appears to maintain its *equality* in the STA with a less than 5-point difference between the lowest and the next (Student 2: 31.62% and Student 3: 34.62%) and that same Student 3 and the group member with the highest value (Student 1: 33.73%). However, the group shows a strong inequality in the PSA between the member with the lowest percentage of turns and the next (Student 3: 24.62% and Student 2: 33.15%) and this last middle value member and the Student with the highest percentage (Student 1: 39.23%).

In sum, these comparative results on L1 small groups across activities has shown some differences within the categories and across activities. In L1a3, the *equality* results obtained in both activities are questioned, in L1a4 they are questioned only in the PSA and in L1a5 they are questioned in the STA (see circled areas in Graph 6.12). In addition, the *equality* criteria in the distribution of turns is maintained in L1a4 in the PSA, and in L1a5 in the STA, and a new *equality* candidate in terms of the distribution of turn emerges in L1b5 in the STA.

6.4.2.2.3 Distribution of the control of the activity across activities

In this section, the groups in both CLIL and L1 classes that have emerged as new *equality* candidates or that have maintained their *equality* within one of the

activities in the comparative sections 6.4.21 and 6.4.2.2 will be further analysed. Results have shown the need to further examine groups Clilb4 and L1a4 in the PSA and groups L1a5 and L1b5 in the STA in terms of the second *equality factor*: control of the activity as measured through the use of the *regulative* register among group members. Clilb6 will not be further examined as it has been qualitatively analysed in the descriptive section. Graph 6.11 shows the percentage of the use of the *regulative* register per student in each of these groups and activities as indicated above.



Graph 6.11: Percentage of *regulative* register per student in the Clilb4 and L1a4 groups in the PSA and the L1a5 and L1b5 groups in the STA.

Results show that the *equality* tendency is not present when taking into account this factor. The group that comes closest is Clilb4 in the PSA. However, the difference between the lowest percentage (27.78%) and the second highest (34.26%) is greater than 5 points (6.48). This means that none of these groups, not even Clilb4, can be categorized as high in equality, not even in one of the two activities. However, since Clilb4 is the closest in this factor, it will be further and more qualitatively analysed.

When taking a closer look at group interaction in Clilb4 (see extract 6.64), we can observe that the three group members intervene in a rather equal way: Student 1, Eva, and Student 3, Raúl, with 3 turns each, and Student 2, Jorge, with 2. However, they use a very direct and imperative way of interacting, with examples from student 1 (Eva, lines 3, 5 and 7), student 2 (Jorge; lines 1 and 8) and student 3 (Raúl; lines 2, 6 and 9).

- 1 *Jorge: **This we've.. already done it (REGULATIVE REGISTER)***
- 2 *Raúl: **Eight, no? we put it (REGULATIVE REGISTER)***
- 3 *Eva: **Yes, we put it, pass.. (REGULATIVE REGISTER)***
- 4 *Raúl: **Ehh***
- 5 *Eva: **pass..pass, (REGULATIVE REGISTER)***
- 6 *Raúl: **The eight.. we put it (REGULATIVE REGISTER)***
- 7 *Eva: **Raúl! (REGULATIVE REGISTER)***
- 8 *Jorge: **Pass, pass, pass (REGULATIVE REGISTER)***
- 9 *Raúl: **Yes, yes, yes ((he prepares the page)) (REGULATIVE REGISTE***

Extract 6.64: Clilb4 using the *regulative* register in the PSA

However, results in Graph 6.15 above picture an unequal distribution of the *regulative* register. Namely, Student 2 (Jorge) uses it notably less than the other two members (Student 1; Eva and Student 3, Raúl). Other uses of the *regulative* register are illustrated in extract 6.65 where the interventions are again held more by Eva (lines 1, 3 and 6) and Raúl (lines 2 and 5) than by Jorge. In this situation, the teacher asked the members of Clilb4 to move to a different table. Eva and Raúl organize the moving around.

- 1 *Eva: **Okay, I put here (regulative register)***
- 2 *Raul: **Jorge, Jorge, Jorge, you here (regulative register)***
- 3 *Eva: **You go there? ((to Jorge)).. Okay. like that..I like more the other seat***
- 4 ***(regulative register)***
- 5 *Raúl: **Me yes, but like this, it [doesn't matter] (regulative register)***
- 6 *Eva: **[[It doesn't matter]] (regulative register)***

Extract 6.65: Clilb4 using the *regulative register* in the PSA

In extract 6.6.5, we see how Raúl (Student 3) and Eva (Student 1) take control of the situation. Jorge (Student 2) just complies with the order and moves to the seat assigned to him by Eva. Jorge is a very active and participative student and likes participating in classroom activities, however, he is more timid than the other two and in moments where organising and controlling aspects are being dealt with and not the content of the activity, he seems to be little interested in intervening. This might account for the big difference found in the percentage of his use of the *regulative* register (Student 2, Jorge) compared to the two other members (Students 1 and 3; Eva and Raúl, respectively).

In sum, and in the light of these extracts, the difference in the distribution of the *regulative* register across activities is set in context. Yet, none of the small groups in either CLIL or the L1 classes can be considered *equal* in both the participation and the control of the activity by their members.

6.4.2.3 Summary of comparative results

The comparisons of the results between the CLIL and the L1 class in the first *equality* factor have acknowledged a generally stronger difference in the distribution of turns by the group members in the L1 class as compared to the CLIL class. Therefore, inequality in turn distribution is more present in the L1 data than in CLIL data. However,, in terms of the second *equality* factor, control of the activity through the use of the *regulative* register, two small groups in the CLIL data (Clila3 and Clilb3) have presented similar significant differences as the ones retrieved from the L1 data. whereas three groups (Clilb1, Clilb4 and Clilb6) have also shown smaller differences in the control of the activity among group members than the L1 groups.

The comparison across activities has presented a very different turn distribution pattern depending on the activity. The majority of groups show different interactional behaviours related to the distribution of turns when performing one activity (STA) or the other (PSA). These results have allowed to identify several new groups that seemed to fulfil the first *equality factor* (distribution of turns) in at least one of the activities (STA: L1a5 and L1b5; PSA: Clilb4 and L1a4). In addition, the

descriptive results of one group (Clilb1) in the second *equality* factor (distribution of the *regulative* register) has been questioned in both activities, but especially in the PSA.

Finally, results obtained in the descriptive part have underlined the need for a comparative analysis of the results in order to disentangle falsely driven descriptive results. After the comparative analysis, none of the CLIL or L1 groups can be classified as having *high equality* in each activity or both activities when taken separately.

6.4.3 Summary of results on the interactional layer

The results retrieved from the interactional layer give us an overview of the relation and organizational aspects of the group activities in both groups (CLIL and L1) and in both activities (STA and PSA). The results on *equality* and *mutuality* have been presented in order to determine the interactional patterns present in CLIL and L1 groups. In the descriptive analysis, two CLIL small groups were put forward as possible *collaborative groups* (Clilb1 and Clilb6) and, after a further qualitative analysis, only one group (Clilb1) remained in this category since it fulfilled both *equality* and *mutuality* aspects. Clilb6 was found to have a more *dominant/dominant pattern* as little co-construction on other members' comments and little feedback was found. In the comparative analysis of the results, it has been shown that there is a tendency for more *equality* in the CLIL groups. The comparison across activities helped to identify new patterns in *equality*, however, without bringing new insights into the general results on each class. The previous descriptive results of some small groups were questioned in both activities (Clilb1 and L1a3), others were connected with one of the two activities (Clilb6, L1a5 and L1a4) and other possible groups qualified in *equality* in one of the activities emerged (Clilb4 and L1b5).

In sum, results have shown that in some groups that have *high equality* in both factors (distribution of turns and control of the activity), some *mutuality* factors (such as feedback, asking for opinions, giving opinions) appear to be more of the *expert/novice* pattern (Storch, 2002). In contrast, in those groups whose interactional patterns was described as *low in equality*, members seemed to have a

more *dominant/passive* role (Storch, 2002). With this last layer of the analytical model, the picture of the connection between the language and the cognition in our CLIL and L1 settings can be sketched out. This negative picture given by the unequal and non-mutual interactional patterns used by students in small group work requires intervention, which was done in the next stage of the study. Results of this intervention will be presented in the next chapter.

6.7 Chapter summary and brief discussion

Chapter 6 presented the findings related to the Part 1 of the study. The chapter has shown quantitative and qualitative results on all three layers of the model: the discourse layer was addressed in a quantitative way and examples of the relevant features from these results were presented qualitatively. The same process was followed with the knowledge layer and the interactional layer. The aim of this chapter was to answer RQ1, RQ2 and RQ3, which are the following:

- RQ1: How is knowledge co-constructed in CLIL and L1 group-work activities?
- RQ2: Are there differences in the three layers (discourse, knowledge and interactional layers) between CLIL and parallel groups working on the same activities in the L1? If so, which are they?
- RQ3: Are there differences in the three layers when students' in CLIL and L1 groups participate in a science topic discussion and in a problem solving discussion? If so, which are they?

RQ1 was answered through a descriptive part of both CLIL and L1 classes. RQ2 and RQ3 were answered in the comparative parts of the analysis. Both sections provided answers for all layers.

In relation to RQ1, results have demonstrated that in the co-construction of knowledge, CLIL students tend to start their turns by *giving facts* or *evaluations* most of the times. When continuing their conversations, others tend to *respond* most of the times in a *supportive* way and through *explanations*; in addition, *disagreements* tend to be followed by *justifications*. CLIL students also favour the use of the *instructional* register and in their interaction they tend to distribute their turns

fairly evenly, although some might have the control of the activity more than the others. Their model of interaction is familiar to the *expert/novice* dyadic pattern; however, some examples of *dominant/passive* pattern may also occur.

In relation to how L1 students co-construct knowledge, results show that they generally *initiate* their turns by *giving facts* or *evaluations* and other members *respond* mostly in a *supportive* way. *Explanations* are frequent when *responding* and justifications are used after *disagreements*. The use of the *instructional register* is also predominantly performed by the L1 students. When interacting, there tends to be one or two members that intervene the most, being *dominant/passive* is the most common pattern of dyadic interaction .

In relation to RQ2, the comparisons across groups (CLIL and L1) have put forward several differences. The results have shown a more frequent use of the *continuing* move *monitor* by the L1 students and a more frequent use of the *responding* move *rejoinder-track* by CLIL students. Findings have also demonstrated that L1 students use *social talk* on more occasions than CLIL students and that they prefer to *initiate* their turns by *giving facts* more than their CLIL peers. L1 students also favour *confronting* moves with *prolonging facts*, *explanations* or *evaluations* when responding more than CLIL students.

CLIL students, on the contrary, favour *evaluations* in their *initiations* and their use of *regulative* and *instructional* registers is higher than in the L1 group. In their interactions, CLIL students have a more equal distribution of turns than the L1 groups. However, there is no *equality* in either CLIL or L1 groups in the control of the activity. In the qualitative analysis performed to two groups in CLIL classes and L1 classes, respectively, in search of *mutuality*, certain examples of feedback and giving and asking for opinions were found. However, these examples, that characterize an interactional pattern *high in mutuality*, were only occasional. Therefore they were not conclusive enough to categorize groups as *high in mutuality*.

In relation to RQ3, the comparisons across activities (STA and PSA) have put forward a series of differences in all layers and across activities. Results in this

comparative section across activities have drawn a very different picture from one activity to the other. The STA has favoured a higher use of *regulative* register and *social talk*. It also has promoted *initiations* using *demands* and *explanations* and a more frequent use of *support* when students were responding. Within *confronting* moves, *facts* have been shown to be the preferred option in this activity.

In what refers to the PSA, findings show that students tend to *initiate* by *giving information* and that their use of the *instructional* register is higher than in the STA. Results have, however, shown a higher number of *disagreeing* moves within this activity, which is generally followed by a *prolong-explanations*. Students interactional patterns are also very different across activities. The fact of students performing a discussion around the STA or around the PSA has brought changes in both *equality* factors: the distribution of turns and the distribution of the *regulative* register. However, once further analysed, this variations do not alter *equality* results and therefore do not change the interactional pattern assigned to each group.

This chapter presented a detailed description and comparison, layer by layer, of the data both in CLIL and L1 groups and across activities. These results open the door for the execution of an intervention programme aimed at improving the quality of small group talk and reasoning. In the next chapter, and in order to answer RQ4 and RQ5, the results of the *Thinking Together* intervention programme that constitute Part 2 of this study are presented.

Chapter 7: Co-construction of knowledge in Raven's test of progressive matrices

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7.1 Introduction

Following chapter 6, this chapter presents the results of Part 2 of this study and will focus on the findings related to the effects of the TT intervention programme. In order to develop the programme two teachers out of the four participating in this research were randomly selected, that is, one teacher from CLIL and L1 classes (CLILA; CLILB and L1A and L1B), respectively. These two teachers attended one-morning training session on the *Thinking Together* programme led by the researcher. After this session, during approximately three months, the two teachers developed 10 lessons in their classrooms, following the adapted TT intervention programme. This programme aimed to improve the quality of small group talk, collaborative learning and joint reasoning skills. The research questions addressed in this chapter are the following:

RQ4. How do CLIL and L1 groups solve problems in the Ravens test of progressive matrices?

RQ4.1 Is there any difference between the CLIL and L1 experimental groups (CLILA vs L1A) before and after the intervention? If so, which are they?

RQ4.2 Is there any difference between the CLIL and L1 experimental and control groups (CLILA vs CLILB and L1A vs L1B)? If so, which are they?

RQ4.3 Is there any difference between the CLIL and L1 experimental groups (CLILA vs L1A) after the intervention? If so, which are they?

RQ5. How is knowledge co-constructed in the CLIL experimental group (CLILA) before and after the intervention?

RQ5.1 Are there any differences when compared with the L1 experimental group (L1A)? If so, which are they?

RQ5.2 Are there any differences across the two activities (PSA after the intervention and STA)? If so, which are they?

RQ4 and RQ5 seek to explore whether the results obtained in previous studies on the effects of the TT intervention programme on the quality of classroom talk (Mercer et al., 1999; Rojas Drummond et al., 2003) could also be applied in a CLIL context. For this study, a similar intervention programme was elaborated and

implemented. The results in the previous studies on the TT programme and this study were measured in terms of group reasoning by using Raven's Test of Progressive Matrices (RTPM). RQ4 seeks to find out if the gains found in previous studies in L1 contexts (one in an L1 English context in the UK and another in an L1 Spanish context in Mexico) are also found in CLIL groups and parallel groups studying the same content in the L1 (Spanish). RQ5 compares the results of two classes that followed the programme (one CLIL and one L1 experimental group, CLILA and L1A, respectively) across activities. The aim of this part is to determine the effects of the intervention on the three layers of analysis (discourse, knowledge and interaction) and across the two different group work discussion activities (STA and PSA).

In order to tackle these questions the present chapter is divided into two parts. The first part of the chapter aims at answering RQ4 and the second part – RQ5. In the first part, first, the results obtained in the Raven's Progressive Matrices Test in the CLIL experimental class (CLILA) and in the L1 experimental class (L1A) will be described separately (section 7.2.1). This section is only quantitative and includes results before the TT programme (T1) and after the TT programme (T2). Second, comparisons between the experimental groups (CLILA and L1A) and the control groups (CLILB and L1B) as well as within the experimental groups (CLILA and L1A) will be carried out (section 7.2.2). This comparative section also includes only quantitative results.

In the second part of the chapter, results on the multi-layered model that comprises the discourse, knowledge and interactional layers proposed in this study will be presented (section 7.3). Following this model, the results of both quantitative and qualitative examination of one small group from CLILA and one small group from L1A before and after the intervention (T1 and T2) will be presented. Due to time and space constraints, only two groups from each experimental class were randomly chosen to be analysed (Clila3 and L1a4). This will be followed by a comparison, always on the three analytical layers, across these two groups (Clila3 and L1a4) in the T2 and across activities in Clila3 group in T1 and T2 (PSA and STA).

7.2 Raven's test quantitative results

In this section the results of the Raven's Test of Progressive Matrices (RTPM henceforth) obtained in the two CLIL classes (CLILA and CLILB) and the two L1 classes (L1A and L1B) will be presented. Firstly, the results for the two experimental classes (CLILA and L1A) before and after the TT programme will be shown. In the second part of this section the results of the control classes (CLILB and L1B) will be presented in order to draw comparisons with the experimental classes. As stated before, all of the findings put forward in this section are quantitative, as they comprise the results of the RTPM.

7.2.1 *Experimental groups*

As explained in previous chapters, two CLIL classes (CLILA and CLILB) and two L1 classes (L1A and L1B) were used for this study. One class from each group (CLILA and L1A) followed the TT intervention programme. The data collected from these two classes comprise two times: Time 1 (hereafter, T1), recorded before the intervention, at the end of January-beginning of February 2015 and Time 2 (hereafter, T2), recorded after the intervention, in June 2015. The data from T2 used for this study comes only from the experimental classes: CLILA and L1A. As explained in the methodological chapter 4, the PSA or RTPM was used in a twofold way. It was examined as (i) a problem-solving group discussion activity while the students were completing it and (II) a group reasoning measure (using the test results). Below we will present the results of the test and therefore the group reasoning achieved by the different groups when completing the problem-solving activity. These results contribute to pre-evaluating the groups that later followed the TT intervention programme and post-evaluating the possible benefits brought by the programme itself later.

7.2.1.1 *Results on the CLIL experimental group in T1 and T2*

The results shown for the CLILA class correspond to all groups in this class. Table 7.1 below shows the results obtained in the RTPM by the nine groups in the CLILA class. There are five main columns representing the five sets the test is composed of: A, B, C, D and E. Each set has 12 questions, each question answered equals one point, therefore 12 is the maximum punctuation in each set. As mentioned in chapter

2, items become increasingly difficult as student's progress through each set. Below each set in the table, T1 and T2 represent the results obtained in the corresponding sets in each of the two times (T1: pre-test, before the intervention, and T2: post-test, after the intervention). The rows contain results of each group in the CLILA class and the last row shows the average punctuation of the class in each set and time. The last column has the total punctuations of each group in the whole test in T1 and T2. *NF* stands for *not finished* (when the groups did not finish the test in the assigned time) and *NR* stands for *not representative* and was assigned to certain punctuations according to a table of distribution of punctuations in the RTPM manual (Raven et al., 1998). According to the manual, for each total punctuation in the test, there is an expected distribution of set punctuations. Therefore, when comparing the obtained distribution of set punctuations with the ones presented by the authors, if one of the set punctuations had more than 2-points difference with the chart in the manual, the total punctuation in the test could be considered valid but not the punctuation in that particular set (i.e., A, B, C, D or E). Within each set each previous item is easier than the next one and, as the sets advance, they also become increasingly difficult (for a more detailed explanation see chapter 4, section 4.3.2.2). Finally, *NV* stands for *not valid*; this happened when the difference in punctuation was much higher than 2 or much lower than -2 or when more than one set was found not representative. In order to facilitate the interpretation of the tables, NR punctuations were coloured in dark green, NF sets were coloured in light green and groups that showed a progress between T1 and T2 were coloured in yellow. Table 7.1 shows the results on the nine groups in CLIL A class.

RTPM sets / CLILA small groups	A		B		C		D		E		TOTAL- comments	
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
Clila1	12	12	12	12	10	10	10	10	6	6	50	50
Clila2	12	12	12	11	11	10	9	10	7	NF	51	43
Clila3	11	11	12	12	8	9	11	10	1NR	4	43	46
Clila4	10	12	11	12	9	10	8	9	3	1NF	41	44
Clila5	11	12	12	11	11	8	10	NF	4	NF	48	31
Clila6	11	11	11	11	9	10	9	9	4	6	44	47
Clila7	11	12	12	12	9	10	11	11	4	6	47	51
Clila8	10	12	11	12	5NR	11	11	10	4	7	49	52
Clila9	11	11	12	12	11	10	9	10	6	5NF	49	48
TOTAL AVERAGE	11	11.6	11.6	11.8	8.2	10	10.4	10	3.8	5.8	46.6	49.2
Note: NF stands for Not Finished; NR stands for Not Representative XX; NV stands for Not Valid												

Table 7.1: RTPM results in CLILA T1 and T2.

As it can be seen in Table 7.1, five of the nine groups showed improvement in their punctuations from T1 to T2. The improvement in punctuation ranges from 3 to 4-point difference although one of the groups might have had a higher total punctuation if they had been able to finish it. The average punctuation of this CLILA class shows a progress from 46.6 to 49.2. It is worth taking into account that except for group Clila1, where the punctuation in both times was the same, the rest of the groups that did not improve their punctuation were not able to finish the test in the given time. Results show, then, that there seems to be an improvement from T1 (pre-test) to T2 (post-test) in more than half of the groups (55%) in their group reasoning results.

7.2.1.2 Results on the L1 experimental group in T1 and T2

As in the case of the CLILA class, the results shown for the L1A class, correspond to all groups in this class.

Table 7.2 shows the results obtained in the RTPM by the six groups in the L1A class.

RAVENS L1A	A		B		C		D		E		TOTAL-comments	
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
L1a1	12	12	12	12	9	9	10	11	8	5	51	49
L1a2	12	12	12	9	9	7	11	7 NR	5	2 NR	49	37 NV*
L1a3	11	12	12	11	8	9	10	11	5	5	46	48
L1a4	12	12	12	12	9	9	10	11	3	3	46	47
L1a5	11	12	12	12	8	9	10	9	7	9	48	51
L1a6	12	12	12	12	9	7	12	11	4	2	49	44
TOTALS AVERAGE	11.5	12	12	11.75	8.5	9	10	10.5	5.75	5.5	47.75	48.75

Table 7.2: RTPM results in L1A T1 and T2.

In L1A class, the punctuation obtained by L1a2 group has been categorized as NV because the punctuations in two of the sets (D and E) were not considered representative. We can observe that, from six groups, three showed improvement in their punctuations in group reasoning from T1 to T2. The improvement in punctuation ranges from 1 to 3-point difference. The average punctuation of this class shows a progress of one point: from 47.75 to 48.75. Results show that there seems to be a slight improvement from T1 (pre-test) to T2 (post-test) in half of the groups (50%) in their group reasoning results.

7.2.2 Comparison with control groups

In this section, the results from the two control groups (CLILB and L1B) will be presented in order to later make comparisons with the two experimental groups.

7.2.2.1 Results on the CLIL control group in T1 and T2

As stated before, two CLIL classes were used for this study, CLILA, which followed the TT intervention programme, and CLILB, another class in the same school and same age group and grade, which did not follow the programme and which was considered the control group in this study. As explained in the methodological chapter X, data from this class were collected using the same T1 and T2 as in CLILA class. The teachers in both classes have been teaching grade 4 for the same number of years.

Table 7.3, is partly, a copy of table 7.1 showing the RTPM results for CLILA class, the only difference being that its results in T2 are marked in orange in order to facilitate comparability. On the right hand side of the table, the results for CLILB class are presented to facilitate comparability. The only difference is that, since no intervention was done with these classes (CLILB and L1B), only results from T2 were used for this study.

RAVENS CLILA	A		B		C		D		E		TOTAL		RAVENS CLILB	A	B	C	D	E	TOTAL
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		T2	T2	T2	T2	T2	T2
	Clila1	12	12	12	12	10	10	10	10	6	6	50		50	Clilb1	12	12	10	11
Clila2	12	12	12	11	11	10	9	10	7	NF	51	43	Clilb2	11	12	9	9	4	45
Clila3	11	11	12	12	8	9	11	10	1NR	4	43	46	Clilb3	12	12	9	10	6	49
Clila4	10	12	11	12	9	10	8	9	3	1 NF	41	44	Clilb4	11	10	8	10	2	41
Clila5	11	12	12	11	11	8	10	NF	4	NF	48	31	Clilb5	11	11	7	10	4	43
Clila6	11	11	11	11	9	10	9	9	4	6	44	47	Clilb6	12	12	9	9	4	46
Clila7	11	12	12	12	9	10	11	11	4	6	47	51	Clilb7	12	12	9	8	4	44
Clila8	10	12	11	12	5 NR	11	11	10	4	7	49	51	Clilb8	12	12	12	9	6	51
Clila9	11	11	12	12	11	10	9	10	6	5 NF	49	48	-	-	-	-	-	-	-
TOTALS AVERAGE	11	11.6	11.6	11.8	8.2	10	10.4	10	3.8	5.8	46.6	49.2	TOTALS AVERAGE	11.6	11.4	9	9.6	4.4	44.8

Table 7.3: RTPM results for CLILA in T1 and T2 and CLILB in T2

The findings show that T2 results are higher in CLILA than in CLILB. The average totals for all sections in T2 are also higher in CLILA than in CLILB. Total test punctuations (only finished tests) in CLILA in T2 range from 46 to 51 whereas in CLILB in T2 they range from 41 to 51. Similar results are found when comparing CLILA in T1 to CLILB in the average totals and totals of the tests per group. In CLILA in T1 totals also range from 41 to 51 although the average total is still 2-points higher.

These findings show, then, that results from the experimental group in T2 are considerably higher than those of the control group in the same time. The closer similarity between results from the control group in T2 and those of the experimental group in T1 suggests that the progress is related to the intervention programme. Group reasoning skills in the CLILA class, and especially in some small groups, improved after the intervention compared to the control CLILB class.

7.2.2.2 Results on the L1 control group in T1 and T2

As in the CLIL classes, L1A was the class that followed the intervention programme (experimental group), and L1B, another class in the same school and same age group and grade, did not follow the programme (control group). The same data collection procedures were administered in this class to control possible intervening variables. As in the CLIL group, out of the two L1 classes one teacher was randomly selected to follow the intervention program.

Similarly to table 7.3, in table 7.4 the RTPM results for the experimental L1A class in T1 and T2 and the RTPM results for the control L1B class in T2 are presented.

RAVENS L1A	A		B		C		D		E		TOTALS		RAVENS L1B1	A	B	C	D	E	TOTALS
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		T2	T2	T2	T2	T2	
L1a1	12	12	12	12	9	9	10	11	8	5	51	49	L1b1	12	12	11	11	8	54
L1a2	12	12	12	9	9	7	11	7 NR	5	2 NR	49	37 NV	L1b2	12	12	8	10	4 NF	46
L1a3	11	12	12	11	8	9	10	11	5	5	46	48	L1b3	10	11	7 NR	9	1 NR	46 NV
L1a4	12	12	12	12	9	9	10	11	3	3	46	47	L1b4	12	12	7	10	3	44
L1a5	11	12	12	12	8	9	10	9	7	9	48	51	L1b5	11	11	7	4	2	35
L1a6	12	12	12	12	9	7	12	11	4	2	49	44	L1b6	12	12	11	11	0 NF	46
-	-	-	-	-	-	-	-	-	-	-	-	-	L1b7	11	12	10	10	2 NF	45
TOTALS AVERAGE	11.5	12	12	11.75	8.5	9	10	10.5	5.75	5.5	47.7	48.7	TOTALS AVERAGE	11.4	11.7	8.7	9.2	4.3	44.3

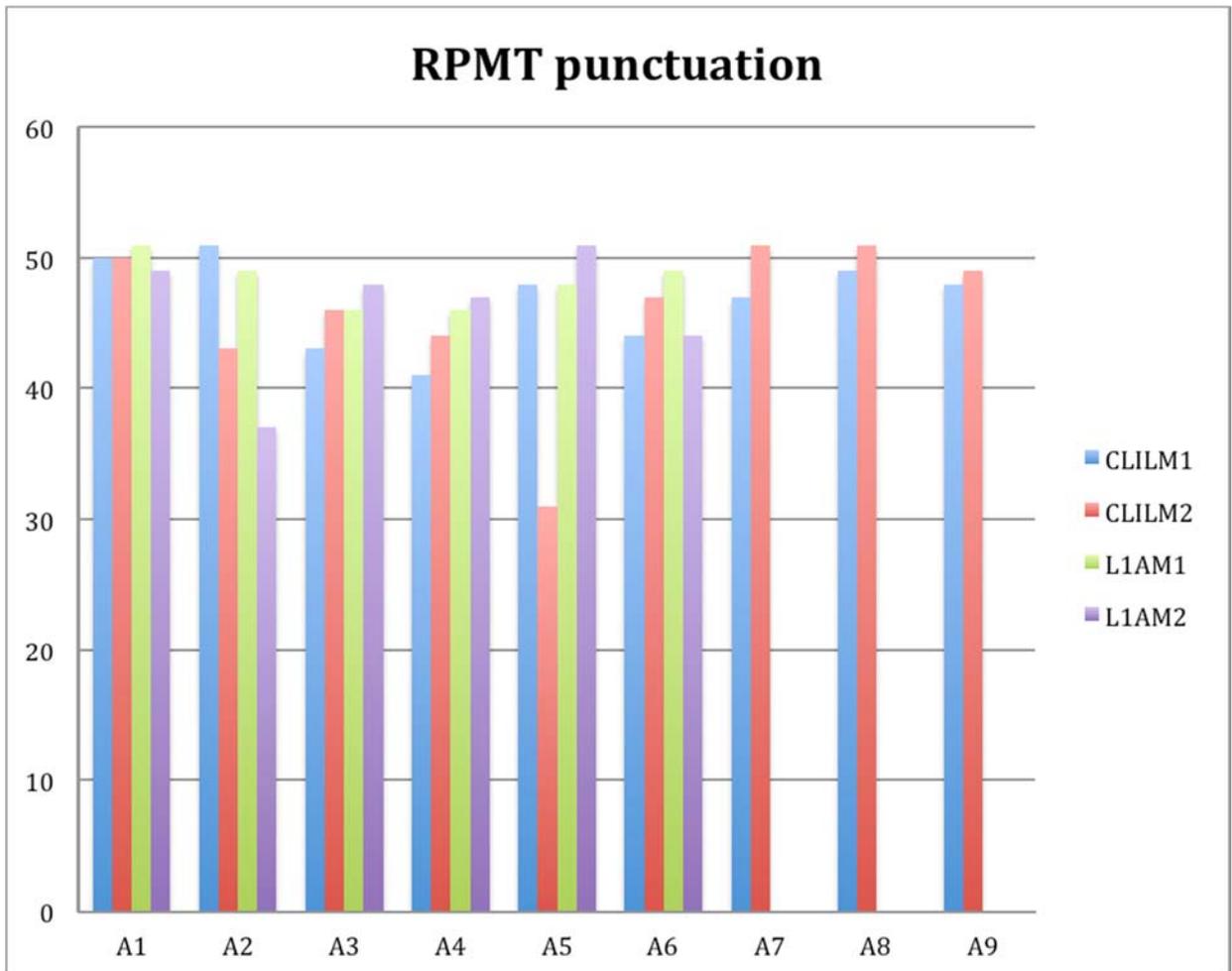
Table 7.4: RTPM results in L1A in T1 and T2 and L1B in T2.

The findings show that results in L1A in T2 are higher than those in the L1B class in T2. The average totals for all sections in T2 in L1A are higher than those in L1B. Total test punctuations (of only finished and valid tests) in L1A in T2 range from 44 to 51 whereas in L1B they range from 35 to 54. More similar results are retrieved when comparing L1A in T1 to L1B in the average totals and totals of the tests by groups (46 to 51). However, even in the comparison between L1A in T1 and L1B in T2, it is evident that L1A obtained better results. The average punctuation of L1B is 44.3 whereas in L1A in T1 is more than 3 points higher, 47.75.

Findings show that results from the experimental group in T2 are considerably higher than those of L1B in the same time. However, the big difference between results from L1B in T2 and those of L1A in T1 also question this possible improvement in L1A due to the intervention programme. It seems possible that the influence of an independent variable in the L1B class. Results of L1A in T1 indicate that it is a group that reasons well together. We can state, then, that group reasoning skills in the L1A class, and especially in some groups, have improved after the intervention; however, we cannot state for sure that this improvement is a result of the programme as this group (L1A) was strong from the start.

7.2.3 Comparison across CLILA and L1 experimental groups

In the descriptive section, results of the CLILA and L1A classes were presented. The analysis showed an improvement in the RTPM results from T1 to T2 in both classes. The improvement included 50% of the L1A groups and 55% of the CLILA ones. The increase in test results was slight in the L1A class (from 47.75 average to 48.75; 1 point more) and notably bigger in CLILA (from 46.6 to 49.2; 2.6 points more). Graph 8.1 shows the RTPM total punctuation in T1 and T2 of the two experimental groups.



Graph 7.1: RTPM total punctuation in T1 and T2 of the experimental groups

In the CLILA groups, Clila1 maintained itself and the rest of the groups expect for two (Clila2 and Clila5) showed improvement. In the L1A groups, improvement is seen in L1a3, L1a4 and L1a5. Although it seems that more groups from CLILA class made an improvement, we must take into account that the total number of groups in that class was higher. The 50% versus 55% gives us an idea of the slight difference between them; however, we must bear in mind the fact that one of the groups in CLILA maintained itself while in L1A all of the groups that did not increase showed a decrease. Another factor to account for is that, as it has been mentioned in the descriptive section 7.2.1 and 7.2.2, all the groups that did not show improvement in CLILA were those that were unable to finish the task. In sum, both experimental classes showed improvement from T1 to T2; however, results show a slightly stronger improvement in CLILA compared to L1A.

7.2.4 Summary of quantitative results on RTPM

Descriptive results have shown an improvement in more than half (55%) of the CLILA groups in their group reasoning results (RTPM) from T1 (before the intervention) to T2 (after the intervention) and a similar, although slightly lower, improvement in half (50%) of the L1A groups. When comparing the CLIL results from the experimental group (CLILA) in T2 with those from the control group (CLILB) in T2, the former are considerably higher. The similarity between results from CLILB in T2 and those of CLILA in T1 discredits the interference of possible independent variables and confirms a connection between the intervention programme and the improvement in the punctuation obtained by CLILA in T2.

In contrast, in L1A, although the comparison also highlights the improvement of L1A from T1 to T2, the big difference between results from L1B in T2 and those of L1A in T1 question the link of this possible improvement in L1A with the intervention programme. There is the possibility, then, that an independent variable in L1B has influenced results or that L1A has, in general, a higher reasoning level than L1B. Finally, when both experimental classes were compared (CLILA and L1A), the improvement from T1 to T2 in both of them was highlighted; however, results show a stronger improvement in CLILA compared to L1A. The implications of these results will be put forward in the discussion chapter.

7.3 Multi-layered analysis of PSA in T1 and T2

This section presents the findings in the Clila3 and the L1a4 group, one reference group from each experimental class (CLILA and L1A). As mentioned in the methodological chapter 4, the decision to include only two groups was due to the length and complexity of the study and the need to reduce data in order to make the comparison element manageable. Following Mercer et al. (1999), the two small groups selected were those that showed the highest increase in their test punctuations in the T1–T2 comparison after the TT intervention programme. The group that showed the biggest difference was Clila7 (with an increase of 4 points, from 47 in T1 to 51 in T2); however, a technical problem with the audio collected in T2 made it impossible to analyse the group in detail, so another group with the next

highest punctuation, Clila3 (with an increase of 3 points, from 43 in T1 to 46 in T2), was chosen randomly among the others with the same increase rate (Clila4 and Clila6). L1a4 was also chosen randomly among the groups with higher punctuation difference.

In order to answer RQ5, we will present the results of the two selected groups (Clila3 and L1a4) before and after the intervention separately, using the three analytical layers of the multi-layered model: a discourse, a knowledge and an interactional layer. As stated before, both quantitative and qualitative results will be presented.

7.3.1 Clila3 group

As already explained, Clila3 was the randomly selected group in the CLILA class. In this section, we will present both the quantitative and the more salient qualitative results retrieved from this group in the three layers of the analytical model.

7.3.1.1 Discourse layer

In this section, Clila3 results on the discourse layer in the PSA in T1 (pre-test) and T2 (post-test) are presented. Table 7.5 shows speech functions found in Clila3 during the PSA in T1 and in T2. The first two columns show the frequency and distribution of the different speech functions of the model in T1 and T2. The next column shows the Chi-square value for a $p=0.05$ (95% confidence level) with one degree of freedom. The last column tells us if the difference is statistically significant, following the same pattern as previous tables in chapter 6: very significant is coloured in dark yellow, significant is coloured in yellow and not very significant is coloured in light yellow. Even though previously in this study we have considered significant or very significant differences only, in this section, and due to the small time lapse between T1 and T2 (from January to June; five months) we will consider all types of significant differences, even the slight ones.

	Clila3PSA T1		Clila3PSA T2			
Feature	N	Percent	N	Percent	Chisqu	Signif.
SPEECH-FUNCTIONS	N=402		N=409			
Open_initiate	44	10.95%	51	12.47%	0.46	
Sustain	358	89.05%	358	87.53%	0.46	
OPEN-INITIATE	N=44		N=51			
Give-info	43	97.73%	47	92.16%	1.47	
Demand-info	1	2.27%	4	7.84%	1.47	
SUSTAIN-TYPE	N=358		N=358			
Continue	92	25.70%	113	31.56%	3.01	+
React	266	74.30%	245	68.44%	3.01	+
CONTINUE-TYPE	N=92		N=113			
Monitor	1	1.09%	1	0.88%	0.02	
Prolong	91	98.91%	112	99.12%	0.02	
REACT-TYPE	N=266		N=245			
Respond	266	100.00%	240	97.96%	5.48	+++
Rejoinder_track	0	0.00%	5	2.04%	5.48	+++
RESPOND-TYPE	N=266		N=240			
Support	170	63.91%	168	70.00%	2.11	
Confront	96	36.09%	72	30.00%	2.11	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 7.5: Speech functions found in group Clila3 during the PSA in T1 and T2.

Table 7.5, then, shows the changes in Clila3 before and after the intervention programme in the use of speech functions. We must bear in mind that the RTPM results already acknowledged an improvement in group reasoning results in this small group. Results show that there are only significant differences in two categories. Very significant differences are shown between the PSA in T1 and T2 in the use of *rejoinder track* and, as a consequence, in the use of *respond*. This speech function was not used in T1 but the group members started using it in T2. Another slightly significant difference was found in the use of more *continuing* moves as opposed to *reacting* moves.

The increased use of *continuing* moves in T2 is exemplified in extracts 7.11 and 7.12 below. Before the intervention, members' turns in Clila3 tended to be shorter and very little use of *prolong* was made:

- 1 Alicia: *So which is this one?*
 2 Lara: *This one* **(RESPOND- FACT)**
 3 Alicia: *Yes, yes* **(RESPOND-AGREE)**
 4 Saúl: *No, one moment ... no, what* **(RESPOND-DISAGREE)**
 5 Alicia: *This is [going to # and is more]* **(RESPOND-EXPLANATION)**
 6 Lara: *[[Yes, because this one]] is very # and this is too* **(AGREE-PROLONG**
 7 **EXPLANATION)**
 8 Alicia: *large, and this is...* **(RESPOND-EXPLANATION)**
 9 Saúl: *Number three.. three...A*
 10 Alicia: *So.. this is... I think is this because.***(GIVE-EVALUATION)**
 11 Lara: *No... No* **(RESPOND-DISAGREE)**
 12 Alicia: *Yes, it's this* **(RESPOND-FACT)**

Extract 7.1: Clila3 use of different speech functions in PSA in T1

As we can see in this extract showing Clila3 in T1, when the group deals with a new question (lines 1 and 10) after the initiations, they tend to use short responses. In this example, there is only one use of *prolong* (lines 6-7) after a *responsive agreeing* move. This *prolong* is supportive and explanatory. In the rest of the turns that comprise the group's answers to two questions, there is no more use of *prolong*. This example clarifies a discourse where there is little space for *prolonging* moves and, therefore, responses are short.

In contrast, in T2, the frequent use of *give evaluations* when *initiating* with the chunk "I think" (underlined: lines 4, 11 and 14) and *prolonging explanations* to justify responses contributed to Clila3 students use longer turns after the intervention (T2):

- 1 Lara: *This one* **((pointing to another))**
 2 Saúl: *No, this one, this one* **((pointing at the same as Lara))**

- 3 *Alicia: **Yes because it has this** ((Lara writes and they look at the next page))..*
 4 ***I think is this one** ((pointing)) BECAUSE (AGREE-PROLONG-*
 5 *EXPLANATION; GIVE-EVALUATION)*
- 6 *Lara: **Yes because this one goes with this one and this with this***
 7 *((pointing))(AGREE-PROLONG EXPLANATION)*
- 8 *Alicia: **And.. and it has to be two from the other side** ((they turn the page))*
- 9 *Lara: **Number?**(REJOINDER-TRACK)*
- 10 *Alicia: **Number** ((goes back to the previous page))... **I think is this***
 11 ***one..number... five** ((Lara writes and they pass the page again))... **I think is this***
 12 ***one because... this one... This one! This one! because it has to** <L1SP*
 13 ***rellenar SPL1> ((she smiles)) and .. (GIVE EVALUATION;; PROLONG-***
 14 *EXPLANATION)*
- 15 *Saúl: **Is %X% in the right side... and this change the other.. this one** ((Pointing;*
 16 *Lara writes))*
- 17 *Alicia: **I think this one is that one** because it %X% like the other one ((Lara*
 18 *turns to write and they turn the page)). (GIVE-EVALUATION; PROLONG-*
 19 *EXPLANATION)*

Extract 7.2: Clila3 use of different speech functions in PSA in T2

In extract 7.2 we can see how Alicia is constantly *giving evaluations* with the chunk “I think” and both Lara (line 6) and her (lines 3, 12 and 17) are concerned with justifying their responses through *explanations*. In line 9 we can also see an example of Lara using *rejoinder-track*, which exemplifies the way the group members started using this speech function to seek clarifications, which was completely absent in T1.

These findings show a scenario of group members using longer turns when speaking and being more concerned about the understanding of XXX and tracking the rest of the group members after the intervention programme.

7.3.1.2 Knowledge layer

In this section, Clila3 results concerning the knowledge layer while doing the PSA in T1 and T2 will be presented. Table 7.6 presents the registers and cognitive discourse functions found in this group.

Feature	Clila3PSA T1		Clila3PSA T2		Chisqu	Signif.
	N	Percent	N	Percent		
REGISTER	N=441		N=455			
Instructional	402	91.16%	409	89.89%	0.42	
Regulative	39	8.84%	45	9.89%	0.29	
Social_talk	0	0.00%	1	0.22%	0.97	
GIVE-INFO-TYPE	N=43		N=47			
Give-fact	29	67.44%	24	51.06%	2.49	
Give-evaluation	12	27.91%	22	46.81%	3.41	+
Give-explanation	2	4.65%	1	2.13%	0.44	
DEMAND-INFO-TYPE	N=1		N=4			
Demand-fact	1	100.00%	2	50.00%	0.83	
Demand-evaluation	0	0.00%	0	0.00%	0.00	
Demand-explanation	0	0.00%	2	50.00%	0.83	
PROLONG-TYPE	N=91		N=112			
Prolong-fact	31	34.07%	23	20.54%	4.71	++
Prolong-evaluation	5	5.49%	3	2.68%	1.05	
Prolong-explanation	55	60.44%	86	76.79%	6.32	+++
PRIOR_MOVE	N=91		N=112			
Prolong-support	32	35.16%	72	64.29%	17.04	+++
Prolong-confront	50	54.95%	38	33.93%	9.03	+++
Prolong-other	9	9.89%	2	1.79%	6.43	+++
SUPPORT-TYPE	N=170		N=168			
Su-fact	58	34.12%	69	41.07%	1.74	
Su-evaluation	16	9.41%	20	11.90%	0.55	
Su-explanation	44	25.88%	31	18.45%	2.70	
Su-agree	52	30.59%	48	28.57%	0.16	
CONFRONT-TYPE	N=96		N=72			
Co-fact	16	16.67%	7	9.72%	1.68	
Co-evaluation	1	1.04%	8	11.11%	8.23	+++
Co-explanation	26	27.08%	12	16.67%	2.55	

Feature	Clila3PSA T1		Clila3PSA T2		Chisqu	Signif.
	N	Percent	N	Percent		
Co-disagree	53	55.21%	45	62.50%	0.90	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 7.6: Registers and CDFs in Clila3 in the PSA in T1 and T2.

Results show no differences in the use of *registers* but some differences are found in the use of *CDFs* before and after the intervention. Thus, in *initiation* moves, group members give slightly more *evaluations* after the intervention (T2). *Evaluations* were found to be present significantly more in *responsive confronting* moves and also slightly more when *initiating* through *giving-evaluations*. *Prolong-explanations* increase very significantly and *prolonging-facts* increased significantly in T2 as compared to T1. The category *prior-move*, referred to *prolong* and which shows whether the *prolonging* move had a *supporting* or *confronting* intention, shows a very significant increase in *prolonging supportive* moves. It also clarifies how the *prolong-explanations* and *prolong-facts* are used in interaction in this group: *explanations* and *facts* are used after a *supportive* response to justify that *support*.

Apart from *prolong-explanations*, *prolonging* also increased in the T2 to express *facts* (see extract 7.3):

- 1 *Alicia. The next..*
- 2 *Lara: This one... Why? Because*
- 3 *Alicia: Because they*
- 4 *Lara: It is this **because it has lines here like this and here like this***
- 5 **(PROLONG-EXPLANATION)**
- 6 *Saúl: Yeah, yeah, yeah, yeah, yeah*
- 7 *Lara: I think is this one **because [In the big square there are %X% and you***
- 8 ***can, you can]* (PROLONG EXPLANATION)**
- 9 *Saúl: [Yes, **because %X%, it is number one]** ((Lara writes the answer))*
- 10 **(PROLONG-EXPLANATION; PROLONG-FACT)**
- 11 *Alicia: [[Yes **because they are all the rest in white]**] ((pointing to the*
- 12 *previous page)) (PROLONG-EXPLANATION)*

Extract 7.3: Clila3 *giving evaluations and explanations and facts* in PSA in T2

In extract 7.3, we can see examples of *prolong-explanations* (lines 4, 7-8, 9-10 and 11-12) by both Lara and Saúl and an example of *prolong-fact* (lines 9-10) by Saúl. It is noticeable that the frequent use of *prolonging* moves by the Clila3 members has contributed to making their turns longer in the T2 compared to T1.

Illustrations of the use of *confront-evaluation*, which was hardly used in T1, are also found in the PSA in T2 (see extract 7.4 below):

- 1 Lara: No! look! four... five
 2 Alicia: **It has to go like this because it goes, one two one and now is four**
 3 **because is the one that goes here ((pointing)) (CONFRONT-FACT;**
 4 **PROLONG- EXPLANATION)**
 5 Lara: **It doesn't matter, no Alicia, when you count, they are the same... One,**
 6 **two three (CONFRONT-EVALUATION; PROLONG EXPLANATION)**
 7 Alicia: Yes but
 8 Saúl: This one

Extract 7.4: Lara using *confront-evaluation* in Clila3 in PSA in T2

In this extract, Lara and Alicia do not agree on the correct option and justify their answers using *prolonging-explanations*. *Confronting* in this example is done first with a *fact* (line 2) and second with an *evaluation* (line 5).

These results sketch out members of the Clila3 group as increasing their use of *evaluations* in *initiations* in the T2 compared to the T1. In T2, Clila3 has also *prolonged* their turns more than in T1, specifically when being *supportive* through *giving* mostly *explanations* and some *facts*. When *responding*, this group tended to *confront* other members by *evaluating* more in T2 than in T1.

7.3.1.3 Interactional layer

In this section, Clila3 results on the interactional layer while doing the PSA in T1 and T2 are shown. Tables 8.7 and 8.8 show the distribution of turns, words and

regulative register in the PSA in T1 (Table 8.7) and T2 (Table 8.8). The results in these tables are presented in the same way as in chapter 6 in sections on the interactional layer (section 6.4). The first column presents the total number of turns per student with the corresponding percentage of turns out of the total number of turns produced by the group. The criteria for determining an equal distribution of turns were the same as the ones applied in chapter 6: in order to categorize a group as *high in equality* in terms of distribution of turns there has to be no more than a 5-point difference in the turn percentages between the lowest and the next and then between the latter and the highest turn percentage value of all group members. In the second column, the total number of words per student is shown with the corresponding percentage of words out of the total number of words produced by the group. In the third column, the number of L1 words used are shown. In the final column, the average number of words (not including the ones in L1) per turn is presented. Even though the most important criterion used to determine an equal distribution of turns was the percentage shown in the first column, the number of words per student and the average number of words per turn also had to show similar values. As in chapter 6, another column is added with the distribution of the *regulative* register per student only for the groups with a fairly equal distribution of turns.

Clila3 PSA T1	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 Lara	129 36.44%	738 32.4%	7 100%	5.6
Student 2 Alicia	148 41.81%	1185 52.02%	0	8
Student 3 Saúl	77 21.75%	355 15.58%	0	4.6
Total	354	2278	7 0.3%	

Table 7.7: Distribution of turns, words and the regulative register per student in Clia3 in the PSA in T1.

Clia3 PSA T2	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 Lara	127 34.6%	711 27.41%	37 16.82%	5.3
Student 2 Alicia	132 35.97%	1266 48.8%	15 6.82%	9.4
Student 3 Saúl	108 29.43%	617 23.79%	168 76.36%	4.1
Total	367	2594	220 8.5%	

Table 7.8: Distribution of turns, words and the regulative register in Clia3 in the PSA in T2.

Results shown in Tables 7.7 and 7.8 present both some increase and decrease of the two *equality* factors in Clia3 from T1 to T2. In T1, the distribution of turns was very unequal, with Alicia being responsible for most of the turns (41.81%), followed by Lara (36.44%) and very far behind by Saúl (21.75%). The number of words per student and the average number of words per turn followed the same order (35.97%, 34.6% and 29.43%, and 9.4, 5.3 and 4.1 respectively). Drawing on the results of students' participation in the PSA in T1, this group was not categorized as equal and therefore the distribution of the *regulative* register was not examined.

Results on turn distribution in T2 show a strong improvement in the distribution of turns where Alicia's rate slightly decreases (XX%), Lara's participation also lowers notably (XX%) whereas Saúl intervenes considerably more (XX%). In this way, the group almost achieves the *equality* criteria for the first factor in T2 with a slight difference of 5.17 points between the lowest percentage of turns (Student 3) and the

second highest (Student 1), while in T1 it was a big difference of 14.66 points. However, regarding the total number of words per student and the average number of words per turn, there is still a big difference between the first leading student (Alicia: XX% and XX%, respectively) and the second one (Lara: XX% and XX%, respectively), although the difference between the students in the second position and the third is slightly lower (Saúl: XX% and XX%, respectively). Hence, while Lara has remained with almost the same total number of words in T2, both Saúl and Alicia have increased their total number of words as compared to T1. This would normally mean an increase in the average number of words per turn for these two students in T2. However, since Saúl has also drastically increased his total number of L1 words used (from 0% in T1 to 76.36% in T2), therefore the sharp increase in the average number of words per turn in the T2 only affects Alicia and this creates a very big difference in this parameter with the rest of the group. In the light of the presented data, the *equality* criteria is not completely met since the difference is slightly higher than 5 points (5.17). Despite the fact that the difference is very slight, it confirms the inequality shown above in the distribution of turns. Therefore, the analysis of the use of *regulative* register in this group has not been performed.

In extract 7.5 we can see how in T1 it is Alicia and Lara who drive the conversation in the PSA with Saúl hardly participating (in bold, lines 10 and 15) .

- 1 *Lara: No! This is not of this one*
- 2 *Alicia: No but this is one of this one, is one of this one and here we have %X%*
- 3 *Lara: %X% number five*
- 4 *Alicia: No, that these two have three.. we need three*
- 5 *Lara: Okay %X% ((not very satisfied, while she writes, and Saúl turns the*
- 6 *page))*
- 7 *Alicia: There is %X%, there is %X% there is %X%... two, is number two ((Lara*
- 8 *writes and Saúl turns the page).. This like this, ((pointing)) the %X% like that*
- 9 *the %X% like that %X% one*
- 10 *Lara: One two ((pointing)) three.. is this one*
- 11 ***Saúl: No but is this (DISAGREE; PROLONG-FACT)***
- 12 *Lara: No but one two three... Have one two*
- 13 *Alicia: But this one*

- 14 *Lara: Or this square... Look! Look!*
 15 *Saúl: Yes, yes, is this one (AGREE; PROLONG-FACT)*

Extract 7.5: Clila3 in PSA in T1

In T2, however, the group shows a more equal distribution of turns, as Saúl participates more in this case. We can see this in extract 7.7 below:

- 1 *Alicia: I say number four ((gives him a crazy look and Lara writes))*
 2 *Saúl: Four, four ((he turns to look at the next one))(give-fact)*
 3 *Lara: I think this one*
 4 *Alicia: Yes, because yes is the same*
 5 *Saúl: No because first is this one, then this one and then... (DISAGREE-*
 6 *PROLONG-EXPLANATION)*
 7 *Lara: This and this are the same*
 8 *Saúl: No because ((he measures with his fingers)) ... (DISAGREE-*
 9 *PROLONG- EXPLANATION)*
 10 *Alicia: Yes, yes, is that one ((Lara turns to write and they turn the page)).. I*
 11 *think is this one*
 12 *Lara: Is number three*
 13 *Alicia: No because this has it*
 14 *Lara: No*
 15 *Alicia: Yes, is number three ((she turns to write))*
 16 *Saúl: Is five ((back in the previous one)) is this one (confront-fact)*
 17 *Lara: No*
 18 *Saúl: Yes because this one is %X% and then this one (DISAGREE;*
 19 *PROLONG- EXPLANATION)*
 20 *Lara: This one is like the four, one two three four ((pointing))*
 21 *Saúl: One two three four five six... one two three four five six... is this...*
 22 *(CONFRONT -EXPLANATION; PROLONG-FACT)*

Extract 7.6: Clila3 in PSA in T2

In this extract, it can be observed that Saúl has improved his participation with longer turns, particularly through *explanations*. His interventions are more frequent and he shows a more active participation than in T1.

The results in the *equality* factors in the interactional layer have shown improvements from T1 to T2. However, the improvement in the distribution of turns has not yet reached the *equality* criteria necessary to further analyse the distribution of the control of the activity by group members. Drawing on the results of the more qualitative analysis of the extracts, the interactional pattern in this small group both in T1 and in T2 should be categorized as *dominant/passive*, despite the fact that Lara and Alicia do seem to have a more *collaborative* relationship and Saúl's passive role seems to have evolved slightly towards a higher participation in T2. This might indicate a transition in progress towards a more *collaborative* interactional pattern in this group.

7.3.2 L1a4 group

As in the case of Clila3 in the CLILA class, L1a4 was the randomly selected group in the L1A class. In this section, we will present both the quantitative and the more salient qualitative results retrieved from this group in the three layers of the model.

7.3.2.1 Discourse Layer

In this section, L1a4 results in the discourse layer while doing the PSA in T1 and T2 are shown. Table 7.9 shows the speech functions found in L1a4 in the PSA in T1 (before the intervention) and T2 (after the intervention).

Feature	L1a4PSA T1		L1a4PSA T2		Chisqu	Signif.
	N	Percent	N	Percent		
SPEECH-FUNCTIONS	N=568		N=326			
Open_initiate	61	10.74%	55	16.87%	6.90	+++
Sustain	507	89.26%	271	83.13%	6.90	+++
OPEN-INITIATE	N=61		N=55			
Give-info	47	77.05%	46	83.64%	0.79	
Demand-info	14	22.95%	9	16.36%	0.79	
SUSTAIN-TYPE	N=507		N=271			
Continue	116	22.88%	59	21.77%	0.12	
React	391	77.12%	212	78.23%	0.12	
CONTINUE-TYPE	N=116		N=59			
Monitor	16	13.79%	8	13.56%	0.00	
Prolong	100	86.21%	51	86.44%	0.00	
REACT-TYPE	N=391		N=212			
Respond	389	99.49%	202	95.28%	12.46	+++
Rejoinder_track	2	0.51%	10	4.72%	12.46	+++
RESPOND-TYPE	N=389		N=202			
Support	311	79.95%	143	70.79%	6.26	+++
Confront	78	20.05%	59	29.21%	6.26	+++
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 7.9: Speech functions in L1a4 in the PSA in T1 and T2.

The RTPM results already acknowledged a slight improvement in the reasoning results obtained by this group; Table 7.9 shows some significant changes in L1a4 from T1 to T2. Results show that there are significant differences in three categories (*rejoinder-track*, *initiations* and *moves*) and all of them are very significant. There is a higher use of *rejoinder-track*, tracking moves which check, confirm, clarify or probe the content of prior moves, by L1a4 students in T2 than in T1. This change could be linked to the effect of the TT programme itself since it has been found in both groups (the CLIL and the L1 group). However, contrary to the findings in Clila3,

this speech function was already slightly used by L1a4 group members in T1 but its use highly increased in T2.

L1a4 students' higher use of *rejoinder-track* in T2 could be due to their familiarity with the activity, because they had already performed it in T1, so they seemed to deal with the problems of the PSA faster. Therefore, it might be the speed what caused the increase of *rejoinder-track* between T1 and T2 as in extract 7.7:

- 1 *Juan: Tu no crees que es la cuatro?*
 2 *Elena: Vale ((she writes and Gerardo turns the page))*
 3 *Gerardo: Sí, ¿la tres? ((Elena writes and he turns the page)) La....(REJOINDER-*
 4 **TRACK)**
 5 *Juan: ¿Tres? (REJOINDER-TRACK)*
 6 *Gerardo: La cruz... la cuatro*
 7 *Elena: Sí, la cuatro ((she writes and they turn the page))*
 8 *Gerardo: Pues es la... la..*
 9 *Elena: La tres*

Extract 7.7: Use of *rejoinder-track* in L1a4 in PSA in T2

Students in L1a4 seem to deal with the task at a fast pace, as we can see in this short extract, where they solve two RTPM items. This situation might trigger the use of *rejoinder-track* by the writer (line 3) and another student (Juan; line 5) who, because of the speed, need to make sure even more frequently that they have followed interaction and have understood their peers correctly.

Another very significant difference is the use of *confront responsive* moves, which significantly increased from T1 to T2. *Confronting responses* oppose to what was previously said just by *disagreeing* (lines 4, 5 and 6) or by stating another fact (line 2). Extract 7.8 illustrates this kind of *confronting responses*.

- 1 *Juan: La ocho ((pointing))*
 2 *Gerardo: La cuatro... (CONFRONT-FACT)*
 3 *Juan: ¡Esta! ((pointing))*

4 *Gerardo: No la cuatro... no, no, la ocho (CONFRONT-DISAGREE; PROLONG-*
5 **FACT)**

6 *Juan: No, la ocho no (CONFRONT-DISAGREE)*

7 *Gerardo: No la uno (CONFRONT-DISAGREE; PROLONG-FACT)*

Extract 7.8: Use of *confronting responses* in L1a4 in PSA in T2

These results picture L1a4 group members as being more concerned about understanding and following the rest of group members, as shown in the increase in the use of *rejoinder-track* from T1 to T2. It has also shown that this group tends to *confront* more when *responding* after the TT intervention programme (T2) than before (T1).

7.3.2.2 Knowledge layer

In this section, L1a4 results in the knowledge layer while doing the PSA in T1 and T2 will be presented. Table 7.10 shows the results on the registers and cognitive discourse functions.

	L1a4PSA T1		L1a4PSA T2			
Feature	N	Percent	N	Percent	Chisqu	Signif.
REGISTER	N=741		N=395			
Instructional	568	76.65%	326	82.53%	5.31	++
Regulative	145	19.57%	61	15.44%	2.95	+
Social_talk	28	3.78%	8	2.03%	2.58	
GIVE-INFO-TYPE	N=47		N=46			
Give-fact	36	76.60%	39	84.78%	1.00	
Give-evaluation	9	19.15%	5	10.87%	1.25	
Give-explanation	2	4.26%	2	4.35%	0.00	
DEMAND-INFO-TYPE	N=14		N=9			
Demand-fact	9	64.29%	3	33.33%	2.10	

	L1a4PSA T1		L1a4PSA T2			
Feature	N	Percent	N	Percent	Chisqu	Signif.
Demand-evaluation	3	21.43%	3	33.33%	0.40	
Demand-explanation	2	14.29%	3	33.33%	1.17	
PROLONG-TYPE	N=100		N=51			
Prolong-fact	38	38.00%	21	41.18%	0.14	
Prolong-evaluation	11	11.00%	3	5.88%	1.05	
Prolong-explanation	51	51.00%	27	52.94%	0.05	
PRIOR_MOVE	N=100		N=51			
Prolong-support	41	41.00%	19	37.25%	0.20	
Prolong-confront	39	39.00%	29	56.86%	4.35	++
Prolong-other	20	20.00%	3	5.88%	5.21	++
SUPPORT-TYPE	N=311		N=143			
Su-fact	145	46.62%	65	45.45%	0.05	
Su-evaluation	21	6.75%	10	6.99%	0.01	
Su-explanation	67	21.54%	9	6.29%	16.34	+++
Su-agree	78	25.08%	59	41.26%	12.17	+++
CONFRONT-TYPE	N=78		N=59			
Co-fact	5	6.41%	5	8.47%	0.21	
Co-evaluation	7	8.97%	3	5.08%	0.75	
Co-explanation	14	17.95%	8	13.56%	0.48	
Co-disagree	52	66.67%	43	72.88%	0.61	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 7.10: Registers and CDFs in L1a4 in the PSA in T1 and T2.

Results show differences in the use of the *instructional* register, with a significant increase in T2 and a slightly significant decrease of the *regulative* register, also in T1. In other words, from T1 to T2 there has been a decrease in organizational and control aspects of the task towards more content centred discourse.

The more frequent use of the *regulative* register in T1 in this group could be related with these students' lack of familiarity with the task and their need to get organized.

- 1 *Elena: Tiene que ser la uno, ¿no?*
- 2 *Gerardo: Si es que, si, la uno ((She writes and he turns the page))*
- 3 *Elena: **Dentro de..tres pasamos a la E,no faltan muchas (REGULATIVE***
- 4 ***REGISTER)***
- 5 *Gerardo: Eh... la del cuadrado, ¿no? %X%*
- 6 *Elena: Yo creo que es esta, la dos*
- 7 *(...)*
- 8 *Juan: Este es esta y esta y esta ((pointing))*
- 9 *Elena: Sí ((she writes and they turn the page)) ... **Bueno, pasamos a la***
- 10 ***siguiente columna(REGULATIVE REGISTER)***
- 11 *Gerardo:.... La siete.. **¿qué queda? (REGULATIVE REGISTER)***
- 12 *Juan: Sí, es la siete*
- 13 *Elena: ((while she writes)) **Ya vamos a acabar, ¿eh? (REGULATIVE***
- 14 ***REGISTER)***

Extract 7.9: Use of *regulative* register in L1a4 in PSA in T1

In extract 7.9 the group members use the *regulative* register (lines 3-4, 9-10, 11 and 13) to talk about how the task is developing, what they have to do next and how many items they have left to finish the PSA. In T2, the decrease of the *regulative* register and the increase in their participation in the *instructional* register could be related to their familiarity with the task.

- 1 *Elena: Esta, es esta ((pointing))*
- 2 *Gerardo: No, ah eh, mira, es esto, estos es esto, esta tiene esto, ves? porque sino*
- 3 *tendría*
- 4 *Elena: Ya pero mira esto, esto tiene esta mitad, y le ponen un poco de esto y..*
- 5 ***(CONFRONTING PROLONG).***
- 6 *Juan: Ya pero mira, aqui, esta no tiene... **(CONFRONTING PROLONG).***

- 7 Gerardo: Ah, mira! Este tiene sólo uno, este tiene uno y un punto, este tiene una
8 y dos puntos
- 9 Elena: Es que es igual que esto solo que con esto...
- 10 Gerardo: Este ((pointing)) sí, la cuatro
- 11 Elena: No sé...
- 12 Gerardo: Sí cuatro, es la cuatro
- 13 Juan: No tío, sí... es que no sé... sí porque mira, a ver , aquí uno, aquí uno
14 **(CONFRONTING PROLONG).**
- 15 Elena: Ya pero mira esto... .. **(CONFRONTING PROLONG).**
- 16 Juan: ¿Tú no crees que es la cuatro?
- 17 Elena: Vale ((she writes and Gerardo turns the page))

Extract 7.10: Use of *instructional* register in L1a4 in PSA in T2

In extract 7.10 the members of L1a4 group are discussing one item. Between the moment they start discussing the item (line 1) and they pass the page to move to the next item (line 17), there is no use of the *regulative register*. In fact, all the extract is categorized as *instructional* register.

Even though, in the discourse layer, no significant differences were found in the use of *prolonging* moves from the T1 to the T2, in the knowledge layer, within the delicacy level where *prolonging* types are categorized as *prolong-fact*, *prolong-evaluation* and *prolong-explanation*, some changes appeared as shown in Table 7.10 above. From T1, before the intervention, to T2, after the intervention, there has been a significant increase in the use of *confronting prolongs*. This means that in T2 the members of the L1a4 group have increased the turns in which they use *prolong* when confronting another member of the group. This implies that *disagreement* is justified either by *explanations*, *facts* or *evaluations* more than in T1, although the difference is not statistically significant. An example of this use can be seen in extract 7.10 above where examples of *confronting prolongs* (lines 4-5, 6, 13-14 and 15), that is, when the speaker justifies their opposition with the previous speaker, can be observed.

Lastly, results on the use of *supporting* moves in the T2 show both similarity and differences. The use of *supporting-facts* remains stable from T1 to T2, however very significant differences are found in *support-agree* and *supporting-explanations*. In the T2, there is a considerable increase in the use of *agreeing* moves and a decrease in the use of *supporting-explanations* compared to T1. This means that in T2, L1a4 students tend to give *support* with *facts* or barely *agreeing* and without justifications. This difference between the use of *support* in T1 and T2 is illustrated in extracts 7.11 and 7.12 below:

- 1 *Elena: Vale, a ver... ¿Esta, no?*
 2 *Juan: Sí (SUPPORT-AGREE)*
 3 *Gerardo: No*
 4 *Juan: Bueno, es que no sabemos si va %X% (SUPPORT-EXPLANATION)*
 5 *Elena: Sí (SUPPORT-AGREE)*
 6 *Juan: Yo creo que sí*
 7 *Gerardo: O esta! (SUPPORT-FACT)*
 8 *Juan: No, porque tienen que haber esto..*
 9 *Gerardo: Si, no, ¿cómo lo sabes?*
 10 *Juan: No, esta, esta ... es esta*
 11 *Elena: No porque aqui se hace fino y aqui es gordo... ah, pues no, sí es esta*
 12 *Juan: Es esta... la seis (SUPPORT-FACT)*
 13 *Elena: ((while writing)) esta es la.. la (SUPPORT-FACT)*
 14 *Juan: La seis (SUPPORT-FACT)*
 15 *Elena: Vale ((She writes and they turn the page))(SUPPORT-AGREE)*

Extract 7.11: L1a4 *supporting* in PSA in T1

Extract 7.11 illustrates the use of different types of *supports* by the members of L1a4 group in T1: *support-agree* (lines 2, 5 and 15), *support-fact* (lines 7, 12, 13 and 14) and *support-explanation* (line 4). In contrast, in T2, and as shown in extract 7.12 below, maybe due to their familiarity with the PSA, turns appear to be shorter and the variety of *supports* decreases:

- 1 *Gerardo: La dos ((Elena writes, he waves again))*
 2 *Juan: Pasa! ((Gerardo turns the page))*
 3 *Gerardo: La... la seis*
 4 *Elena: Sí (SUPPORT-AGREE)*

- 5 Gerardo: *Sí, la seis sí* ((Elena writes and he turns the page)).. *la.. seis*
6 **(SUPPORT-AGREE; PROLONG-FACT)**
- 7 Elena: *tres.. tres* (*support-fact*)
- 8 Gerardo: *La tres* ((she writes and he turns the page)).. *la... No no espera*
9 *((Making a gesture to refrain Juan from speaking))* *la cinco* **(SUPPORT-**
10 **AGREE)**
- 11 Juan: *No, no*
- 12 Elena: *La seis* **(SUPPORT-FACT)**
- 13 Juan: *La seis* **(SUPPORT-AGREE)**
- 14
- 15 Juan: *Tio pero no vayas tan rápido Gerardo*
- 16 Gerardo: *La... la... la uno, no la uno no es... la cinco!* *por que es...*((he points))
17 **(SUPPORT-FACT)**
- 18 Juan: *Sí la cinco es verdad* ((Elena writes and Gerardo turns the page))
19 **(SUPPORT-AGREE)**
- 20 Gerardo: *La.. cual puede ser.. la..esta* ((pointing))
- 21 Elena: *La uno.. o no, no, no, no, no, no, no, [la cuatro]*
- 22 Juan: *[[No la cuatro]]*
- 23 Elena: *No, no, no! es la*
- 24 Juan: *Esta* **(SUPPORT-FACT)**
- 25 Elena: *La seis* (*support-agree*)
- 26 Gerardo: *La seis la seis..* ((Elena and gerardo point at it)) **(SUPPORT-**
27 **AGREE)**
- 28 Juan: *Ah, si!* ((she writes and Gerardo turns the page)) **(SUPPORT-AGREE)**

Extract 7.12: L1a4 supporting in PSA in T2

As illustrated in this extract, in T2, there is a higher presence of *support-agree* (lines 4, 5-6, 8-9, 12, 17-18, 24, 25 and 26); in fact, it is double compared to T1. Whilst in T1 there are instances of *support-explanation*, together with *support-fact* and *support-agree*, in T2 there is less presence of *support-explanation* and *support-fact*. Again, this might indicate that the familiarity of the task might have speeded up students when doing it, explicitly reflected in Juan's comment (line 14).

To sum up, these results sketch out a L1a4 group as more focused on the task content in T2 compared to T1, in which students often respond *supporting* with

agreements and tends to *prolong* when *confronting* other members of the group more in T2 than in T1.

7.3.2.3 Interactional layer

In this section, we will present quantitative results on the two *equality* factors: distribution of turns and distribution of control of the task through the use of the *regulative* register for L1a4 in PSA before the intervention (T1) and after the intervention (T2). Results are shown in tables 7.11 and 7.12 below:

L1a4 PSA T1	Turns	Words	Av. Words per turn	Regulative register
Student 1 Elena	181 31.98%	1086 34.87%	6	70 49.65%
Student 2 Juan	196 34.63%	827 26.56%	4.2	35 24.82%
Student 3 Gerardo	189 33.39%	1201 38.57%	6.3	36 25.53%
Total	566	3114		141

Table 7.11: Distribution of turns, words and regulative register per student in L1a4 in the PSA in T1.

L1a4 PSA t2	Turns	Words	Av. words per turn
Student 1 Elena	94 29.94%	479 28.54%	5
Student 2 Juan	96 30.57%	402 23.96%	4.1
Student 3 Gerardo	124 39.49%	797 47.5%	6.4
Total	314	1678	

Table 7.12: Distribution of turns, words and regulative register per student in L1a4 in the PSA in t2.

Results present some increases and decreases in the *equality* factors. In T1, the distribution of turns was very equal since there was a less than 5-point difference in percentage of turns between the member with the lowest percentage and the next (Student 1: 29.94% and Student 2: 30.57%) and then with the latter and the student with the highest percentage (Student 3: 39.49%). Therefore, in what refers to the distribution of turns in PSA in T1, the group met the *equality* requirements as was categorized as *high in equality*. Having the second highest number of turns, Student 2, Juan, had the lowest number of words produced (23.96%) and the lowest average number of words per turn (4.1). This meant Juan participated a lot but his interventions were rather short. Gerardo had a slightly more than 1-point difference with Juan and Elena in the percentage turns. Therefore the differences among the three was very small. The first in the total number of turns, Gerardo, was also the one that produced the highest number of words (38.57%) and had the highest average number of words per turn (6.3). This means that contrary to Juan, Gerardo seems to make slightly fewer but much longer interventions.

In what refers to the control of the activity, results show that the activity was strongly controlled by Elena (49.65%), and a lot less by Gerardo (25.83%) the member with the middle value, and slightly less compared to Gerardo, the member with the lowest percentage of use of the regulative register, Juan (24.82%). The difference between the member with the lowest value, Juan and the next, Gerardo is less than 5 points (1.01). However, the percentage in control of the activity of the latter with Elena, who produces most of the regulative register in the group, is particularly high (more than 20 points difference). Therefore this group cannot be categorized as high in equality in terms of distribution of the control of the activity.

In extract 7.11 we have seen an example of this equal distribution (all members are present in the extract) with Juan intervening the most (7 turns; lines 2, 4, 6, 8, 10, 12 and 14) then Elena (5 turns; lines 1, 5, 11, 13 and 15) and then Gerardo (2 turns; lines 3 and 7). For the readers convenience, the extract was repeated here.

1 *Elena: Vale, a ver... ¿Esta, no?*

2 *Juan: Sí (SUPPORT-AGREE)*

3 *Gerardo: No*

- 4 *Juan: Bueno, es que no sabemos si va %X% (SUPPORT-EXPLANATION)*
- 5 *Elena: Sí (SUPPORT-AGREE)*
- 6 *Juan: Yo creo que sí*
- 7 *Gerardo: O esta! (SUPPORT-FACT)*
- 8 *Juan: No, porque tienen que haber esto..*
- 9 *Gerardo: Si, no, ¿cómo lo sabes?*
- 10 *Juan: No, esta, esta ... es esta*
- 11 *Elena: No porque aqui se hace fino y aqui es gordo... ah, pues no, sí es esta*
- 12 *Juan: Es esta... la seis (SUPPORT-FACT)*
- 13 *Elena: ((while writing)) esta es la.. la (SUPPORT-FACT)*
- 14 *Juan: La seis (SUPPORT-FACT)*
- 15 *Elena: Vale ((She writes and they turn the page))(SUPPORT-AGREE)*

Extract 7.11: L1a4 supporting in PSA in T1

However, as Table 7.12 above shows, in T2, the first *equality* factor in this group gets worse. This time, Gerardo is the student who produces most turns (39.49%) and Juan and Elena are left very far behind (30.57% and 29.94%, respectively). Regarding the total number of words per student and the average number of words per turn, Gerardo continues with the lead (47.5% and 6.4 average number of words per turn respectively). The difference between Gerardo, who has the lowest percentage of turns, and Juan, who is next, is almost 9 points. Even though the difference in percentage of turns between the latter, Juan, and the lowest, Elena is much lower, the group was categorized as low in equality in terms of turn distribution among group members .

In extract 7.12, we can see an example of the distribution of turns becoming lower in *equality*..

- 1 *Gerardo: ¿Cinco? (REJOINER-TRACK)*
- 2 *Juan: No ...Sí! La cinco mira!*
- 3 *Gerardo: No, no, la cinco no (CONFRONT-DISAGREE)*
- 4 *Juan: ¿No?, ¿porqué?... ((pointing))*
- 5 *Gerardo: ¿Qué?... Tendría que ser esta (REJOINER-TRACK; SUPPORT-*
- 6 **FACT)**

- 7 *Elena: No porque.,. esta no tiene círculo*
 8 *Gerardo: Esta, es esta (SUPPORT-FACT)*

Extract 7.12: Turn distribution in L1a4 in PSA inT2

In extract 7.12, not only does Gerardo intervene the most (4 turns; lines 1, 3, 5 and 7) as compared to the other two members (Juan: 2 turns, lines 2 and 4; Elena: 1 turn, line 6) but he also seems to hold control of the decision-making process. He starts asking for his peers' opinion (line 1) but shows disagreement without giving reasons (line 3), ignores Juan's comment (line 4) and lastly he imposes his option (line 7). This shows an example of the unequal distribution of turns present in the T2, after the TT intervention programme.

In sum, after the intervention program and as reflected in the results in the post-test, *equality* in group L1a4 has decreased. Whilst in T1, this group was considered *high in equality* and was further analysed in the second *equality* factor, control of the activity, in T2 the uneven increase in the distribution of turns between the members has resulted in the group being categorized as *low in equality*. Therefore the second factor, control of the activity, was not analysed in T2.

Thus, the extracts examined in this section show that this group has failed to meet both *equality* factors. The distribution of turns did not only lack showing improvement in T2; in fact, it showed the opposite. The know-how of the activity in T2 seemed to influence group members in a negative way, making them go faster and reasoning less. *Evaluation*, as a way of students getting involved with the content and with each other's comments (a *mutuality* indicator) has not been found either in T1 or in T2. Therefore, this group seems to follow the *expert/novice* pattern, having Gerardo as a clear expert and Elena and Juan (see extract 7.12) changing between the novice and slight expert roles, depending on the situation. Thus, in T1, Juan is the slight expert and Elena is the novice (see extract 7.11) and in T2, the situation reverses: Elena is the slight expert and Juan is the novice (see extract 7.12). However, neither of them seems to reach out Gerardo's dominant drive (see extracts 7.12).

7.3.3 Comparing CLIL and L1 groups after the intervention

In this section, we will compare the two small groups, Clila3 and L1a4, selected from both experimental classes in all three layers: discourse, knowledge and interaction. Both the quantitative and the more salient qualitative results of the comparison across the small groups will be presented in the three layers of the model.

7.3.3.1 Discourse layer

In this section, the results concerning the comparison between Clila3 and L1a4 performing the PSA in T2 in the discourse layer will be shown. Table 7.13 presents the quantitative results for both discourse and knowledge layers . by Clila3 and L1a4 during the PSA in T2. Within the discourse layer we will discuss the results obtained in the following categories belonging to this layer: Open-initiate, Speech-function, Sustain-type, Continue-type; React-type and Respond-type.

Feature	Clila3PSA T2		L1a4PSA T2		Chisqu	Signif.
	N	Percent	N	Percent		
REGISTER	N=455		N=395			
Instructional	409	89.89%	326	82.53%	9.79	+++
Regulative	45	9.89%	61	15.44%	5.97	+++
Social_talk	1	0.22%	8	2.03%	6.58	+++
OPEN-INITIATE	N=409		N=326			
Open_initiate	51	12.47%	55	16.87%	2.85	+
Sustain	358	87.53%	271	83.13%	2.85	+
SPEECH_FUNCT	N=51		N=55			
Give-info	47	92.16%	46	83.64%	1.79	
Demand-info	4	7.84%	9	16.36%	1.79	
GIVE-INFO-TYPE	N=47		N=46			
Give-fact	24	51.06%	39	84.78%	12.10	+++
Give-evaluation	22	46.81%	5	10.87%	14.57	+++
Give-explanation	1	2.13%	2	4.35%	0.37	
DEMAND-INFO-TYPE	N=4		N=9			

	Clila3PSA T2		L1a4PSA T2			
Feature	N	Percent	N	Percent	Chisqu	Signif.
Demand-fact	2	50.00%	3	33.33%	0.33	
Demand-evaluation	0	0.00%	3	33.33%	1.73	
Demand-explanation	2	50.00%	3	33.33%	0.33	
SUSTAIN-TYPE	N=358		N=271			
Continue	113	31.56%	59	21.77%	7.45	+++
React	245	68.44%	212	78.23%	7.45	+++
CONTINUE-TYPE	N=113		N=59			
Monitor	1	0.88%	8	13.56%	12.56	+++
Prolong	112	99.12%	51	86.44%	12.56	+++
PROLONG-TYPE	N=112		N=51			
Prolong-fact	23	20.54%	21	41.18%	7.58	+++
Prolong-evaluation	3	2.68%	3	5.88%	1.01	
Prolong-explanation	86	76.79%	27	52.94%	9.37	+++
PRIOR_MOVE	N=112		N=51			
Prolong-support	72	64.29%	19	37.25%	10.38	+++
Prolong-confront	38	33.93%	29	56.86%	7.61	+++
Prolong-other	2	1.79%	3	5.88%	1.98	
REACT-TYPE	N=245		N=212			
Respond	240	97.96%	202	95.28%	2.56	
Rejoinder_track	5	2.04%	10	4.72%	2.56	
RESPOND-TYPE	N=240		N=202			
Support	168	70.00%	143	70.79%	0.03	
Confront	72	30.00%	59	29.21%	0.03	
SUPPORT-TYPE	N=168		N=143			
Su-fact	69	41.07%	65	45.45%	0.61	
Su-evaluation	20	11.90%	10	6.99%	2.14	
Su-explanation	31	18.45%	9	6.29%	10.19	+++
Su-agree	48	28.57%	59	41.26%	5.51	+++
CONFRONT-TYPE	N=72		N=59			

Feature	Clila3PSA T2		L1a4PSA T2		Chisqu	Signif.
	N	Percent	N	Percent		
Co-fact	7	9.72%	5	8.47%	0.06	
Co-evaluation	8	11.11%	3	5.08%	1.53	
Co-explanation	12	16.67%	8	13.56%	0.24	
Co-disagree	45	62.50%	43	72.88%	1.58	
Notes: + slightly significant; ++ significant; +++ very significant.						

Table 7.13: Discourse functions, registers and cognitive discourse functions in Clila3 and L1a4 in the PSA in T2.

A very significant difference is shown in the results on *sustain*-type and *continue*-type moves. Clila3 uses significantly more *continuing* moves, specifically *prolong* than L1a4. In turn, *react* and *monitor* are significantly higher in L1a4 than in Clila3. Interestingly, the comparative results in Clila3 and L1a4 are in line with the results from the comparison between T1 and T2 in the Clila3 group, where there was an increase in *continuing* moves, namely in *rejoinder-track* and especially in *prolong*, in T2. This could indicate, then, that the TT intervention programme has favoured the use of more *prolonging* and *rejoinder-track* moves in Clila3.

7.3.3.2 Knowledge layer

Table 7.13 in the previous section also shows the results of Clila3 and L1a4 in the use of registers and CDFs. Thus, even though L1a4 showed a significant increase in their use of the *instructional* register from T1 to T2 (see table 7.10 in section 7.3.2.2), it is still very significantly lower than its use in Clila3. As a result, L1a4 also shows a very significantly higher use of the *regulative* register and *social talk* as compared to Clila3.

To illustrate this preference in L1a4 as compared to Clila3, in extract 7.14, Elena, Gerardo and Juan are starting the activity and, while they are writing information about themselves, the conversation takes them to the topic of repeating one school year (*social talk*; lines 5 to 7). A bit further down in the same extract, Elena and Gerardo move to the *regulative* register.

- 1 *Elena: 4 del nueve.. ((she points at Gerardo))*
- 2 *Gerardo: El 30 de septiembre ((Elena calculates the number month))... ¿Eres*
- 3 *del %X%? ((to Elena))*
- 4 *Juan: %X%*
- 5 *Elena: ¿Qué?.. **Sino no hubieras repetido (SOCIAL TALK)***
- 6 *Juan: **Es que he repetido (SOCIAL TALK)***
- 7 *Elena: **No has repetido (SOCIAL TALK)***
- 8 *Gerardo: %X% ((they give them the booklet and he takes it)) otras*
- 9 *(...)*
- 10 *Elena: ¿Qué hora es? (social talk)*
- 11 *Gerardo: Pero este ya lo hemos hecho (REGULATIVE REGISTER)*
- 12 *Elena: Sí, lo tenemos que hacer otra vez... (REGULATIVE REGISTER)*

Extract 7.13: Use of *social talk* (in bold) and *regulative register* (underlined) in L1a4 in PSA in T2

The results referred to CDFs also seem to confirm findings put forward in the descriptive results in section 7.3.1 The findings present a significantly higher use in T2 of *giving-evaluations*, *prolonging-explanations* and *prolong-support* in Clila3 compared to L1a4 whereas in *giving-facts* as an *initiating* move L1a4 shows a strong preference as compared to Clila3.

Examples of the use of *giving-evaluations* to *initiate* in Clila3 can be frequently found:

- 1 *Alicia: [[**I think** .. this or this is one of these]](**GIVE EVALUATION**)*
- 2 *Saúl: ((shouting and pointing)) <L1SP %X% SPL1>*
- 3 *Lara: **I think** is this one .. this one, this one, is this one*
- 4 *Saúl: No, no, no .. **I think** is this one, this one, this one, ..look, look, look, this one*
- 5 *here ((pointing)) this one, this one here, this one*
- 6 *Lara: Okay number three*
- 7 *Alicia: Okay ((Lara turns to write and they pass the page))*
- 8 *Lara: **In this one I think** is this one here (**GIVE EVALUATION**)*

Extract 7.14: Use of *give-evaluation* in Clila3 in PSA in T2

As stated previously, the use of this move was normally initiated through the use of the chunk “I think” as illustrated in extract 7.14 (lines 1 and 8) both by Alicia and Lara. One student’s use of *evaluation* through this chunk often led the other students to follow and engage with the task.

Regarding *prolonging* moves, Table 7.13 shows that *prolong-confront* is used significantly more frequently in L1a4 compared to Clila3. In turn, *prolong-support* and *prolong-explanations* are used more frequently in Clila3. These results align with the increase from T1 to T2, already explained in section 7.3.2, with a higher use of *give-evaluations*, *prolong-explanations* and *prolong-support* in Clila3 and of *prolong-confront* in L1a4. These differences, then, might be explained as a result of the TT intervention programme. The higher use of *give-fact* and *prolong-fact* in L1a4 was however not found when comparing T1 and T2 within this group. It is worth considering, therefore, that the difference shown in table 7.13 showing a more frequent use of these moves in L1a4 might be a result of the high use of *give-evaluation* and *prolong-explanation* in Clila3 compared to L1a4.

In sum, in the knowledge layer, several differences across the two small groups (Clila3 and L1a4) were found. Clila3 uses significantly more the *instructional* register, *giving-evaluations*, *prolonging-explanations* and *prolonging-support* than L1a4. On the other hand, L1a4 uses the *regulative* register, *social talk* and *prolonging-confront* significantly more than Clila3. These results confirm and increase in the differences already acknowledged in the descriptive section 7.3.1 and 7.3.2.

7.3.3.3 Interactional layer

The interactional layer will be first analysed in terms of the first *equality* factor: distribution of turns. As none of the groups was categorized as *high in equality* in this factor, we will not analyse the second *equality* factor. The tables presented here are the same ones observed in the descriptive part and, therefore, the original table

number has been maintained. Both tables are presented in this section too in order to facilitate comparability.

Clila3 PSA T2	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 Lara	127 34.6%	711 27.41%	37 16.82%	5.3
Student 2 Alicia	132 35.97%	1266 48.8%	15 6.82%	9.4
Student 3 Saúl	108 29.43%	617 23.79%	168 76.36%	4.1
Total	367	2594	220 8.5%	

Table 7.8: Distribution of turns, words and the *regulative* register per student in Clia3 in the PSA in T2.

L1a4 PSA t2	Turns	Words	Av. words per turn
Student 1 Elena	94 29.94%	479 28.54%	5
Student 2 Juan	96 30.57%	402 23.96%	4.1
Student 3 Gerardo	124 39.49%	797 47.5%	6.4
Total	314	1678	

Table 7.12: Distribution of turns, words and regulative register per student in L1a4 in the PSA in T2.

The distribution of turns by the three students present very different patterns in L1a4 and Clila3. In Clila3, there is a *high equality* in the distribution of turns; in turn, in L1a4 shows *low equality*. Therefore, the intervention seems to have brought similar changes in these two groups, in fact, even the opposite results in L1a4. Both

groups are similar in the total number of turns per student. This contrasts however with a significantly higher number of words per student in Clila3 as compared to L1a4 (almost 1000 more words in total). Through the different extracts shown in previous sections we have seen how students in Clila3 tend to make longer turns (Alicia's turns are of especial importance here) and therefore the presence of more words in Clila3 compared to the L1a4 is proven.

Finally, regarding *mutuality*, both groups are low as what refers to giving feedback to each other. Students in Clila3 seem to be slightly more engaged with the content as they use *evaluations* more frequently. Meanwhile, students in L1a4 try to include all members by demanding opinions at certain times. Both *equality* and *mutuality* aspects seem to describe Clila3 as having a more *dominant/passive* interactional pattern and L1a4 as an *expert/novice* pattern. However, Clila3 seems to follow a pattern towards a more *collaborative* interaction. Might it be said however that the dominant members in Clila3 could bias a future of *high mutuality* and deviate it towards a *dominant/dominant* interactional pattern.

7.3.4 Summary of multi-layered analysis of PSA in T1 and T2

Quantitative and qualitative results have shown an evolution of both Clila3 and L1a4 after the intervention. However, changes have not gone in the same directions except for the increase in the use of the speech function *rejoinder track* and the increase in sharing ideas by all members in both groups.

In Clila3, the intervention has brought special changes in the use of *evaluations* (especially in *initiating* moves) and *explanations* (in *prolonging* moves), which have contributed to the production of longer turns. Within the interactional layer, *equality* and *mutuality* aspects changes have been contradictory.

In L1a4, perhaps the repetition of the task and the confidence of group members has contributed to them speeding up the PSA by using more *initiations*, feeling more confident to *confront* each other but also focusing more on the task by using the *instructional* register more. *Equality* factors before and after the intervention have evolved from *high equality* in the first *equality* factor (distribution of turns) in T1 to

low equality in T2. Feedback is also absent in L1a4, although sometimes opinions are asked for, but sharing of ideas, one of the key *mutuality* aspect, is present at all times and by all the group members.

In the comparison across the two experimental groups several of the differences already presented in the descriptive sections 7.3.1 and 7.3.2 have been acknowledged again. The intervention, apart from improving the sharing of ideas of both groups and the use of *rejoinder-fact*, did not seem to bring any other similar changes to the groups. In fact, more differences between both groups were identified in T2: the tendency towards *prolonging-facts* in L1a4 and towards *prolonging-explanations* in Clila3 and the higher use of the *regulative* register and *social talk* in L1a4. It is worth considering that, although both classes developed the intervention programme, the two teachers in the experimental groups had different teaching styles and ways of reminding students about what had been learnt in the *Thinking Together* program differed a lot. The Clila3 teacher followed the strategies proposed in the TT program and reminded students the ground rules frequently. In contrast, the L1a4 failed to remind students the rules regularly. One of the most important parts of the TT program (see chapter 3, section 3.3.3, for more details) was students establishing their own ground rules for talk and, once these established, performing several group activities where these rules were practised and needed to be reminded. In the L1a4 data, in extract 7.15, we find an example of the teacher reminding students about these rules while performing the PSA in T2:

- 1 *Juan: Espera*
- 2 *Gerardo: La..esta la uno porque aqui no hay nada*
- 3 ***Teacher: Chicos, [acordaos por favor de las reglas para trabajar, que no***
- 4 ***trabaje solo uno, que no os peleis]***
- 5 *Elena: [[Sí mira mira ((pointing))]]*

Extract 7.15: Teacher reminding L1a4 how to work in group in PSA in T2

As seen in extract 7.15, the L1A teacher reminded this group individually about the rules only briefly, almost on the go, making no special emphasis on them and, in fact, only mentioning two rules (lines 3-4). However, a clearly different procedure was

used by the CLILA class teacher (following the indications of the TT programme) as seen in extract 7.16:

- 1 **Teacher:** *I've explained we are starting the recording, ehh I have explained*
 2 *what you have to do but until we have hit all the recording we cannot... start..*
 3 *and put the time... ((Lara waves at the camera)) Jaime is going to tell me the*
 4 *time when I tell him, are you ready, Jaime?... wait.. when I tell you, in a*
 5 *moment I am going to tell you... ((Lara waves again))... **Everybody please***
 6 ***remember to use the ground rules for speaking ... please,..I insist***
 7 ***remember to use the ground rules for speaking .. let's repeat them... like***
 8 ***we do... <L1SP venga L1SP> so, what do we do..***
 9 **Students:** *Share our ideas and give a reason for them, listen actively and*
 10 *respectfully ((repeating them with the teacher)) we help each other and*
 11 *take responsibility for the good and for the bad, we agree in the end, we*
 12 *respect every opinion and we take %X% and we ask why*
 13 **Teacher:** *This last guys, is very important ...so I don't want you to tell me*
 14 *I've finished and then whenever I ask you have you asked why you tell*
 15 *me ah... no... so this is not about.. this is not about who finishes first,*
 16 *okay? is not about that.. okay?.. is about asking.. is about reflecting..*
 17 *okay? please, bear this in mind...*
 18 **Lara:** *Three, two, one, go!*

Extract 7.16: Teacher reminding Clila3 how to work in group in PSA in T2

The CLILA class teacher, who followed exactly the same training as the L1A class teacher, not only reminds students about the rules and how important they are (lines 5-7) but she even makes students repeat them (lines 7-8) and students do so (lines 8-12) and finally she insists on how important they are (lines 13-17). Since the main objective of the TT program is to promote the use of *Exploratory talk*, speech functions and CFDs that help include others (e.g. *demand-evaluation*), express opinions (*give-evaluation, support-evaluation, confront-evaluation*) and help justify them using reasons (*prolong, support and confront-explanations*) and in general try to end up with the group agreeing on an answer (predominance of *support*) might be promoted by this program. However, this fact also highly depends on the teacher following the program's instructions. The difference in how the

CLILA and the L1A teacher dealt with one of the main aspects of the program (ground rules) might explain the fact of the program triggering as many changes in L1a4 as in Clila3. This interpretation will be addressed in more detail in the discussion chapter X.

7.4 Differences between activities in CLIL: STA and PSA

In this section, we will compare the results obtained in the PSA by the Clila3 group before and after the intervention with the other activity performed by the Clila3 group: the STA. We will therefore firstly compare both activities in T1 and later the PSA in T2 (after the intervention) and the STA in the T1 (both activities were recorded in both moments however due to time constraints only the T1 is used in this study). This comparison across activities will help us determine whether the changes made by the Clila3 after the TT intervention programme are changes particular of the PSA activity or of the group itself after the intervention. In this section, as it was done in previous ones, we will present both quantitative and qualitative results on all layers of analysis.

7.4.1 Clila3 PSA T1 compared to STA

This part presents results on all layers of the Clila3 group in the PSA and in the STA in T1, that is, before the intervention program. Both the quantitative and the more salient qualitative results of the Clila3 PSA and STA comparison will be presented in the three layers of the model.

7.4.1.1 Discourse Layer

In this section, the results concerning the comparison between Clila3 in the PSA (T1 and T2) and STA (T1) in the discourse layer will be shown. Table 7.14 presents the quantitative results for the discourse and the knowledge layers. The first two columns relate to the PSA activity and columns three and four to the STA activity. The last two columns diagnose the relation of similarity or difference between both activities using the Chi-square and the level of significance. All this data is presented and used the same way as in previous tables.

In this section, the discourse layer we will discuss the results obtained in the Open-initiate, Speech-function, Sustain-type, Continue-type; React-type and Respond-type. Very significant differences are found in the use of *sustaining* moves and, within them, *continuing* moves between the PSA and the STA in Clila3. *Continuing* moves are significantly more used in the PSA. This very significant difference was also found in the general PSA and STA comparison done with all the CLIL groups (see chapter 6, extract 6.2). Another difference found across activities in the Clila3 is the higher use of *giving information* in the PSA in comparison with the STA. This difference was also found in the general comparison of all groups. In contrast, *demanding information* is significantly more frequent in the STA than in the PSA as was also acknowledged for the whole class. Therefore, in Clila3, PSA seems to favour the use of longer turns and *giving information* as a way of opening a turn. A significantly higher use of *rejoinder-track* is found in the STA as opposed to the PSA. This higher use of *rejoinder-track* was also found in the comparison between PSA T1 and PSA T2. This is most surely caused by the fact of the PSA T1 not having any use of this move. The next comparison with PSA T2 will enlighten results to determine whether there is a difference across activities or not. However, we must anticipate that the use of *rejoinder-track* was found significantly higher in STA when performing the comparison across (PSA and STA) activities of all of the CLIL groups.

	Clila3PSAM1		Clila3DA			
Feature	N	Percent	N	Percent	Chisqu	Signif.
REGISTER	N=441		N=312			
Instructional	402	91.16%	174	55.77%	127.26	+++
Regulative_register	39	8.84%	108	34.62%	77.25	+++
Social_talk	0	0.00%	30	9.62%	44.16	+++
SPEECH-FUNCTIONS	N=402		N=174			
Open_initiate	44	10.95%	34	19.54%	7.66	+++
Sustain	358	89.05%	140	80.46%	7.66	+++
OPEN-INITIATE	N=44		N=34			
Give-info	43	97.73%	15	44.12%	28.91	+++
Demand-info	1	2.27%	19	55.88%	28.91	+++

	Clila3PSAM1		Clila3DA			
Feature	N	Percent	N	Percent	Chisqu	Signif.
GIVE-INFO-TYPE	N=43		N=15			
Give-fact	29	67.44%	10	66.67%	0.00	
Give-evaluation	12	27.91%	3	20.00%	0.36	
Give-explanation	2	4.65%	2	13.33%	1.31	
DEMAND-INFO-TYPE	N=1		N=19			
Demand-fact	1	100.00%	14	73.68%	0.35	
Demand-evaluation	0	0.00%	0	0.00%	0.00	
Demand-explanation	0	0.00%	5	26.32%	0.35	
SUSTAIN-TYPE	N=358		N=140			
Continue	92	25.70%	11	7.86%	19.53	+++
React	266	74.30%	129	92.14%	19.53	+++
CONTINUE-TYPE	N=92		N=11			
Monitor	1	1.09%	0	0.00%	0.12	
Prolong	91	98.91%	11	100.00%	0.12	
PROLONG-TYPE	N=91		N=11			
Prolong-fact	31	34.07%	3	27.27%	0.20	
Prolong-evaluation	5	5.49%	3	27.27%	6.44	+++
Prolong-explanation	55	60.44%	5	45.45%	0.91	
PRIOR_MOVE	N=91		N=11			
Prolong-support	32	35.16%	4	36.36%	0.01	
Prolong-confront	50	54.95%	4	36.36%	1.36	
Prolong-other	9	9.89%	3	27.27%	2.86	+
REACT-TYPE	N=266		N=129			
Respond	266	100.00%	111	86.05%	38.89	+++
Rejoinder_track	0	0.00%	18	13.95%	38.89	+++
RESPOND-TYPE	N=266		N=111			
Support	170	63.91%	76	68.47%	0.72	
Confront	96	36.09%	35	31.53%	0.72	

Feature	Clila3PSAM1		Clila3DA		Chisqu	Signif.
	N	Percent	N	Percent		
SUPPORT-TYPE	N=170		N=76			
Su-fact	58	34.12%	44	57.89%	12.23	+++
Su-evaluation	16	9.41%	2	2.63%	3.56	+
Su-explanation	44	25.88%	20	26.32%	0.01	
Su-agree	52	30.59%	10	13.16%	8.46	+++
CONFRONT-TYPE	N=96		N=35			
Co-fact	16	16.67%	9	25.71%	1.36	
Co-evaluation	1	1.04%	7	20.00%	16.08	+++
Co-explanation	26	27.08%	7	20.00%	0.68	
Co-disagree	53	55.21%	12	34.29%	4.49	++

Table 7.14: Discourse functions, registers and cognitive discourse functions found in group Clila3 during the PSA and the STA in T1.

7.4.1.2 Knowledge Layer

Results related to the knowledge layer refer to all of the data retrieved from the other categories shown in the 7.14 table. At the register level, results show a very significant difference in the use of the *instructional register* from one activity to the other. The PSA activity favours the use of the *instructional register* whereas the STA has a significantly higher use of the *regulative register* and *social talk*. This difference was also found across the two activities in the whole of the CLIL group.

At the cognitive discourse functions level, very significant differences are found in the use of *prolong evaluation*, *confront evaluation* and *support facts* in the STA and *confront disagree* in the PSA. The difference between PSA and STA in *confront evaluation* and *support facts* were also presented as a general difference between STA and PSA in both groups (see CLIL and L1 across activities results); however, *prolong evaluation* has never been signalled as significantly more used in the STA compared to the PSA. Therefore, Clila3 is the first to signal this difference.

Supportive evaluations were also found slightly superior in the PSA compared to the STA. However, the difference in the use of *prolong evaluation* is, when examined

closer, not conclusive as the use of this move in STA is also very infrequent (5 uses, as shown in table 7.15).

7.4.1.3 Interactional Layer

Results related to the interactional layer in both the PSA and the STA activity are presented in this section. Tables 7.7 and 7.15 show quantitative results on the two equality factors of the interactional layer. Table 7.7 shows results in the PSA T1 and table 7.16 in the STA T1. Findings show that the interactional pattern in the two activities was very different. In the PSA, most of the turns, words and average number of words per turn were led by Alicia. In contrast, in the STA activity, Saúl, who had been the last in all these factors in the PSA activity, took the lead. Lara is the only one that remains in a similar position and with similar percentages across activities.

In the PSA and as described before, the participation of Alicia and Lara led the activity (see extract 7.5) and Saúl was left behind in the distribution of turns. The results on equality shown in the STA are completely the opposite. In extract 7.17 we examine closely what happened:

- 1 *Saúl: Now me, now me, now me ((he nods)) One ... another*
- 2 *Lara: How do you say the things that is to breathe?*
- 3 *Saúl: That they...eh...eh...*
- 4 *Alicia: But three.. examples!!*
- 5 *Saúl: ONE is here! ((shouting))*
- 6 *Alicia: [That`s why!!] ((shouting loudly))*
- 7 *Saúl: [[The squills!!]] ((responds loudly too))*
- 8 *Lara: There is three parts...*
- 9 *Saúl: [Of.. THAT ANIMAL]*
- 10 *Alicia: ((getting angry with Saúl)) [[there is..]]*
- 11 *Lara: Squills... No, there was another one*
- 12 *Saúl: Well.. ((Lara raises her hand))... which....Yes! ((playing with his pen))*
- 13 *no... # Alicia ((speaking to Alicia that is looking in other direction,*
- 14 *angry)) eh... now, eh... no, is fourteen one*

Extract 7.17a: Showing happenings that affected equality results in Clila3 STA T1.

Alicia seems to get angry with Saúl (lines 6 and 10) after him shouting at her (line 5) and he remains angry and refusing to participate (lines 14 and 15). This takes long as the following extract shows (extract 7.17b)

- 1 *Lara: <L2SP plumas... SPL2> Alicia; how do we write<L2SP plumasSPL2>?*
 2 *Saúl: ((Alicia doesn't answer and continues angry and looking in another*
 3 *direction))No, don't ask her she is %X% ... plums*
 4 *Lara: No...Feathers!*

Extract 7.17b: Showing happenings that affected equality results in Clila3 STA T1. Lara tries to bring Alicia back to the activity (line 1) but she ignores her and Saúl keeps picking on her (line 3). At last and after several tries from Lara to bring her back to the activity (extract 7.19c; lines 3, 4 and 8), she explains why she was not participating (line 9). Saúl seems to care little about Alicia participating or not (line 10); however, Lara does try to bring her back to the group, as shown before although she only takes part again a lot later.

- 1 *Lara: That what Alicia said..*
 2 *Saúl: That what? okay... that?*
 3 *Lara: If you are going to participate say it Alicia, But look, you are not*
 4 *participating*
 5 *Saúl: And that is <L2SP horrible L2SP>.. We are looking all <L2SP España*
 6 *L2SP>... to you, crying..*
 7 *Alicia: What?*
 8 *Lara: Come on!! participate!*
 9 *Alicia: No because, it don't want to listen me nothing, you know?*
 10 *Saúl: <L2SP pasa de AliciaL2SP> Pass of Alicia*

Extract 7.17c: Showing happenings that affected equality results in Clila3 STA T1.

Clila3 PSAM1	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 Lara	129 36.44%	738 32.4%	7 100%	5.6
Student 2 Alicia	148 41.81%	1185 52.02%	0	8
Student 3 Saúl	77 21.75%	355 15.58%	0	4.6
Total	354	2278	7 0.3%	

Table 7.7: Distribution of turns, words and regulative register by members of the Clila3 group in the PSA in T1.

Clila3 DAM1	Turns	Words	L1 words	Av. words per turn (not L1)
Student 1 Lara	113 36.69%	544 30.53%	15 27.27%%	4.6
Student 2 Alicia	74 24.02	382 21.44%	14 25.46%	4.9
Student 3 Saúl	121 39.29	856 48.03%	26 47.27%	6.8
Total	308	1782	55 3.08%	

Table 7.15: Distribution of turns, words and regulative register by members of the Clila3 group in the STA in T1.

As we can see in the extracts (7.17a, 7.17b and 7.17c) Saúl has acquired a dominant teasing role in this activity and Alicia tries to confront him (not giving up her dominant role) but ends up getting angry and not participating. Lara tries to bring her back several times and, in the end, she achieves it. All these events have strongly influenced the distribution of turns, number of words and average number of words per turn in the STA. This can help explain why the distribution of turns acknowledged for the PSA activity and where Alicia and Lara controlled the task is so different in the STA. In the PSA this group was categorized as half way between a dominant/passive and collaborative group. However, after acknowledging the incident described in the extracts (7.17a, b and c) and the results obtained in the STA, Clila3 has also shown its tendency towards a dominant/dominant pattern of interaction. This can be observed in how Saúl and Alicia are angry at one another for a long time.

In sum, general equality factors in both activities results put forward the fact that neither of the activities fosters an equal distribution of turns. Mutuality aspects, however, seem to be heading in the right direction (high use of evaluation) when major events don't get in the way (as see in the examples in extracts 7.19a, b and c).

7.4.2 Clila3 PSA T2 compared to STA

This part presents results on all layers of the Clila3 group in the PSA in T2, therefore after the intervention, and in the STA in T1, that is, before the intervention programme. Both quantitative and qualitative results are presented simultaneously.

7.4.1.1 Discourse layer

In this section the results related to the discourse layer on both PSA in T2 and STA in T1 of group Clila3 will be presented. Table 7.16 presents the quantitative results for the discourse and the knowledge layer. The first two columns relate to the PSA activity in T2 and columns three and four to the STA activity. The last two columns and the rest of the data is presented and used the same way as previous tables.

Within the discourse layer, we will discuss the results obtained in the Open-initiate, Speech-function, Sustain-type, Continue-type; React-type and Respond-type. Some differences found between PSA T1 and STA have decreased now in PSA T2: PSA in T2 shows significantly (but not “very significantly”) more uses of sustaining moves than STA in T1. This change appears to be motivated by the rise of *initiations* in the PSA T2. Other differences have prevailed: the significantly higher use of *continuing* moves in the PSA T2 compared to the STA T1. However, we must acknowledge that this rise was not found significant in the Clila3 group from T1 to T2 and the significant difference found in the initiating move *giving information* in the PSA T2 as compared to the STA. Both these two last differences were explained in the whole class comparison across activities, where longer turns were found in the PSA and a significantly higher use of *demand information* was found in the STA activity (see chapter 6). Another significant difference maintained, but this time in the STA, is the use of *rejoinder track* (with a slight decrease) in the STA compared to the PSA T2.

	Clila3PSAM2		Clila3DAM1			
Feature	N	Percent	N	Percent	Chisqu	Signif.
REGISTER	N=455		N=312			
Instructional	409	89.89%	174	55.77%	118.17	+++
Regulative_register	45	9.89%	108	34.62%	70.86	+++
Social_talk	1	0.22%	30	9.62%	42.13	+++
SPEECH-FUNCTIONS	N=409		N=174			
Open_initiate	51	12.47%	34	19.54%	4.90	++
Sustain	358	87.53%	140	80.46%	4.90	++
OPEN-INITIATE	N=51		N=34			
Give-info	47	92.16%	15	44.12%	23.85	+++
Demand-info	4	7.84%	19	55.88%	23.85	+++
GIVE-INFO-TYPE	N=47		N=15			
Give-fact	24	51.06%	10	66.67%	1.12	
Give-evaluation	22	46.81%	3	20.00%	3.40	+
Give-explanation	1	2.13%	2	13.33%	3.10	+

	Clila3PSAM2		Clila3DAM1			
Feature	N	Percent	N	Percent	Chisqu	Signif.
DEMAND-INFO-TYPE	N=4		N=19			
Demand-fact	2	50.00%	14	73.68%	0.88	
Demand-evaluation	0	0.00%	0	0.00%	0.00	
Demand-explanation	2	50.00%	5	26.32%	0.88	
SUSTAIN-TYPE	N=358		N=140			
Continue	113	31.56%	11	7.86%	30.25	+++
React	245	68.44%	129	92.14%	30.25	+++
CONTINUE-TYPE	N=113		N=11			
Monitor	1	0.88%	0	0.00%	0.10	
Prolong	112	99.12%	11	100.00%	0.10	
PROLONG-TYPE	N=112		N=11			
Prolong-fact	23	20.54%	3	27.27%	0.27	
Prolong-evaluation	3	2.68%	3	27.27%	13.06	+++
Prolong-explanation	86	76.79%	5	45.45%	5.11	++
PRIOR_MOVE	N=112		N=11			
Prolong-support	72	64.29%	4	36.36%	3.31	+
Prolong-confront	38	33.93%	4	36.36%	0.03	
Prolong-other	2	1.79%	3	27.27%	16.68	+++
REACT-TYPE	N=245		N=129			
Respond	240	97.96%	111	86.05%	20.78	+++
Rejoinder_track	5	2.04%	18	13.95%	20.78	+++
RESPOND-TYPE	N=240		N=111			
Support	168	70.00%	76	68.47%	0.08	
Confront	72	30.00%	35	31.53%	0.08	
SUPPORT-TYPE	N=168		N=76			
Su-fact	69	41.07%	44	57.89%	5.96	+++
Su-evaluation	20	11.90%	2	2.63%	5.49	+++
Su-explanation	31	18.45%	20	26.32%	1.96	
Su-agree	48	28.57%	10	13.16%	6.86	+++

Feature	Clila3PSAM2		Clila3DAM1		Chisqu	Signif.
	N	Percent	N	Percent		
CONFRONT-TYPE	N=72		N=35			
Co-fact	7	9.72%	9	25.71%	4.74	++
Co-evaluation	8	11.11%	7	20.00%	1.54	
Co-explanation	12	16.67%	7	20.00%	0.18	
Co-disagree	45	62.50%	12	34.29%	7.53	+++

Table 7.16: Discourse functions, registers and cognitive discourse functions found in group Clila3 during the PSA in M2 and the STA in T1.

7.4.1.2 Knowledge layer

In this section, the results related to the knowledge layer on both PSA in T2 and STA in T1 of group Clila3 will be presented. Results related to the knowledge layer, which refer to all of the data retrieved from the categories not mentioned in the 7.16 table yet, highlight no changes at the register level. At the register level, and similarly to the comparison with PSA T1, results show a very significantly higher use of the *instructional register* in the PSA in T2 as opposed to the STA in T1. It is therefore confirmed that, even after the intervention, the PSA activity favours the use of the *instructional register* whereas the STA has a significantly higher use of the *regulative register* and *social talk*.

At the cognitive discourse functions level, the very significantly higher use of *prolong-evaluation* and *support facts* in the STA and *confront disagree* and *support agree* in the PSA are maintained. As these four differences between PSA and STA were also present at the general class level, this probably confirms that the PSA promotes a significantly higher use of *confront disagree* and *support agree*. In turn, the STA triggers a significantly higher use of *prolong-evaluation* and *support facts*. In addition, other changes between T1 and T2 might be resultant of the intervention. The first is the disappearance of *confront-evaluation* as significantly higher in the STA compared to the PSA. This puts forward the increase of the use of *confront-evaluation* by the Clila3 members in the PSA activity after the intervention. However,

this increase (from 1% in PSA T1 to 11% in PSA T2) is still nowhere near the frequency that *confront-evaluation* (20%) has in STA T1.

Finally, a new *prolong* comes into play in PSA T2 and that is the significantly higher use of *explanations* for *prolonging* moves in PSA T2 compared to STA T1.

All these results draw a developing picture of the Clila3 group members after the intervention. Members in PSA T2 seem to have increased their *evaluations* when supporting and their *explanations* when *prolonging*, probably after a *disagree* move, which have also seen an increase from T1 to T2.

Prolonging explanations were already marked as generally used more in the PSA; however, the increase in the use of them after the intervention and the lack of it in the STA has increased its significance.

7.4.1.2 Interactional layer

In this section, the results related to the interactional layer on both PSA in T2 and STA in T1 of group Clila3 will be presented. Tables 7.8 and 7.15 show quantitative results on the two equality factors of the interactional layer. Table 7.8 shows results in the PSA T2 and table 7.15 in the STA in T1. Findings show that the interactional pattern in the two activities is very different. The changes acknowledged in T1 seem to have been maintained in T2 and the comparison underlines how in STA T1 Saúl also shows the highest percentage in number of turns and words and the highest percentage. In PSA T2, most of the turns, words and average number of words per turn were led by Alicia; in turn, in the STA activity this participation lead is taken by Saúl. Lara remains in a similar position and with similar percentages across activities, too.

Clila3 PSAM2	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative
Student 1 Lara	127 34.6%	711 27.41%	37 16.82%	5.3	21 46.67%
Student 2 Alicia	132 35.97%	1266 48.8%	15 6.82%	9.4	17 37.78%
Student 3 Saúl	108 29.43%	617 23.79%	168 76.36%	4.1	7 15.55%
Total	367	2594	220 8,5%		45

Table 7.8: Distribution of turns, words and regulative register by members of the Clila3 group in the PSA in T2.

Clila3 DAM1	Turns	Words	L1 words	Av. words per turn (not L1)	Regulative
Student 1 Lara	113 36.69%	544 30.53%	15 27.27%%	4.6	41 37.96%
Student 2 Alicia	74 24.02	382 21.44%	14 25.46%	4.9	21 19.45%
Student 3 Saúl	121 39.29	856 48.03%	26 47.27%	6.8	46 42.59%
Total	308	1782	55 3.08%		108

Table 7.15: Distribution of turns, words and regulative register by members of the Clila3 group in the STA in T1.

Again, neither of the activities foster an equal distribution of turns. The change of roles seems to go hand in hand with the STA activity in T1 as similar differences are found when comparing the STA with either PSA T1 or PSA T2.

Results, then, do not bring many differences to the ones already mentioned in the PSA T1 comparison with STA T1. However, the change in the distribution of turns (from unequal lead by Saúl in STA T1 to unequal lead by Alicia in PSA T2), number of words and average number of words per turn (both lead by Saúl in STA T1 and also both by Alicia in the PSA T2) was very pronounced.

7.4.3 Summary of differences across activities

In this section we have compared and presented results across the PSA and STA activity. A CLIL group that followed the TT intervention programme was randomly selected to make this quantitative and qualitative analysis in order to show possible changes brought by the TT intervention programme and not linked to the type of activity performed.

Findings have shown that the *Thinking Together* intervention programme has put forward few distinctive features across activities (PSA and STA) compared to the ones shown for the whole CLIL group (see chapter 6). Results have shown how PSA T2 has significantly more initiations and less sustaining moves than STA.

Findings have put forward how the intervention (PSA T2) has increased the use of *giving information* when *initiating* compared to STA. Stronger differences have also been found in the Knowledge layer, specifically in the higher production of *confront disagree*, *support agree*, *evaluations* and *explanations* in *responsive* and *prolonging* moves in PSA T2 as compared to STA .

In the interactional layer and due to the discussion between two group members (Saúl and Alicia) in the STA, comparisons have not put forward any significant results other than the ones already presented in the comparison before (T1) and after the intervention (T2) in the PSA.

7.5 Chapter summary and brief discussion

Chapter 7 presented the findings related to the Part 2 of the study. The chapter has presented quantitative results on the experimental research performed before and after the TT intervention program. It has also shown quantitative and qualitative results of the TT intervention program using all three layers of the model (discourse, knowledge and interactional layer).

In sum, this chapter has sought to answer RQ4 AND RQ 5, which are the following:

- RQ4: How do CLIL and L1 groups solve problems?
- RQ5: How is knowledge co-constructed in CLIL after the intervention?

RQ1 was answered following the trace of previous studies (Mercer 1999; Rojas Drummond 2003). The results obtained in the Raven's Test of Progressive Matrices in the CLIL experimental class (CLILA) and later in the L1 experimental class (L1A) have been presented firstly. Results within this section have been compared longitudinally. Later improvements and differences were sought off within the CLIL and L1 experimental groups and between experimental and control groups. In reference to RQ 4.1 results have shown an improvement in half (L1A) and slightly more than half (CLILA) of the group reasoning results in the experimental classes. Referring to RQ 4.2 previous results have proven to be superior, at least in the CLIL class, to the ones obtained in parallel control groups. Lastly, and answering RQ 4.3, CLIL improvements have proven to be slightly superior than the ones produced in the L1 as more small working groups have shown a higher punctuation in the T2 in CLIL experimental group than in the L1experimental group.

In relation to research question five (RQ5) , the multi-layered model put forward by this study was used. The dive into how students co-construct knowledge after the intervention required a much in depth analysis that was done firstly in a comparative way with one Clil (Clila3) and L1 group (L1a4). At this level (RQ5.1), results have shown how the intervention has resulted in changes that have gone in different directions for Clila3 and L1a4 except for the increase in the use of *rejoinder-track*. The TT intervention programme has intensified *evaluations*, *explanations* and *disagree* in longer turns in Clila3 and has fostered more focus on task and initiations in L1a4. Within interactional aspects, although no advances in equality factors were accounted for after the intervention, minor changes in mutuality aspects such as engagement with the activity content and concern in the participation and sharing of ideas of all group members have been a common evolution of both groups (L1a4 and Clila3). Secondly, and in order to ratify results and contrast whether these are determined by the activity-type or moment (PSA T1; PSA T2 and STA T1) or one of the groups that followed the programme (L1a4 or

Clila3), a comparison across groups and activities with Clila3 as centre group was put forward (RQ 5.2). Results in this comparison have helped separate the result of the intervention across the different groups and activities. It has been signalled a higher use of evaluations in the Clila3 group and especially in the PSA after the intervention (both in its *supportive* and *confrontive* version) and the tendency towards longer turns (*prolongs*) and the use of *rejoinder-track*. This has mostly intensified the differences already signalled in the PSA and STA comparison within the whole CLIL group in chapter 6.

To sum up, results after the intervention have described improved group reasoning results in Clila3 that go hand in hand with longer turns, a stronger engagement with the content by the use of *I think* and an interest towards not simply complying or disagreeing but also justifying responses using *because* while *supporting* and *confronting*. Within interactional patterns equality is built unevenly and mutuality comes and goes. Activities and teaching styles seem also determining factors that will have to be further discussed.

Chapter 6 and chapter 7 have presented the results driven to answer this study's research questions, in the following chapter, a discussion of the findings of these two chapters will be provided.

RESULTS

Discussion and conclusions

“Mr. Emerson chose his words carefully:

*‘What I want to do... I want to leave you this morning...
with a picture of something that might help you to believe
that that [knocking on the table] can push up.’*

*Thus, the teacher did not talk of proving some students right and others wrong, but
of helping them believe in a difficult idea.”*

(Scott, 2008:35)

Chapter 8: Discussion and conclusions

Introduction

Discourse Knowledge Interaction multi-layered analytical model

Part 1 of the study: Co-construction of knowledge

Co-construction of knowledge in CLIL group work

Co-construction of knowledge in L1 group work

Comparing co-construction of knowledge across groups

Comparing co-construction of knowledge across activities

Part 2 of the study: Problem solving and co-construction of knowledge after the Thinking Together Intervention Program

Group reasoning during problem solving in CLIL and L1 before and after the TT intervention program

Co-construction of knowledge before and after the TT intervention program

Comparing co-construction across groups

Comparing co-construction across activities

Research applications of the study

Pedagogical applications of the study

Limitations of this study

Directions for further research

Summary and overview of the study

Concluding remarks

8.1 Introduction

The multi-layered analytical model, presented in chapter 5, was designed with the aim of creating a transdisciplinary research construct to explore content and language integration in CLIL and other learning contexts. The *Thinking Together* intervention program outlined in the same chapter aimed at improving small group talk and reasoning in the class at three levels: discourse, knowledge and interaction. Chapter 6 presented the findings on the co-construction of knowledge and content and language engagement in group interactions in both the CLIL and the L1 settings. Chapter 7 presented the findings on joint reasoning and the effects of the TT intervention program developed by two teachers in two experimental groups (one in CLIL and one in L1). The findings presented in these two chapters (6 and 7) addressed the five research questions of the present study. Chapter 5, then, dealt

with two methodological aims: **I.** To design a multi-layered analytical model which would allow to operationalise and research content and language integration; and **II.** To design and implement an intervention program that helps students both in CLIL and L1 settings improve their small group working skills. The application of these models helped achieve the two overall objectives of the thesis, which were addressed in chapters 6 and 7: **O1.** To develop a deep understanding of learning opportunities in group work interaction in primary classrooms, by focusing on the integration of language and content; and **O2.** To evaluate the effectiveness of an intervention program aimed at improving small group talk and reasoning in the class at three levels: discourse, knowledge and interaction.

This chapter is structured in the following way: section 8.2 starts with the discussion of the value of the multi-layered model proposed by this study. Next a discussion of the relevant findings related to the research questions is provided. This discussion will be approached from each of the theoretical perspectives that constitute the present study. However, a special attention is given to the aspects that help relate the results to the three types of talk defended by Barnes (1977). The first focus point is the co-construction of knowledge (8.3), realised by the CLIL students (section 8.3.1; RQ1) and by the L1 students (section 8.3.2; RQ1). Then the comparison of the co-construction of knowledge across groups (section 8.3.3; RQ2) and activities (section 8.3.4; RQ3) will be discussed.

The second focus point relates to the results obtained after the *Thinking Together* intervention program (8.4). In section 8.4.1 (RQ4), findings from group reasoning measured through Ravens Test of Progressive Matrices are discussed in comparison with those obtained previously by Mercer et al. (1999) and Rojas-Drummond et al (2003). Secondly, co-construction of knowledge through the lens of an experimental (intervened) CLIL focus group is described (8.4.2) to be later compared with an L1 experimental group (8.4.3) and the type of activity type (8.4.4). All in all, this part aims at evaluating the value of the TT intervention program and therefore it's improvements and benefits are discussed in section 8.4 (RQ5).

Next, and as mentioned previously, the applications to research that the proposed multi-layered model would have will be discussed in section 8.5. In section 8.6 the applications of the findings to classroom and language pedagogy will be discussed. This final section will open the door to account for this thesis limitations (8.7) and a revision of future research (8.8). Finally, after a summary and overview of the study (8.9), this thesis concluding remarks (8.10) are presented.

In order to facilitate the summary of the main discussion points in each section these have been highlighted in bold and numbered. In addition, two figures summarizing the results in chapter 6 (figure 8.1) and chapter 7 (figure 8.2) have been elaborated to simplify the discussion of the relevant findings (see figures at the end of this chapter).

8.2 Discourse Knowledge Interaction multi-layered analytical model

As mentioned before, chapter 5 presented the analytical model proposed in this study to investigate content and language integration in group work. In order to account for this complex process a three-layered analytical model was proposed. The three layers were: **Discourse layer**, **Knowledge layer** and **Interactional layer** (DKI). These three layers together aimed to give a complete perspective of the discursive, cognitive and interactive elements that interplay in class group work. Putting together diverse elements to develop an analytic model for classroom discourse is not a novelty. In Mercer, Wegerif and Dawes's (1999) analysis of exploratory talk, significant discursive and linguistic elements that characterise this type of talk were identified, such as: "because", "agree" and "I think". In Rojas-Drummod et al. (2003) the analysis was performed using a model that was announced as being discursive, cognitive and social but that, in fact, was a more profound and improved version of the model used by Mercer et al. (1999) and another model proposed by Mercer and Wegerif (1996). It must be said, however, that the model proposed by Rojas-Drummod et al. (2003) did analyse data in a more thorough manner. Years after, the need for a more detailed framework was put forward and Hennessy et al. (2016) presented an analytical model to fulfil this need, called Scheme for Educational Dialogue Analysis (SEDA). This scheme is situated

within a sociocultural paradigm, and draws on Hymes' Ethnography of Communication to highlight the importance of context. It consists in a descriptive list of 'communicative acts' that can be found in classroom talk.

All of the analytical models mentioned above, which are framed in a sociocultural perspective, have something in common. They all explore the discursive elements that are used for knowledge construction; however, none of them take into account interactional aspects. In turn, in the studies where we *do* find an interactional analysis (Ballinger, 2013; Damon and Phelps, 1989; Storch, 2002), cognitive and discursive features are not considered. The present study fills this gap by putting together an analytical model that uses both discursive and cognitive elements together with interactional factors.

Eggin and Slade's (1997) SFL perspective on language use understands language as inextricably linked to its meanings and context. Their model for the analysis of interaction, then, seems more adequate for the analysis of content and language integration in discourse than other models, such as IRF. There are other SFL applications for the analysis of classroom discourse in L2/CLIL contexts (Llinares, 2006, 2007a,b; Llinares and Pastrana, 2013; Llinares and Romero, 2007; Pastrana, 2010; Riesco-Bernier, 2007), as well as models that investigate discourse and cognition in CLIL, such as the CDF construct proposed by Dalton-Puffer (2014). The combination of these frameworks (SFL and CDF) in this study has proven useful to integrate the discourse and cognitive aspects in the understanding of content and language integration in group work. However, this study has gone further and has combined these two levels (discourse and/or knowledge, language and/or cognition) with students' interactional participation.

Recent studies that advocate for the exploration of content and language integration and for an enriching perspective of different theoretical models combined (Llinares et al., 2012) have proposed taking into account the more social element of interaction (Llinares and Morton, 2016). However, no studies on CLIL have been found that have explored the social variable from an interactional perspective in line with the patterns proposed by Storch (2002). The value of Storch's (2002) framework is in the use of both equality and mutuality aspects when determining

the type of interactional pattern present in group work or pair work sessions. These two factors are easily researchable in oral activities and encapsulate concepts that are close to *exploratory talk*.

Therefore, this study has contributed with a **multi-layer perspective that takes into account not only the integration of content or knowledge being communicated and speech functions but also the presence of roles or different forms of interactivity within group interaction or any type of interaction (1)**.

Many authors have stated how the presence of certain roles or identities (Wells, 1999; Goffman, 1981) influences any type of interaction. These roles have also been proven to exercise a powerful influence within the task and language and content used (Llinares and Morton, 2010). Llinares and Morton (2010) found that the interactional space generated by different activities triggered different participating roles as animators, principals or authors (Goffman, 1981) by CLIL students. Moreover, certain interactional styles have proven to influence L2 effective learning more than others (see Ballinger, 2013; Storch, 2002). Therefore, the consideration of the interactional level within an analytical model is more than justified.

In sum, **the use of this multi-layered analytical model has enriched data analysis and has provided a layer by layer account of the process of languaging to knowing and reasoning in group work (2)**. Evidence of this is that the multi-layered analysis performed to the large corpus used in this study obtained results comparable to qualitative analysis performed in small corpora (Mercer et al., 1999; Rojas-Drummond et al. 2003).

8.3 Part 1 of the study: Co-construction of knowledge

The results presented in chapters 6 and 7 accounted for the findings obtained at the different layers (discourse, knowledge and interactional layer) in a separate way. In this section we will firstly put together the findings of all three layers to obtain the perspective proposed by this study: an integrative view of the co-construction of knowledge by CLIL and L1 students in group work. We will discuss the answers to the following research questions:

PART 1

RQ1. How is knowledge co-constructed in CLIL and L1 group-work activities?

RQ1.1 What type of speech functions do CLIL and L1 students produce?

RQ1.2 What type of knowledge is displayed in CLIL and L1 students' use of registers and cognitive discourse functions?

RQ1.3 What type of interaction takes place in CLIL and L1 group-work in terms of the equality and mutuality fostered in the groups?

RQ2. Are there differences in the three layers (1.1, 1.2, 1.3) above between CLIL and parallel groups working on the same activities in the L1? If so, which are they?

RQ3. Are there differences in the three layers (1.1, 1.2, 1.3) above when students in CLIL and L1 groups participate in a science topic discussion and a problem solving discussion? If so, which are they?

Following these research questions, a discussion of the relevant findings is proposed. We will therefore deal with the following topics:

- Co-construction of knowledge in CLIL group work (RQ1)
- Co-construction of knowledge in L1 group work (RQ1)
- Comparison of co-construction of knowledge across groups (RQ2) and activities (RQ3)

As indicated above, these three aspects seek to answer research questions 1 to 3 in PART 1 of this study (see figure 8.1 for summarized findings and research questions)

8.3.1 Co-construction of knowledge in CLIL group work

In relation to **RQ1 (How is knowledge co-constructed in CLIL group-work activities?)** findings indicate that CLIL students' initiations in group talk are characterized by *giving facts* most of the times. *Giving* is the preferred speech function and *facts* the type of knowledge mostly used. After *giving facts* results have proven *giving evaluations* as the second preferred option. Opening/Initiating moves that are not naturally driven but that respond to a prompt can be expected to start by *giving information*. The speech function of *giving* is, thus, responding to the stimulus fostered by the prompt's questions.

The preference for facts was common in both academic-content related activities analysed (3). The science topic discussion activity (STA), related to a science topic (animal and plant adaptation), demanded frequent *facts* (see appendices 3 and 4; STA prompt questions 1, 3 to 6). This was also the case in the problem-solving activity (PSA) where *facts* were also demanded since the students had to choose a preferred option between 4 or 6 (see appendices 6 and 7; Raven's test sample). The frequent use of *facts* in CLIL classrooms has been reported in earlier studies. In their analyses of teacher questions, Dalton-Puffer (2007) and Pascual Peña (2010) show that questions for *facts* form a clear majority (63–88 %) of the total number of teacher questions in both their data (from the Austrian and Spanish contexts, respectively). Both studies also highlight the preponderance of minimal student answers in response to this type of questions. This finding is also reported in the present study in a different type of interactional setting (group work) and at a different educational level (primary).

The second preference in the CLIL group discussions analysed in relation to the Knowledge Layer was *evaluations*. This resulted in the students' engagement with each other's contributions within the activities. **CLIL students' evaluations made them active participants in the discussion about the content referred to (4).** As Llinares and Morton (2016) write "using the resources of language to take a stance is fundamental to being a recognized member of an academic community" (2016: 2). Therefore, the use of this cognitive discourse function is key to the students' appropriation of the subject knowledge.

When CLIL students are *responding* to one another in their groups, findings have shown they tend to be *supportive* of each other. *Supportive* responses tend to be presented as *facts* and quite often also to express *agreement*. **The drive toward task completion might be the cause of the predominance of support (5)**, since *support* favours *agreement* and *agreement* is needed to complete the question or item discussed at hand and pass to the next. In other words, the purpose of the group work activities, with the aim of completing a task, could explain the high use of *supporting facts*.

Findings also show that *confronting* responses lag far behind *supporting* responses in CLIL students' group discussions. When this speech function was used, it was done mostly in the form of *disagreement*. Interestingly, these were often followed by *prolonging explanations*, which did not follow *supporting* moves as much as *confronting* ones. It seems, then, that students need to justify their answers when *confronting* and perhaps not so much when *supporting*. It is, thus, a constructive way of building agreement. **The findings on the frequent use of explanations when prolonging confirm the intention of making statements defensible and convincing for other members, especially after disagreements (6)** One of the descriptors that Barnes (1977) uses for *Exploratory talk*, and in opposition to *Cumulative talk*, is the use of *explanations*. As pointed out in chapter 3 section 3.3.2, Mercer and Wegerif (e.g. Mercer, 1995; Wegerif and Mercer, 1996; Wegerif and Scrimshaw, 1997), after the work by Douglas Barnes (1976), identify three types of talk: *exploratory*, *cumulative* and *disputational*. *Exploratory talk* is characterized as a critical but constructive engagement of participants with each other's ideas. They exemplify it by saying that in this type of talk suggestions are offered for joint consideration (*supporting facts*) and these may be challenged and counter-challenged (*confronting moves, disagree*) but challenges are justified (*prolonging explanations*) and alternative hypotheses are offered. In turn, in *cumulative talk* opinions and ideas are exposed without arguing (*facts, evaluations* with no *prolonging moves*) or explaining the reasons for exposing them (lack of *explanations* and frequent *agreement* without *prolonging moves*) and every participant intends to please the rest of the group or at least to avoid confrontation. **Therefore, the presence of supportive moves and explanations following disagreements are**

evidence of primary school CLIL students' participation in *Exploratory Talk* in group work (7). As pointed out by Mercer et al. (1999) and Rojas-Drummod et al. (2003), one of the key linguistic features of *Exploratory talk* is the use of 'because' by students to express reasoning. In the present study, this use of 'because' labelled under *explanations* was also found in the form of explanations. In addition, other explanations that fulfilled the same objective without 'because' were also taken into account in this thesis.

In contrast with the findings in the discourse and knowledge layers, results from the interactional layer do not seem to confirm the collaborative pattern of interaction expected in a group fostering frequent *Exploratory talk* (8). The CLIL groups analysed reveal a type of interaction where the **most common pattern is the dominance of one of the members as an expert and the inexperience and lack of participation of the other two members.** In Storch's model of dyadic interaction (2002) **this would be an expert/novice interactional pattern (9).** Two groups were firstly taken as equality holders in distribution of turns and control of the activity; however, further comparisons in a more in depth analysis of the two activities independently (STA and PSA) put these first results in doubt. On the other hand, the qualitative analysis of mutuality factors did show **a tendency towards mutuality present in the feedback used by CLIL learners instantiated through the frequent use of evaluations in the analysis of the Knowledge Layer (10).** In Storch's study (2002) the two dyadic patterns that were presented as favouring the most effective L2 learning were the collaborative pattern and the expert/novice pattern. This being so, the fact that the CLIL groups were characterised as expert/novice seems positive and is expected to foster effective learning. Nevertheless, collaboration is the desired pattern if we are to foster an equal distribution of roles within the group. In this respect, results after the intervention appeared to indicate that groups were in the path for a more collaborative interactional pattern.

In the next section, the results on the co-construction of knowledge by the L1 students will be discussed.

8.3.2 Co-construction of knowledge in L1 group work

In what refers to **RQ1 (How is knowledge co-constructed in L1 group-work activities?)** and similarly to the CLIL group, L1 findings presented in chapter 6 show the predominance of *opening/initiating* speech functions stated as *giving facts*. This mode of initiation is evidently not exclusive of the CLIL setting and related to the demands of both the STA and the PSA activities.

Evaluations are also the second preferred option for L1 groups and, as stated previously, this involves a certain level of engagement of the students in the activity. In the L1 group these ***evaluations are mostly in the form of demands, which represent a move towards engaging or including others in the activity at hand (11)***. Its presence signals mutuality in the groups.

L1 students' *responses* after another member's turn tend to be *supporting*. *Supporting facts* are the type of knowledge mostly used followed by *agree*. These language and content choices, similarly to what was described about the CLIL group, could be caused by the prompts in the STA and the PSA, which elicit answers as *facts*. The interest in completing the task favours the use of *support*, which leads to *agreement*, and when there is *agreement* the question is completed.

Confronting responses are far behind *supporting* responses for L1 students, as shown in chapter 6. However, as in the CLIL group, when this speech function was used, it was mostly done in the form of *disagreement*. *Disagree* is also connected to *prolong explanation* for the same reasons stated for the CLIL group. *Explanations*, which are defining features of *Exploratory talk*, were not only used to justify disagreements. In the TT intervention program, the Ground Rules for Talk that children had to develop included giving reasons for their answers (for full TT program see appendix 11, for ground rules developed by the CLIL and L1 group see appendices 12 and 13). As stated before in reference to the CLIL group, giving reasons was considered by several researchers an indicator of the presence of *Exploratory talk* (Mercer et al. 1999; Rojas-Drummod et al. 2003).

In the interactional layer, none of the L1 groups showed equality for both of the two equality factors (distribution of turns and equal control of the activity). Thus, results on the L1 groups have presented a scenario where **the most common pattern is the dominance of two of the members and the passivity of the other member which in Storch's model of dyadic interaction (2002) would represent a dominant/passive pattern with both low equality and low mutuality (12)**. Since no equality was found no qualitative analysis was performed in these groups. However, the predominance of *support* in the Discourse Layer and of *agree* and *support fact* in the Knowledge layer evidence an interest in reaching agreement that could be descriptive of a dominant/passive interactional pattern. Lack of experience in group work could not justify such a lack of equality and mutuality as the L1 school that participated in this study uses group work frequently in the classroom, especially in the science subject, where their curriculum is mainly based on project-based learning. Some authors (Jadallah 2000, Maybin 1994, Rojas-Drummond et al. 2003) have stated that the fact of participating in many group activities or working with their peers often does not imply co-construction of knowledge in those group activities. As Rojas-Drummond et al. (2003) put it, it is not enough to get students to interact for them to construct relevant knowledge (2003: 655). In the light of the results in this study, it seems evident that this is the case in the L1 groups analysed.

8.3.3 Comparing co-construction of knowledge across groups (CLIL and L1)

In response to **RQ2. (Are there differences in the three layers (1.1, 1.2, 1.3) above between CLIL and parallel groups working on the same activities in the L1? If so, which are they?)** a discussion of the comparative findings obtained across groups (CLIL and L1) will be presented in this section.

Two interesting factors were noticed in the comparison of the groups. In CLIL, there was a higher percentage of *rejoinder-track* and of reacting moves in general compared to the L1 groups. In turn, in the L1, a more frequent use of *monitor* and continuing moves in comparison to the CLIL group was acknowledged. This implies that both groups are concerned with the status of the communicative interaction. In the L1 the tendency is to use clarification requests to check if the rest are following

(*monitor*) whereas in CLIL these demands for clarification are centred in checking if the listener has understood correctly (*rejoinder-track*).

As previously suggested in chapter 6, this difference could be related to the use of their L1 or L2 respectively. It seems understandable that L1 students are more concerned with checking that their peers are paying attention to what they say rather than to checking understanding, as it is the case in the CLIL groups. The L1 students do not expect language to be a barrier and every member is expected to understand what is said. Therefore, the checks used have the purpose of confirming that the other members are *listening* actively and are not distracted by any other thing. In the CLIL setting, however, since students are using an L2, the language can be considered a barrier in the sense of understanding or knowing the words used. The CLIL students in the study often check if the message has been understood rather than if the rest of the group members are listening. This result can be linked to the findings on the presence of *demanding facts* with a metalinguistic purpose in the CLIL groups. In sum, the difference in the frequent use of *rejoinder track* and *demanding facts* (with a metalinguistic purpose) in the CLIL groups compared to the L1 groups can be explained in relation to the activity taking place in the L1 or L2. **The L2 CLIL groups were more concerned with understanding whereas the L1 groups were more concerned with the state of the communication channel or listening factors (13).**

Findings in chapter 6 have shown that although both groups are highly dependent on *facts*, there is a higher use of *explanations* in the L1 compared to the CLIL group and a higher used of evaluations in CLIL compared to the L1. L1 students use *explanations* in the form of *prolonging* (normally after disagree) or sustaining *supportive* moves. On the other hand, *evaluations* are preferred by the CLIL group especially when *initiating*.

The higher use of explanations in the L1 could be linked to the language proficiency students have in their mother tongue, which facilitates their ability to explain, especially in long moves such as the ones involved in *prolong-explanations*. Although both groups tend to justify confrontation through *explanations*, L1 students use *prolonging explanations* and *supporting explanations* more than their CLIL peers.

In turn, evaluation, which communicates a high level of engagement, was used more frequently by CLIL students than their L1 peers. In a more qualitative analysis it was seen that CLIL students often initiated their evaluations through the chunk *I Think*. In fact, out of 284 giving evaluation moves in all the data, 212 (74,6%) were performed by CLIL students. Out of these 212, 161 (76%) were initiated by *I think*, while the rest were mostly uses of *I know* or evaluations of the difficulty of the activity (see appendix 19 for detailed results). **The high use of *I think* in the CLIL group could be interpreted as a characteristic of hedging in English (14).** Thus, it could be argued that in English language L2 academic contexts, the language is often used in a tentative way, with caution, measuring the level of certainty transmitted. In the L2 classroom, this hedging could be seen as characteristic as it is often taught by teachers as a way of communicating in the class. Teachers often ask students to build complete sentences using “I think”. English and CLIL teachers often also tell students to ask other members of the group what they think. However, such type of sentence building might not frequently be observed in Spanish, not even in academic classroom contexts. Neither of course is it used as a chunk that needs to be repeated in the form of a complete sentence. Few examples found in the L1 were introduced by “creo” or “yo creo” (72 in total; see appendix 19).

Findings also revealed that the CLIL group was more focused on content than the L1 group, as CLIL students showed a higher participation in the *instructional register*. In turn, L1 students went off-task more frequently with the use of *social talk* and dedicated also more time to organizational aspects, as shown in their higher use of the *regulative register*.

At the interactional level, there was a higher presence of inequality in L1 groups compared to CLIL groups in what refers to distribution of turns. Findings have also shown a higher level of equality in the CLIL groups in what refers to distribution of the *regulative register*. When putting together results from the knowledge layer and the interactional level, it appears that the L1 groups find it easier to deviate from the topic at hand and dedicate more time to organising the activities (higher use of the *regulative register*); however, this behaviour is predominantly dominated by one

member. **These connected results bring back the possibility introduced earlier, of L1 groups being less efficient in group work tasks (15).** Some authors have written about the presence of a more varied type of methodology in the CLIL class. Moreover, some have written that the more traditional ways of teaching, namely the dominance of whole class in opposition to the presence of group and pair work activities, are less present in CLIL classrooms (Coyle et al. 2010). Baetens Beardsmore (2009) suggests that CLIL methodology and its integrated approach has brought considerable changes in general teaching practice, particularly in diminishing the role of frontal teaching and stimulating interactive group work (2009: 210–211). As mentioned previously, in the present study, the L1 class has a project-based science curriculum where group work is the main methodology used. However, it might be the case that even so, they are less accustomed to this methodology than the CLIL class.

8.3.4 Comparing co-construction of knowledge across activities (STA and PSA)

As regards **RQ3. (Are there differences in the three layers (1.1, 1.2, 1.3) above when students in CLIL and L1 groups participate in a science topic discussion and a problem solving discussion? If so, which are they?),** the comparative findings obtained across activities (STA and PSA) will be discussed in this section.

Findings in chapter 6 presented several differences across activities. One of the most revealing differences was found in initiations. In the discussion activity (STA), students mostly initiate by *demanding facts* while in the problem-solving activity (PSA) they mostly do it by *giving facts*. The interest in metalinguistic inquiries (especially in CLIL) have proven to be very much related to the use of *demanding facts* in both classes in the STA. Moreover, it has been argued that **the formulation of the written questions in the prompt in an interrogative form in the STA led the students to repeat parts of the questions or reformulate them with their words in the same interrogative way (16).** In turn, in the case of the PSA activity,

since each item was presented with a visual stimulus and there were options as possible answers, the tendency when *initiating* was for the students to *give facts*.

Findings have also shown how in the PSA there was a more frequent use of the *instructional register*. In turn, findings have revealed a higher use of *social talk* and the *regulative register* in the STA compared to the PSA. These results illustrate differences across activities which are worth considering. The problem-solving activity (PSA), seemed to keep students more focused on task than the STA as shown in their higher participation in the instructional register. Perhaps the novelty of the content discussed in the PSA led students to pay more attention to this activity. This fact could have interesting implications when considering task classroom design. **Therefore, this study has shown that different activity types trigger and train different learning abilities and registers (17).** The comparison between the STA and the PSA highlights the importance of a varied use of activities in the classroom.

Findings in the interactional layer have presented a very different turn distribution pattern depending on the activity. The majority of groups (L1a5, L1b5, Clilb4 and L1a4) show different interactional behaviours related to the distribution of turns when performing one activity (STA) or the other (PSA). In this way, results across activities have introduced new equality candidates in terms of distribution of turns. However, it has also questioned other groups high equality descriptive results in both activities taken as a whole. In sum, equality and mutuality findings across activities did not vary the final results previously acknowledged in former results involving the two activities. This was originated by the fact that the inequality found in former equality groups was counterbalanced by the new equality candidates. Therefore, at the end, the inequality group ratio persisted even though equality in terms of distribution of turns changed across activities. Thus, individual small groups *did* change the way they interacted *but* the overall results with all the groups put together did not vary.

It is, then, interesting to highlight that **activity type seems to affect not only the language and approach to content used by the students but also the roles in interaction that these students have when they work in groups (18).** This ratifies the argument made by several authors that state how roles and identities

(Goffman, 1981; Wells, 1999) and, in this case, group interaction can influence learning. In this study, it would be expected that the same group would have a similar interaction even across activities, as they are the same individuals and are dealing with a group activity performed in the same classroom setting. However, results have proven otherwise. These results validate the importance of analysing the interactional level in the co-construction of knowledge and seem to prove that interactional styles influence participation, which necessarily affects not only L2 learning (Storch, 2002; Ballinger, 2013) but learning in general.

8.4 Part 2 of the study: Problem solving and co-construction of knowledge after the Thinking Together Intervention Program

In this section, we will discuss the answers to the following research questions:

PART 2

RQ4. How do CLIL and L1 groups solve problems in the Ravens test of progressive matrices?

RQ4.1 Is there any difference between the experimental CLIL and L1 groups (CLILA vs L1A) before and after the intervention? If so, which are they?

RQ4.2 Is there any difference between the experimental and control CLIL and L1 groups (CLILA vs CLILB and L1A vs L1B)? If so, which are they?

RQ4.3 Is there any difference between the CLIL experimental and the L1 experimental group (CLILA and L1A) after the intervention? If so, which are they?

RQ5. How is knowledge co-constructed in the CLIL experimental group (CLILA) before and after the intervention?

RQ5.1 Are there any differences when compared with the L1 experimental group (L1A)? If so, which are they?

RQ5.2 Are there any differences across the two activities (PSA after the intervention and STA)? If so, which are they?

A summary of the findings related to these research questions findings is presented at the end of the chapter (see figure 8.2). The discussion in this section focuses on the results obtained after the application of the *Thinking Together* intervention program focusing on the following topics:

- .Pre and post group reasoning results in the L1 and CLIL experimental groups.(R.Q 4.1)
- Comparing group reasoning across groups (experimental versus control groups; R.Q 4.1 and CLIL experimental vs L1 experimental; RQ 4.2).
- Co-construction of knowledge after the TT intervention program in a CLIL group. (RQ 5)
- Comparing co-construction of knowledge across two groups (CLILa3 and L1a4; R.Q 5.1) and across activities (PSA and STA; R.Q 5.2).

These four sections discuss results on research questions 4 and 5 for the second part of the study.

8.4.1 Group reasoning during problem solving in CLIL and L1 before and after the TT intervention program

In relation to **RQ4.(How do CLIL and L1 groups solve problems in the Ravens test of progressive matrices?)** the analysis of group reasoning was measured by the RPMT. It aimed to evaluate the improvements the TT intervention program had had on group abstract reasoning and was, therefore, performed before and after the TT intervention program. It also aimed to mirror other similar experimental studies (Mercer et al., 1999; Rojas-Drummond et al., 2003) in an L1 context. The novelty of the present study was applying this program to a CLIL setting and accounting for results in this context compared to a parallel L1 setting. Findings in chapter 7 have presented an improvement in more than half (55%) of the CLILA experimental groups in their group reasoning results (RPMT) from T1 (before the intervention) to T2 (after the intervention) and a parallel, although slightly lower, improvement in half (50%) of the L1a experimental groups from T1 to T2 (**RQ4.1 & 4.3**). The similarity between results from CLILB (the control group) in T2 and those of CLILB (experimental group) in T1 have confirmed the impact of the intervention program in the increase in CLILA's punctuation. In contrast, in L1a experimental group, interfering variables or the high results of the L1b control group in T1 question the

improvement of L1a experimental group from T1 to T2 when compared with the control group L1b. With the possibility that an independent variable in the L1b has influenced results or that the L1a has a higher reasoning level than the L1b class, the results of this part of the study have to be taken with caution (RQ 4.2).

Findings confirm the improvement in joint reasoning after the TT intervention program which was also found in Mercer's (1999) and Rojas-Drummond's (2003) experimental studies. However, it must be considered that the range of improvement in scores in CLIL (an average of 2.6: from 46.6 to 49.2) and in the L1 (an average of 1: from 47.75 to 48.75) in this study is inferior to the one obtained by Mercer et al. (1999) and Rojas Drummond et al. (2003). In Mercer et al. the authors present a change in punctuations from 41.43 to 45.58, an average difference of 4.05 (1999: 107) in the experimental group, and from 42.72 to 44.08, a mean difference of 1.36 in the control group. In Rojas-Drummod et al (2003), who used a shorter version of the RTPM, a change of the mean punctuation from 20.5 to 24.2, an average difference of 3.7, was observed in the experimental group. However, in the control group, a difference from 20 to 20.8, thus a mean increase of 0.8, was shown. The reason for the smaller increase observed in the present study might be the tight implementation followed, due to L2 constraints that implied the simplification and reduction of the length of the program. In fact, the adapted version of the TT program used for this study reduced the original 16 lessons of the program to 10 lessons. Moreover, whilst the program performed by Mercer et al. (1999) took place during 10 weeks, approximately 2 and a half months, in this study the program had to be developed during 4-5 months (16-20 weeks). This length was similar to the one in Rojas-Drummod et al.'s (2003) study, where the program lasted 5 months and was carried out in 10 sessions, too. In any case, in the present study, the fact that **results in CLIL have shown a higher increase of the punctuation in more groups than in the L1 shows that working in groups in an L2, far from being a problem for developing reasoning in groups, could be an advantage. It therefore opens the door for the work on the improvement of joint reasoning and classroom talk in the L2 and especially within the CLIL context (19).**

8.4.2 Co-construction of Knowledge in CLIL before and after the TT intervention program

In response to **RQ5. (How is knowledge co-constructed in the CLIL experimental group (CLILA) before and after the intervention?)** the selected group used to analyse how knowledge is co-constructed in the pre-test and post-test comparison after the TT intervention program was, as Mercer et al. (1999) did in their study, one of the groups that showed a greater increase in punctuation. The group that showed the biggest difference was Clila7 (from a punctuation of 47 in T1 they obtained a punctuation of 51 in T2); however, a problem with the audio in T2 made it impossible to analyse the group in detail and, thus, Clila3 (with an increase of 3 points, from 43 in T1 to 46 in T2) was chosen randomly among others that had obtained the same increase (Clila4 and Clila6). Findings in Clila3 (see chapter 7) showed how the intervention increased students' use of *evaluations* (especially in *initiating* moves) and *explanations* (in *prolonging* moves). This last increase contributed to the production of longer turns. The use of chunks like *I think* in evaluations and the use of *because* in *explanations* were observed in these findings. These results are similar to the ones reported by Mercer et al. (1999). In their study, Mercer et al. identify the use of chunks like *I think* and *because* and longer turns (1999: 105) as key linguistic features of *Exploratory talk*. They declare the increase in the use of these linguistic features promoted by the TT intervention also result in better punctuations in the RPMT and, of course, in a more frequent use of *Exploratory talk*. **Considering the chunks *I think* and *because* and the increase in *prolonging moves* as features that are promoted by the TT intervention program, this study also ratifies the efficiency of the TT program in promoting these key linguistic features in CLIL, identified by Mercer *et al.* (1999) as characteristic of *Exploratory talk* (20)..** Moreover, and from this study's perspective, the TT program could be, if further developed and improved, a very enriching arena for CLIL settings. This is especially so taking into account CLIL concern on language use, which nicely aligns with the objective of bringing *Exploratory Talk* into the CLIL classroom. As Moate (2010) states: "The interactive, structured culture surrounding ET (*Exploratory Talk*) clearly represents a different

type of classroom environment compatible with the active participation encouraged in CLIL” (2010: 42).

Findings in the interactional layer in the Clila3 group after the TT intervention program have presented contradictory results in equality and mutuality factors. It must be put forward that the authors that developed the TT program (Dawes et al. 2004) proposed linguistic resources within the ground rules to promote a collaborative group dynamic. The linguistic features in this study seemed to be achieved even in the tight implementation of this study’s version of the TT program. **However, the interactional aspects built on an exploratory way of talking, which represent a collaborative pattern of interaction, still seem to be in process (21).** It is worth putting forward that studies like the ones mentioned before (Mercer *et al.* 1999 and Rojas-Drummond *et al.* 2003), which were the first to apply this program, and more recent studies such as Hannessy et al. (2016), which proposes a more complex analytical model to analyse classroom discourse, all leave the interactional layer of group work out of the *Exploratory talk* equation. **This study has presented results that justify the need and significance of this interactional pattern in group work activities. The influence of interactional patterns at the discourse and knowledge level has been demonstrated by this study (22).**

8.4.3 Comparing co-construction of knowledge across two groups (CLILa3 and L1a4)

As regards RQ5.1 (Are there any differences when compared with the L1 experimental group (L1A)? If so, which are they?), in the findings related to the comparison across groups, the Clila3 was compared to a parallel group in the L1, L1a4. Findings showed that apart from an increase in the use of *rejoinder-fact* and minor changes in mutuality aspects (like engagement with the activity content and concern in the participation of all group members), the TT intervention program didn’t seem to bring any other parallel improvements to the groups. In fact, more differences between both groups were acknowledged after the intervention. This brought into consideration the fact that although both classes had developed the same intervention program, the two teachers’ different teaching styles and ways of

developing the TT program in class might be the cause of the differences. This could also be the cause of the lack of improvement in the presence of *Exploratory talk* in the L1 groups in T2.

The TT program emphasizes the importance of developing ground rules with students as they are the main anchor of the program and the way to drive students into the use of *Exploratory talk*. In Dawes, Wegerif and Mercer's words: "If followed these ground rules ensure that children begin to use exploratory talk" (2004:3). In fact, in this book it is emphasized that the success of the program depends on teachers' "taking a leading role in guiding the development of children's language use and understanding" (Dawes, Wegerif and Mercer, 2004: 6). One of the strategies to achieve this purpose consists in reminding students to use the "ground rules for talk". In our study, the L1A teacher did not particularly focus on this aspect. **The absence of this teaching strategy by the L1A teacher is therefore the most plausible cause of the lack of improvement observed after the TT intervention program in the L1a group. In opposition, the CLILA group showed an important improvement driven towards *Exploratory talk*. This change was led by a teacher that followed the teaching strategy "ground rules for talk" proposed by the TT program (23).**

8.4.4 Comparing co-construction of knowledge across activities (PSA after the intervention and STA)

In relation to RQ5.2 (Are there any differences across the two activities (PSA after the intervention and STA)? If so, which are they?) findings in chapter 7 showed that the *Thinking Together* intervention program didn't put forward new distinctive features in the focus group Clila3 across activities (PSA and STA) compared to the ones for the whole CLIL group (presented in chapter 6). However, results revealed a bigger difference in categories that had already been acknowledged as differentiating in the whole class results (chapter 6). The categories that increased their difference in PSA T2 as compared to STA were: increases in *rejoinder-track* and *disagreeing* moves, longer turns through an increase of *prolonging* moves in general but *prolonging explanations* and *evaluations* specifically. These differences are connected with *Exploratory talk* as they represent the need to justify what is said

(*prolonging explanations*) and the engagement in what is communicated (*prolonging evaluations*). Explanations and evaluations are characteristic of *Exploratory talk*, defined as critical but constructive engagement of participants with each other's ideas. The increase in the use of *Exploratory talk* within the group ratifies the efficiency of the program in making students use longer turns and elaborating on their positions with *prolonging* moves mainly after *disagree*. **The stated results go in line with the point made before, which stated that discursive and knowledge elements of *Exploratory talk* are further developed after the TT intervention program (24). The increase of *rejoinder-track* can be related to the concern on understanding, which has been particularly observed in the L2 CLIL context. As the drive towards *Exploratory talk* advances, this concern was likely to grow in response to the joint interest of the group in having equality in talk (25).**

Regarding the interactional layer, and as stated in chapter 7 section, results in the focus group Clila3 were biased by a discussion between two group members in the STA. The discussion held by two members of the group (Alicia, student 1, and Saúl, student 3) strongly influenced the equality results referred to distribution of turns in the STA. Due to this fact, both in the STA PSA T1 comparison as in the STA PSA T2 results appeared to be contradictory. No relevant conclusions can therefore be made referred to this point.

8.5 Research applications of this study

In the present thesis, there are two main research applications:

- The main focus of research applications presented in this study is the multi-layered analytical model. A previous version of this model was presented and applied in a previous study (Pastrana, Llinares and Pascual forthcoming). In this thesis, the discourse and the knowledge layer have been further developed and the interactional layer has been added. Some discussion points have emphasized the importance of the interactional layer for the understanding of content and language integrated learning opportunities in the group work discussions analysed. This model would be very useful for research studies on learning opportunities in group work discussions in CLIL, L1 and L2 settings, in different subjects and educational levels. The model is specifically convenient for CLIL settings as its multi layered conception allows for the analysis from a content and language integrated

perspective. In addition, it takes into account interactional elements that have been proven to be very influential in diverse educational activities at both the language and cognitive level. Moreover, this model could be used in any research investigating types of talk in the classroom as it helps give a very detailed view of the type of talk used especially by small groups working in an oral activity.

- Another research application the present thesis has contributed to is a methodological one. This contribution has been made in three main areas. Firstly, there are very few studies that compare L1 and CLIL (e.g. Llinares and Whittaker, 2010; Pastrana, Llinares and Peña, forthcoming) in SLA research. As stated in the introductory chapter (section 1.3), most of the studies in SLA compare CLIL to EFL. This thesis therefore makes a methodological contribution to this under-investigated setting as it proposes an analytical tool that can analyse and compare all kinds of language settings (L1 or L2) in all three layers (discourse, knowledge and interactional). Secondly, the comparison of similar agent-type activity that require different learning skills. The contrast between the STA and the PSA presented many differences across all layers of the analytical model (discourse, knowledge and interactional layer) and put forward the need to compare not only activities with different participants (e.g. whole class vs. group work in Llinares and Pastrana, 2013) but also, as this thesis has put forward, activities that involve different cognitive skills (e.g. STA vs. PSA). Finally, this thesis has combined an analytical part and pedagogical part. In the analytical part classroom discourse has been analysed within three different layers. The pedagogical part has, in first term, included the design and implantation of educational intervention program. In last term, it has also evaluated such program. Most studies tend to focus either on the analysis of discourse (e.g. Dalton-Puffer, 2016; Moore, 2011) or on the implementation and evaluation of a model (e.g. Mercer et al. 1999; Rojas-Drummod et al. 2003). This thesis has, however, proposed a new way to inform research by combining both an analysis of discourse analysis and a pedagogical implementation model.

8.6 Pedagogical applications of this study

Different pedagogical applications can be drawn from this study. They are as follows:

- This study has put forward how much of the academic content talked about is related to facts, especially in the L1 classroom. Frequently activities are also mainly fact-oriented. Although focusing on facts is obviously expected (and necessary) in

any class, this study proposes orienting activities to foster a more engaging relation with content through evaluation and explanation. This could also prevent the lack of interest in the activity and the tendency towards barely completing a group task by merely supporting without arguing or building on joint-reasoning. All of these aspects underline the importance of not just putting students to debate about a topic through different questions but considering how to promote a varied use of discourse in group oral activities. Moreover, these considerations can help not only make students use quality talk but also promote mutuality aspects that help build a more collaborative interaction. The work on *evaluations* through the lens of students' involvement with content in both *giving* and *demanding* moves and the aim set on reaching a final agreement have proven favourable to build mutuality within the group. Thus, collaborative interactions could be developed by following a program similar to TT, as this thesis has proposed.

- The present study has also put forward the need to focus on interactional elements, not only at the expense of social values but also because these interactions have an effect on discourse and knowledge aspects. The types of interactions realised by students are connected with types of talk. A collaborative pattern of interaction is as essential to exploratory talk. Within collaboration frequent discourse features are for example: using *I think*, *because* and also asking other members for their opinions. The improvement after the TT program has not proven much advance on interactional patterns in group work. However, this lack of improvement could be due to the short lapse of time between the pre- and the post test. Even on accounting this fact, there is a need to further work on collaborative interactional patterns to fully develop true collaborative exploratory talk in the classroom. Any classroom that aims to do peer work in class must take into account the interactional level. This could be done by establishing a classroom culture where equality and mutuality ideals are constantly reminded.
- Certain aspects of *Exploratory talk* seem to align with CLIL settings. However, these aspects improved qualitatively after the TT intervention program, as discussed previously in the discussion points (see 6, 7, 8, 22, 26). These improvements also led to better results when dealing with a joint reasoning problem (especially in CLIL). The adapted TT program could be applied in more CLIL classrooms to help improve the joint reasoning skills and quality of group talk in these class.
- Results have put forward the need to diversify activities within group work (both in L1 and CLIL). The two activities analysed in this study have promoted different types of discourse moves and cognitive discourse functions (see discussion points

18, 19, 20). The use of different types of activities is normally a given in the class. However, this study has put forward the need to pay especial attention, not only to different activity types in terms of agents (whole-class, individual, pair or group work), or communication type (oral or written), but also in terms of the learning skills promoted by those activities (reasoning skills; argumentative skills). This concern is a pedagogical one which educators are normally aware of; however, this thesis has proven its effects also at the discourse level. In sum, the use of activities that foster different learning skills needs to be connected with discourse aims when programming a lesson. By doing this, the use of a wide range of discursive options within the class is guaranteed.

- The importance of the role of the teaching strategy led by the teacher was put forward (see discussion point 25). This study underlines the need for teachers to give and obtain constant feedback, suggestions and support from the researcher or program developer when implementing an intervention program.
- Finally, the multi-layered analytical model proposed by this study, could also help promote the quality of classroom student talk through exploratory talk. It could do so by helping give an in-depth analysis of the results accomplished by intervention programs aimed at favouring this type of talk in the classroom. From there on, programs or parts of these programs could be re-adapted and improve to be of greater service to both teachers and students.

Pedagogical applications were presented in the introductory chapter (see introductory chapter section 1.6) as a main concern in the present thesis. As stated in the introduction, it was this study's objective to use a research set in an educational context such as the present thesis, to propose feasible pedagogical applications. The intervention program was used to determine the applicability and value of the TT program. The second element is this section, that hopes to provide valuable and practical insights to improve classroom teaching and learning.

8.7 Limitations of the study

This study has a series of limitations the researcher is aware of. It is with the idea of tackling them in future research that they are acknowledged. Firstly, as mentioned in previous chapters (chapter 4), this study comprises only part of the collected corpus. In fact, at first, it was in my intention to delve deeper into the pre-post-test results and compare the co-construction of knowledge in the two moments with more than one focus CLIL group. In fact, the original intention was to use both the

STA and the PSA activity in the post-test. However, due to time constraints and the complexity of the study, this part of the corpus was left aside. The researcher is aware, that for comparability criteria, one sole focus small working CLIL group (Clila3), is not representative of the possible change present in the whole experimental CLIL group. Even so, the idea of using the multi-layered analytical model in only one small working group, was motivated by the idea of giving a representative hint of what could be found in the whole CLIL group in general.

The second limitation, very frequent in all studies in general, pertains to limiting the scope of the study. In this direction, I must add the lack of space and time to exploit with more depth the pre-test and post-test comparability in the L1. The researcher is also aware of the limitation of comparing the CLIL focus group with only one other L1 group.

A third limitation, which also refers to the second part of the present study, relates to the fact of not being able to completely reproduce previous studies done by Mercer et al. (1999) and Rojas-Drummod et al. (2003). In both of the original studies, the RTPM was administered both in groups and individually. In the present study, this involved asking the schools for extra research time that they weren't able to give. Therefore, the RTPM was done and evaluated only in groups.

As a fourth limitation, the complexity of the three-layered model must be put forward. The model was designed, then tested by several researchers and then later revised taking into account inter-rater reliability. Confusing categories were dealt with or eliminated. But even though this process was a thorough one, the border lines between some categories are difficult to outline. For example, and as mentioned in chapter 5, while analysing the data, it was a frequent difficulty to decide whether a turn by one student was *disagree* with some type of *prolong* (*explanation, evaluation or fact*) or a *confronting explanatory, evaluative or factual* move. It is common when designing a new analytical model or construct to have some categories with fuzzy borders (see Dalton-Puffer, 2013). However, perhaps the further use of the analytical model can open room for improvement in this direction. Some aspects of the model, once used, would benefit from further improvement, especially at the discourse level (the difference between *disagree prolong* and *confronting moves* created confusion at certain times, also the delicate line between *supportive* moves and *agreeing* followed by *prolong*) and the equality and mutuality factors to

determine interactional patterns. In addition, the limitations in the complexity of using a model that entails three different layers is worth considering.

Limitation number five is related to the *Thinking Together* intervention programme and the adaptation done by the researcher. Both the Spanish translation and CLIL adaptation of the programme were performed by the researcher and would perhaps have benefited from a review or feedback from other researchers who had had the chance of applying it previously. However, due to time limitations once again, this could not be done. In addition, after the intervention performed for this study, some parts of the adaptation and training could be revised and improved. The researcher asked the experimental teachers to evaluate each lesson (see appendix 9). This feedback from the teachers could help improve the adaptation of this program to the Spanish curriculum within the L1 and CLIL contexts and, therefore, improve possible future intervention programs. To end up, another aspect that limited the present study was the reduced number of teachers (only two) and students (more or less 60 in total) that formed the experimental group. Taking into account that within those 60 students, half were from a CLIL group and the other half from an L1 group, the scope of the intervention is limited.

8.8 Directions for further research

The directions for further research emerge from the limitations of the study presented above and from some of the discussion points that have opened up new research motivations. Investigating the integrative aspect of CLIL is, at present, a widespread interest among CLIL researchers. In line with this interest, this study presents an analytical model that could be used, not only with the remaining corpus collected by the researcher, but also with any other primary CLIL data. This could perhaps help validate the conclusions reached in this thesis. Future research with the multi-layered analytical model could also be made at the secondary or even tertiary CLIL levels. In fact, it could be used in any classroom setting where learning through a communicative interaction among peers is valued.

Another line for further research that can be drawn from this thesis limitations is performing an exact replica of the studies done by Mercer et al. (1999) and Rojas-

Drummod et al. (2003) in the CLIL context, including the individual testing of the RTPM. A larger experimental group including more teachers would further enrich the study. In addition, an improved version of the adaptation of the *Thinking Together* program could even be used.

Other interesting lines of research that emerge from the discussion points are the analysis of the use of hedging in students' oral production in English and in comparison to other languages and the use of evaluative language by CLIL students. In addition, and within a more general classroom context that needn't be reduced to CLIL, the influence of interactional patterns on content and language integrated learning. This last line of research is a field the researcher hopes to contribute to in the future.

Last but not least, if more intervention programs like the *Thinking Together* model are designed to help improve different aspects of classroom group interaction in the L2 and especially in CLIL contexts, research could be driven to evaluate its results in a similar line to this thesis. In sum, any type of research that doesn't lose sight of this study's ultimate objective: researching in order to help teachers improve students' learning in the classroom would be of an enormous value.

8.9 Summary and overview of the study

This thesis set out to contribute to the present interest in content and language integration (especially in CLIL) by investigating in detail the integrative aspect of learning that unites language and content. There are two main overall objectives, the first, to develop a deep understanding of learning opportunities in group work interaction in primary classrooms focusing on the integration of language and content. For that purpose, a multi-layered analytical model to operationalise and research the integrative aspect in CLIL was designed and applied. This model was built putting together elements based both on SFL and SCT. The second objective was to evaluate the effectiveness of an intervention programme aimed at improving small group talk and reasoning in the class at three levels: discourse, knowledge and interaction. The thesis was positioned within an applicable context, stating clearly the interest of bringing results in form of improvement back to the classrooms. The

motivation stemmed from the fact that integration in CLIL is an emerging area and that group interaction at the primary level is an under-researched area.

The literature on Systemic Functional Linguistics used to elaborate part of the multi-layered analytical model proposed was reviewed and contextualised in chapter two. This chapter also presented the cognitive element of the model, the Cognitive Discourse Functions construct. In this way, the linguistic element of the model was put forward. Chapter three offered a review of the literature that focused on the Sociocultural theory, the other element used to elaborate the multi-layered model. This chapter also explained the *Thinking Together* intervention programme that was adapted to the conditions of the present research. Chapter four presented the methodology while describing the participants, the data collection procedures used, the type of data collected, and gave a general overview of the process for the data analysis. Chapter five presented the analytical model proposed to make the integrative aim in CLIL researchable. The three layers of the model were described in detail to be later applied in chapter six, where the first objective of the thesis was pursued. In chapter six, the layers were followed to present both descriptive results of the CLIL and L1 students during the two types of group work activities and comparative findings across groups and activities. Chapter six aimed to answer the research questions related to the co-construction of knowledge in CLIL and L1 classrooms in different type of activities (RQ 1-3). The second objective, related to evaluating the effect of the *Thinking Together* (TT) intervention programme, was fulfilled in chapter seven. In this chapter, the results on the problem-solving activity, as a way of measuring joint reasoning before and after the TT intervention programme, were presented. In addition, the co-construction of knowledge of one focus CLIL experimental group was also evaluated by comparing pre-test and post-test results and comparisons across groups and activities. This chapter provided results in order to answer the research questions that dealt with the TT intervention program (RQ 4 and 5)

Parting from the analysis carried out in this study, it can be stated that CLIL students favour the use of facts. This can be expected in any content-related activity. However, and more surprisingly, they also get involved in their statements by frequently using evaluations. In addition, their focus when performing the task is on

reaching a final agreement, therefore support is a dominant discursive move and when opposing each other they tend to justify it. *Exploratory talk* seems present in their search for *agreement* and in their use of *explanations*. However, within group interaction they tend to show an unequally distributed expert/novice pattern. Some elements of mutuality were also found, for example, in their concern in including all members by asking them for their opinions when they hadn't given them. However, these elements were occasional and didn't imply a collaborative pattern of interaction. In sum, in the first descriptive view the CLIL group showed some elements of *Exploratory talk* where there is a critical but constructive engagement of participants with each other's ideas. The L1 group showed a similar centrality on facts. In the L1 group, *evaluations* were also frequent in the form of *demands* mostly. Students used these *demands* as a resource for engaging or including others in the activity at hand. The interactional pattern mostly found in the L1 group was the dominant/passive with both low equality and low mutuality. In this first descriptive view, the L1 group seemed on the track of a *Cumulative* type of talk where talk is a sum of opinions and ideas that are exposed without arguing.

The comparison across groups (CLIL and L1) described the L1 group as significantly more concerned, through the use of monitor, with the state of the communicative channel or listening factors than the CLIL group. In turn, CLIL students were proven more focused on the correct understanding of the message (using rejoinder-track) than their L1 peers. The fact that CLIL students use an L2 to communicate was seen as a probable cause of their high use *rejoinder-track*. The influence of the L2 was also seen as influencing the high use of the chunk 'I think'. The hedging present in the English language could be the cause of this. Finally, the comparison across activities (STA and PSA) concluded stating how activity type influenced all of the analysed layers. Probably the activity requirement and learning styles used by students to perform it affected the discourse by influencing the way learners initiated (*demanding* in STA and *giving* in PSA) and gave *supporting* (more in STA) or *confronting* responses (with *explanations* in STA and bare *disagreements* in PSA). The knowledge layer was also affected by maintaining learners more or less focused on task (PSA more focused through higher presence of the *instructional* register and STA less through higher use of *regulative* register and *social talk*). Moreover, it also appeared to influence the interaction students had within group work producing

different turn distribution depending on the activity type. In spite of this, the acknowledged differences in distribution of turns across activities (STA versus PSA) did not influence enough to vary interaction styles such as collaborative, dominant/passive, or expert/novice.

The results of the TT intervention program are in line with those obtained in previous studies such as Mercer et al. (1999) and Rojas Drummod et al. (2003), which showed an improvement of the punctuation obtained in the RTPM and a more frequent use of key linguistic features associated with *Exploratory talk*. However, in this thesis, findings in the CLIL group showed a bigger improvement in the RTPM punctuation than in the L1 group. This, as pointed out in the discussion, opens a new field in the application of the TT not only in the L1, but also in the L2, and more specifically, in the CLIL context. In the co-construction of knowledge, findings also showed the efficiency of the TT programme in promoting key linguistic features used in *Exploratory talk*. However, even after the intervention, results confirmed that the interaction style related to an exploratory way of talking, the collaborative pattern, was still not present. In the comparison across groups (CLIL and L1) after the intervention, the L1 group showed fewer elements of *Exploratory talk* than the CLIL group. A possible explanation of this was seen in the fact of the L1 teacher not following one of the most important teaching strategies (e.g emphasizing the importance of the ground rules for talk) present in the TT program. In opposition, the CLIL teacher used this strategy frequently. The comparison across activities (STA and PSA) after the intervention confirmed an even greater increase of discursive and knowledge elements characteristic of *Exploratory talk* in the PSA in T2 compared to the PSA in T1. In addition, the concern on understanding connected with the L2-CLIL context also increased in PSA in T2 (after the intervention), and this was explained as probably motivated by a higher concern of the group members in having quality in their talk. This was shown in the fact of CLILa3 members using more demanding evaluations concerned with the opinions of other members.

8.10 Concluding remarks

The findings of this thesis contribute to the understanding of the intertwining of content and language integration whilst immersed in a symmetrical interaction. It also puts forward the value of the interactional element within the learning process. This has been proven by putting forward how interaction styles affect multiple aspects of learning. The multi-layered model proposed has also proven its three-layered need and value, although with some limitations. Contributions have also been made in extending the findings shown previously only in the L1 area (Mercer *et al.* 1999; Rojas-Drummod *et al.*, 2003), to the L2 CLIL context. The value of *Exploratory Talk* within CLIL (Moate, 2013) has also been put forward, proposing interventions similar to the one taken by this study. In the research context, this thesis has proven the value of analysing different type of activities as they influence many aspects of the learning process. In the educational context, the value of teaching strategies and the interactional pattern has also been shown as determining factors that affect student learning.

Dalton-Puffer, Nikula and Smit (2010) point out how the ‘fusion’ approach in CLIL, which doesn’t entail strict divisions between language and content but rescues the integrative process as originally postulated by Coyle, Hood and Marsh (2010), needs to reach the arena of CLIL research, by applying multiple disciplinary perspectives (2010: 289). Llinares, Morton and Whittaker (2012) put together a threefold-based theory in order to investigate the fused elements of CLIL (content and language) from an integrative perspective at the theoretical and practice level. This study has presented a twofold fused theoretical model that has been used as a base to design a three-layered analytical model. This model has served as a way of analysing content, language and interaction in an integrative way. This study has also observed the similarities and differences between CLIL and the L1, which could be used, as proposed by Llinares (2015) to identify what features are specific of the L2 or can also happen in the L1. It has also contributed to research in this field, which is still scarce, as most comparative studies have focused on CLIL versus EFL groups. In addition, the present thesis has hoped to open the door for targeting *Exploratory talk* as a desirable and challenging culture of talk for the classroom, which could help

build a 'collaborative space' (Vass et al., 2008). Moreover, it could even be built as a collaborative community in the CLIL classroom (Moate, 2010) where learners would have the freedom to explore ideas, confront former understandings, and negotiate together, through justifications reasons and new meanings (2010:41-42).

Results

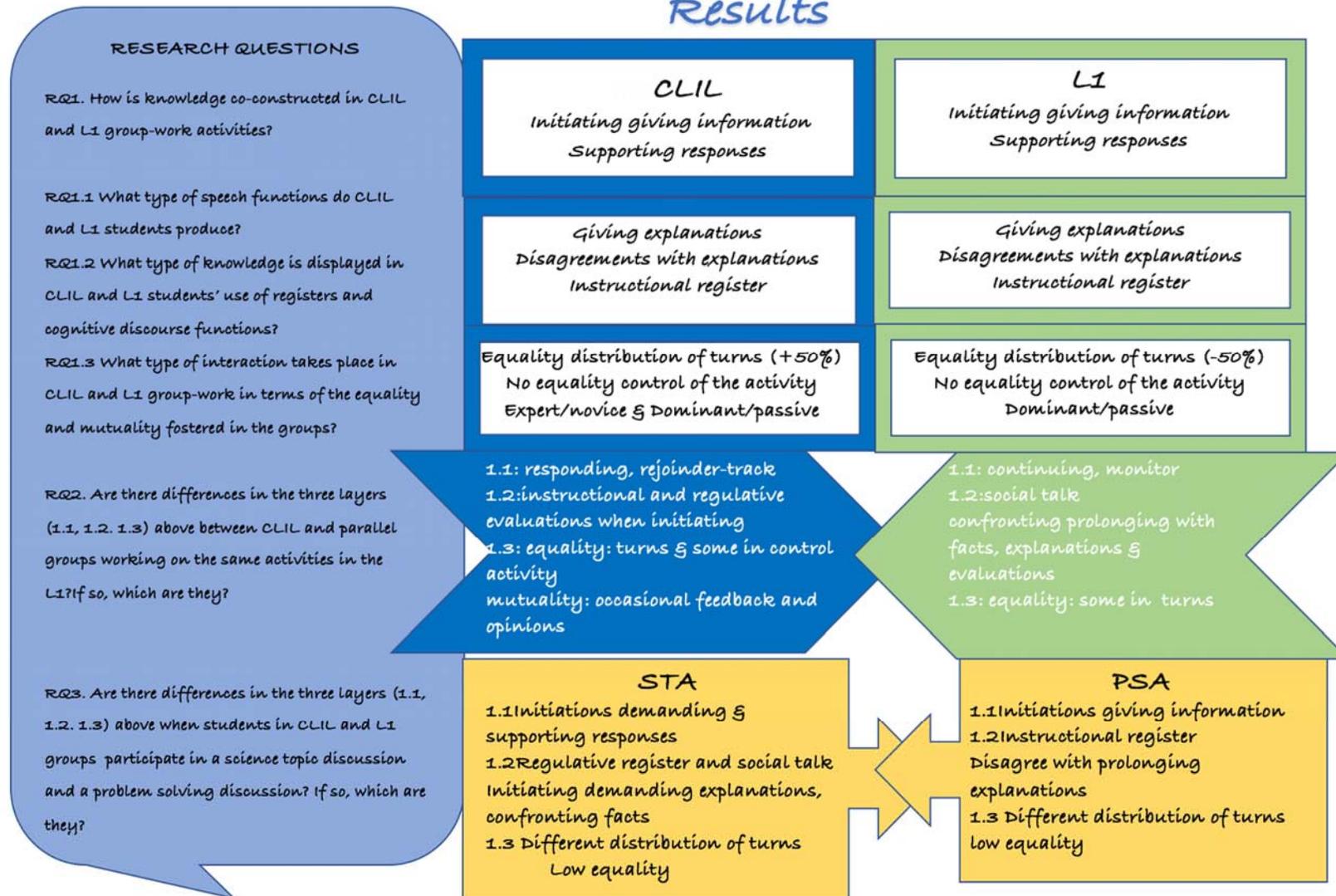


Figure 8.1: Part 1 Research questions and summarized findings (chapter 6)

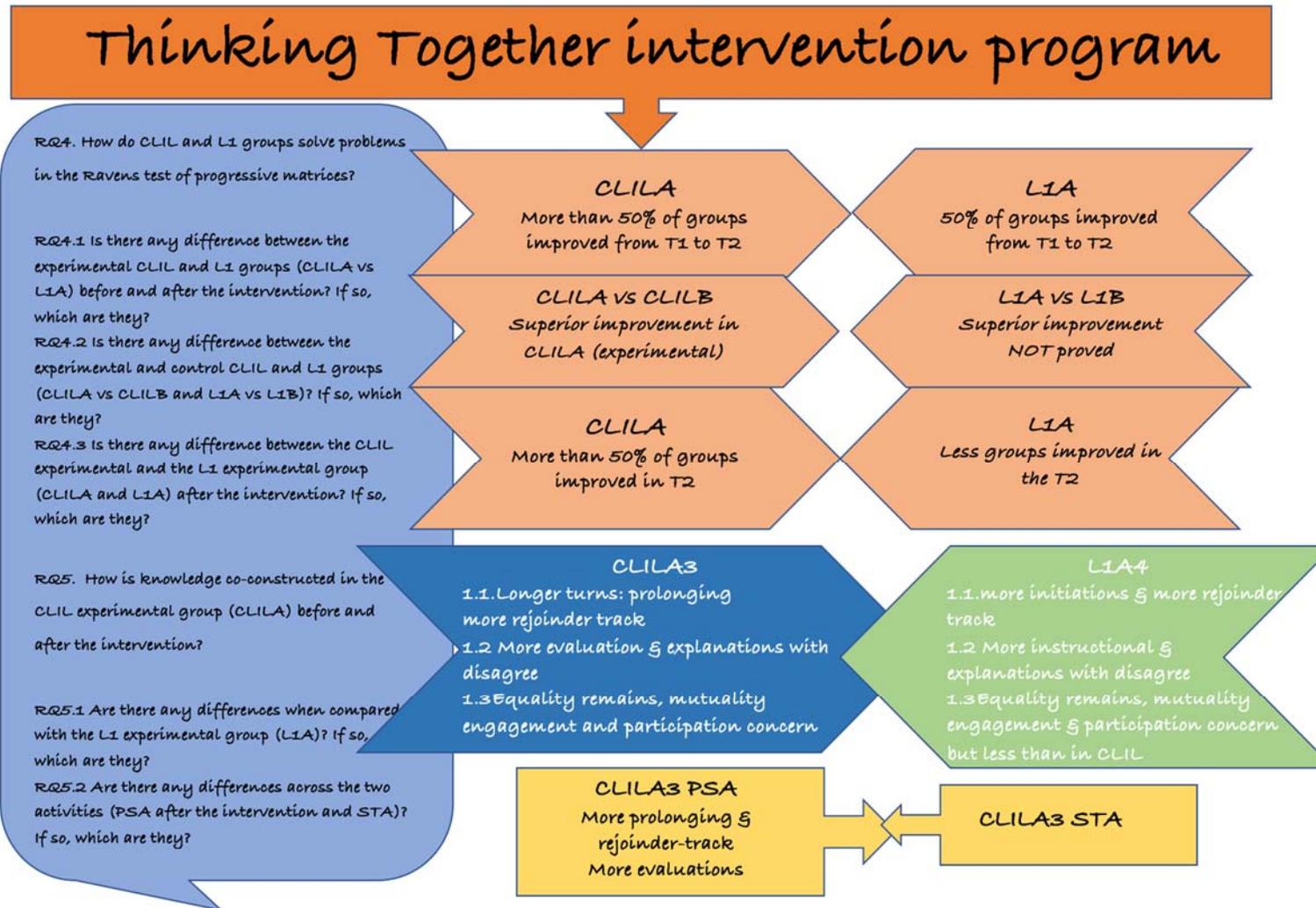


Figure 8.2: Research questions and summarized findings (chapter 7)

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Appendices

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Appendices

Appendix 1: Consent form L1 School

Appendix 2: Consent form CLIL School

Appendix 3: CLIL prompt for STA

Appendix 4: L1 prompt for STA

Appendix 5: Raven's test sample questions

Appendix 6: Raven's test answer sheet

Appendix 7: Teacher training session program

Appendix 8: Teacher training session lesson planning and assessment

Appendix 9: Teacher group planning sheet

Appendix 10: Spanish adapted version of the TT program

Appendix 11: Ground Rules for talk elaborated by the CLILA group

Appendix 12: Ground Rules for talk elaborated by the L1A group

Appendix 13: Transcription conventions

LEY ORGÁNICA DE PROTECCIÓN DE DATOS DE CARÁCTER PERSONAL Cláusula
Informativa - Consentimiento Tratamiento de imágenes

De acuerdo con lo que establece la Ley Orgánica 15/1999, le informamos que sus datos y los de su tutelado serán incorporados en un fichero automatizado bajo la responsabilidad de COLEGIO ESTUDIANTES LAS TABLAS SL con la finalidad de atender los compromisos derivados de la relación que mantenemos con usted y su tutelado. Pueden ejercer sus derechos de acceso, cancelación, rectificación y oposición mediante un escrito en nuestra dirección C/ FROMISTA 1 28050 MADRID.

Mientras no nos comunique lo contrario, entenderemos que sus datos y los de su tutelado no han sido modificados y que se compromete a notificarnos cualquier variación y que tenemos el consentimiento para utilizarlos a fin de poder fidelizar la relación entre ambas partes.

Igualmente y de acuerdo con lo que establece la Ley 1/1982, de 5 de mayo, sobre el derecho al honor, a la intimidad personal y familiar y a la propia imagen, y siempre que no nos notifique lo contrario, solicitamos su consentimiento para poder llevar a cabo grabaciones de imágenes en el aula con la finalidad de la participación de un estudio piloto que busca promover el trabajo en grupo, la cooperación, el razonamiento lógico y la expresión oral de los alumnos en el aula, en colaboración con la Universidad Autónoma de Madrid, entidad a la cual se le hará entrega de dichas grabaciones bajo la tutela de la estudiante cuyo proyecto educativo forma parte de su tesis doctoral. Asimismo, dichas grabaciones serán usadas con fines exclusivamente académicos y su divulgación se limitará al ámbito científico-académico (Universidades y revistas científicas).

Mediante mi firma de constancia de la aceptación de todo lo expuesto anteriormente en este documento y de que soy conocedor/a de mis derechos y obligaciones según la normativa de protección de datos de carácter personal.

Autorizo el tratamiento de la imagen de mi hijo/a y su divulgación por parte de la Universidad Autónoma de Madrid.

No autorizo el tratamiento de la imagen de mi hijo/a y su divulgación por parte de la Universidad Autónoma de Madrid.

MADRID, a de de 20....

Nombre y apellidos del alumno: DNI:

Nombre y apellidos del tutor legal: DNI:

Firma del tutor legal

Appendix 2
Consent form CLIL School**Proyecto de Investigación**

Estimados amigos:

Liceo Europeo ha sido seleccionado para participar en el estudio piloto de un programa educativo que pretende promover el trabajo en equipo, la cooperación, el razonamiento lógico y la expresión oral (en lengua inglesa) dentro del aula. El programa se llama “Thinking Together” y ya ha sido implantado con éxito en varios países como el reino Unido, Japón y México.

Se trata de un programa que se desarrollará en colaboración con la Universidad Autónoma de Madrid, y que ha demostrado favorecer el trabajo en grupo, la comunicación oral y el razonamiento lógico en inglés de los alumnos.

Para realizar el estudio, dos de las clases del principio del programa (que se realizará las dos últimas semanas de Enero) y dos del final (que tendrán lugar a mediados de Mayo) serán grabadas en video. Esta grabación tienen como objetivo evaluar los progresos de los alumnos al realizar el programa. Para poder realizar esta grabación, es necesario que remitan firmada la autorización adjunta a mbarrachina@liceo-europeo.es, o entregarla en la Secretaría del Centro. En caso de que Liceo Europeo no reciba la autorización, todos los alumnos de 4º de Primaria participarán en la actividad, salvo comunicación contraria expresa.

Atentamente,

La Dirección.

Don _____, mayor de edad, con D.N.I. número _____ y/o Doña _____, mayor de edad, con D.N.I. número _____, y domicilio en _____, en su condición de padres (o tutores), y por tanto representantes legales del menor _____ (en adelante, el "**Menor**").

MANIFIESTAN

I.- Que el Menor va a participar durante las dos últimas semanas de Enero y la segunda y tercera semana de Mayo los en la grabación de un estudio piloto sobre cooperación, expresión oral y razonamiento lógico en inglés que se realiza en conjunto con la Universidad Autónoma de Madrid.

II.- Que mediante el presente documento, autorizan al Colegio y a los investigadores que forman parte de este estudio, con carácter gratuito, para la difusión de las imágenes en las que intervenga el Menor bien para su emisión pública a través de la página web del Colegio como para el uso académico y la difusión en ámbitos puramente científicos.

III.- Que la presente autorización se entiende condicionada a que las imágenes y la difusión de las mismas respeten el honor y dignidad personales del Menor y en ningún caso se utilicen con fines publicitarios /ajenos a los expuestos anteriormente.

IV.- Que a estos efectos, han sido informados de que de conformidad con la legislación vigente en materia de protección de datos de carácter personal, el Menor tiene el derecho de acceso, rectificación, cancelación y oposición de sus datos y que para ejercitar estos derechos, pueden dirigirse por correo postal a la dirección: C/Camino Sur, 10-12, o llamar al teléfono 91 650 00 00, o enviar un correo electrónico a la dirección mbarrachina@liceo-europeo.es.

Y en prueba de conformidad, firman el presente documento en lugar y fecha indicados en el encabezamiento.

D. _____

D^a. _____

Appendix 3
CLIL prompt for STANAMES _____
_____STATE _____ CLASS _____

Instructions: Read carefully each question and discuss in group your answer. Write short notes for your answers once you have reached an agreement. This is an oral activity, what is IMPORTANT is the DISCUSSION not so much the written answers.

QUESTIONS ON ADAPTATION

1. Imagine you climb up a high mountain and when you are almost at the top you stop to camp for the night. Name two animals and plants you could find there.
2. Why do you think you would find those of animals and plants? Give reasons for your answers.
3. What type of animals live in a water environment? Give three examples and explain what body parts those animals have to help them live in that habitat.
4. Coniferous and flowering plants are different types of plants. Name three differences between them.
5. Which type of plant would survive better in the Amazon rainforest? Why?

Appendix 4
L1 prompt for STANOMBRES _____
_____FECHA _____ CLASE _____

Instrucciones: Lee cada pregunta con atención y discute con tu grupo la respuesta. Una vez que hayáis hablado todos y llegueis a un consenso escribid frases cortas a modo de notas como respuesta. Esta actividad es una actividad ORAL, lo IMPORTANTE es la discusión, no la respuesta escrita.

PREGUNTAS

7. Imaginaros que estáis subiendo una montaña muy alta y cuando estáis casi en la cima decidís acampar para pasar la noche. Nombra dos animales y dos plantas que podríais encontrar en ese lugar.

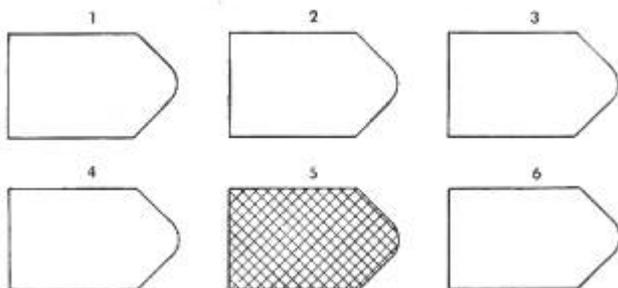
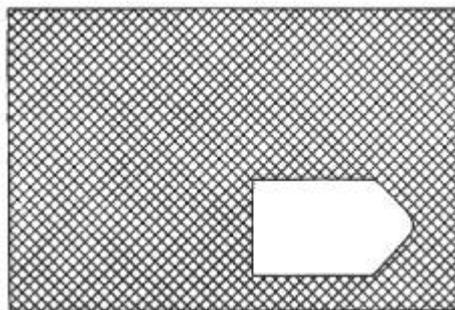
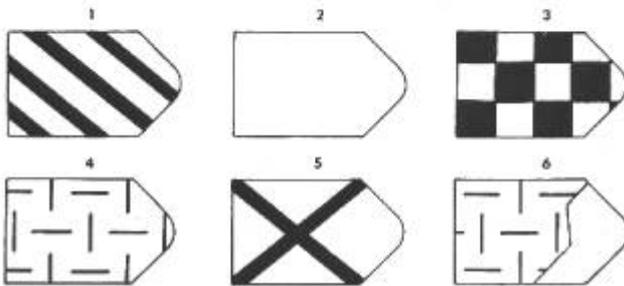
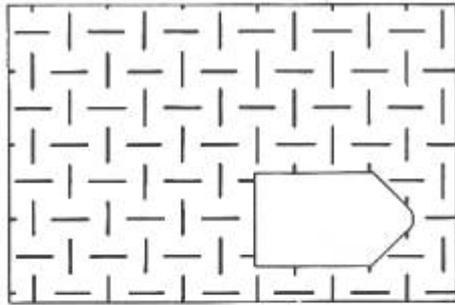
8. ¿Por qué creéis que podríais encontrar esas plantas y esos animals allí? Explicad bien por qué pensáis así .

9. ¿Qué tipo de animales viven en un ambiente acuático? Pensad tres animals y explicad que partes del cuerpo tienen que les ayude a vivir en ese medio.

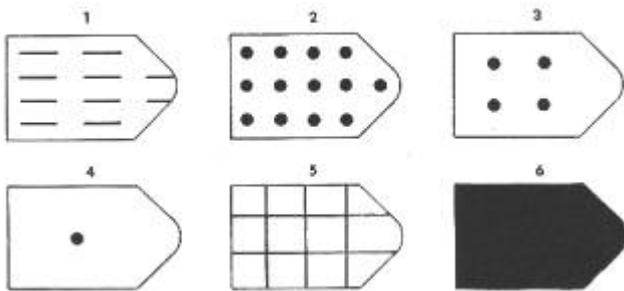
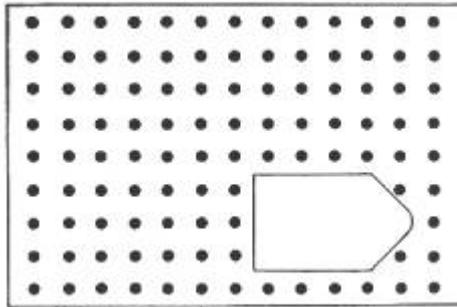
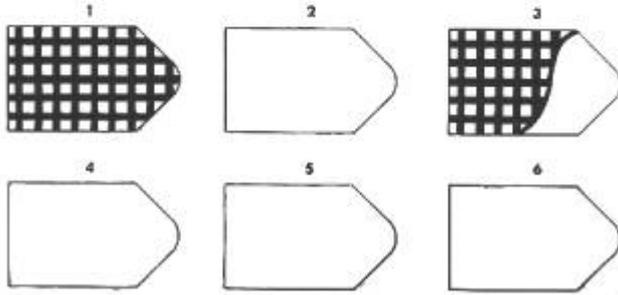
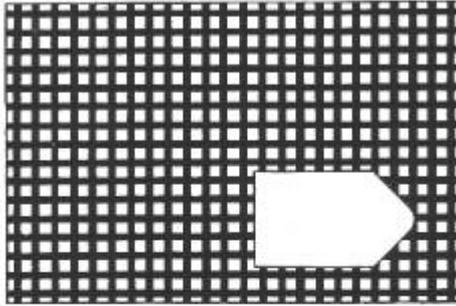
10. ¿Qué diferencias hay entre un árbol de hoja perenne y uno de hoja caduca? Discute y escribe tres diferencias.

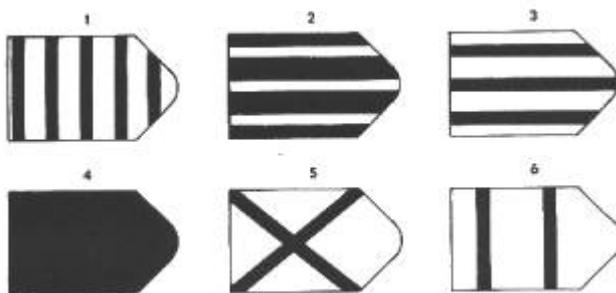
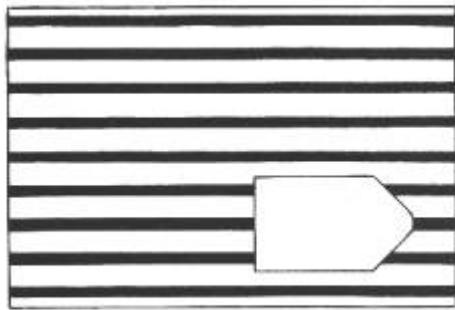
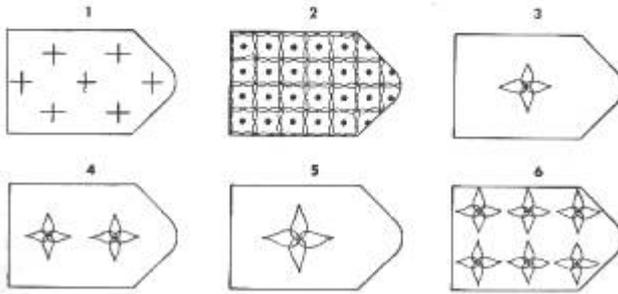
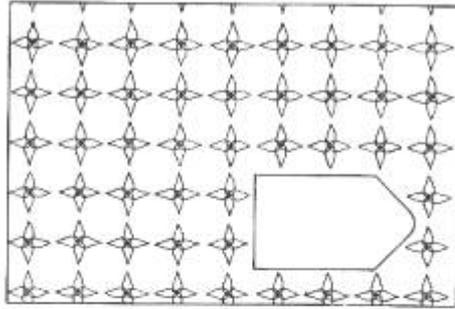
- 11. ¿Qué tipo de planta podríamos encontrar en la selva amazónica? ¿Por qué?**
- 12. ¿Qué tipo de planta podríamos encontrar en Alaska? ¿Por qué?**
- 13. Os muestran varias fotos de un animal pero no sabeis si es carnívoro, hervívoro u omnívoro. ¿En qué partes del cuerpo del animal podríais fijaros para saber qué come? ¿Por qué? Razonad vuestras respuestas.**
- 14. Algunas personas piensan que dormir con una planta es peligroso. ¿Por qué creéis que lo piensan? ¿Creéis que es verdad? ¿Por qué? Razonad vuestras respuestas.**
- 9. Nombrad tres animals invertebrados y tres vertebrados y habla de sus características esenciales.**
- 10. Los animals vertebrados, ¿Tienen alguna característica en común a parte de tener espina dorsal? ¿Cuáles? Pensad algunas y nombrarlas.**
- 11. Los animals invertebrados, ¿Tienen alguna característica en común a parte de no tener espina dorsal? ¡Cuáles? Pensad algunas y nombrarlas.**

Appendix 5
Raven's test sample questions

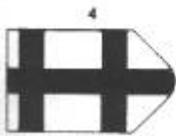
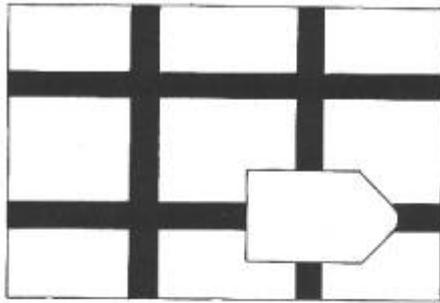


APPENDICES





APPENDICES



Appendix 6
Raven's test answer sheet

SPM

3

MATRICES PROGRESIVAS DE RAVEN
Escala GENERAL (SPM)
Hoja de respuestas para autocorrección

Por favor, an las instrucciones: los recuadros de color AZUL los datos que se piden. Luego lea con atención en AZUL antes de comenzar a contestar los ejercicios del Cuadernillo.

Apellidos y Nombre:
Fecha:

Edad:
Fecha de nacimiento:
Lugar de examen:

Marque con una línea simple el círculo que tenga la misma numeración (1, 2, ...) que la alternativa de respuesta que considere correcta. Si se equivoca y quiere cambiar su respuesta, anule el trazo con un aspa (X) y marque la nueva alternativa. Si se salta algún ejercicio del Cuadernillo porque no encuentra la solución, compruebe que también deja un espacio en blanco en esta hoja de respuestas. Haga los trazos con firmeza.

NO HAGA MARCAS NI ANOTACIONES EN EL CUADERNILLO
NO COMIENZE HASTA QUE SE LO INDIQUEN

Hora de comienzo

	A	B	C	D	E			
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A6	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B6	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C6	D6	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E6	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A7	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B7	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C7	D7	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E7	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A8	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B8	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C8	D8	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E8	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A9	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B9	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C9	D9	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E9	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A10	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B10	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C10	D10	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E10	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A11	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B11	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C11	D11	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E11	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8
A12	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6	B12	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	C12	D12	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8	E12	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8

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SESION DE FORMACIÓN DEL PROFESORADO EN EL PROGRAMA THINKING TOGETHER

Fecha: 22 de Febrero 2015

Duración: 4h

Formadora: Amanda Pastrana

Profesoras: Marta Moya e Irene Curto.

HORARIO PROGRAMA

- 10.00- 10:30** Bienvenida, desayuno y presentación del horario del programa.
- 10:30-11:30** Introducción al programa Thinking together con el dossier
- 11.30-12:00** Preguntas y resolución de dudas
- 12:00-12:20** Descanso y aperitivo
- 12.20-13:00** Trabajo con las primeras 5 lecciones (sección A) , resolución de dudas, lluvia de ideas para el desarrollo de las mismas y temporalización en el cuadrante.
- 13:00-14:00** Elección y trabajo con las 7-8 segundas lecciones (seccion B), adaptación al currículo de CM y CS (S & SS) y temporalización en el cuadrante.

Appendix 8

Teacher training session lesson planning and assessment

CUADRANTE DE TEMPORALIZACIÓN**Sección A**

LECCIÓN	TEMPORALIZACIÓN (Fecha de realización)	OBSERVACIONES (Comentarios acerca del desarrollo y aspectos a mejorar)
LECCION 1: Hablar de cómo hablar (Talk about Talk)	<input type="checkbox"/>	
LECCIÓN 2: Hablar en Grupos (Talking in groups)	<input type="checkbox"/>	
LECCIÓN 3: Decidimos sobre nuestras reglas básicas (Deciding on Ground Rules)	<input type="checkbox"/>	
LECCIÓN 4: Usamos las reglas básicas (Using the ground rules)	<input type="checkbox"/>	
LECCIÓN 5: Razonamos con nuestras reglas básicas (Reasoning with the ground rules)	<input type="checkbox"/>	

Sección B

<p>LECCIÓN</p>	<p>TEMPORALIZACIÓN (Fecha de realización)</p>	<p>OBSERVACIONES (Comentarios acerca del desarrollo y aspectos a mejorar)</p>
<p>LECCION 6:</p>	<p style="text-align: right;"><input type="checkbox"/></p>	
<p>LECCIÓN 7:</p>	<p style="text-align: right;"><input type="checkbox"/></p>	
<p>LECCIÓN 8:</p>	<p style="text-align: right;"><input type="checkbox"/></p>	
<p>LECCIÓN 9:</p>	<p style="text-align: right;"><input type="checkbox"/></p>	
<p>LECCIÓN 10:</p>	<p style="text-align: right;"><input type="checkbox"/></p>	

OTRAS ANOTACIONES:

HOJA DE GRUPOS

Número de grupo:	Clase:
Miembros:	
Observaciones:	

Número de grupo:	Clase:
Miembros:	
Observaciones:	

Appendix 10

Spanish adapted version of the TT program

PROGRAMA DE INTERVENCIÓN EDUCATIVA:

THINKING TOGETHER (PENSANDO JUNTOS)

*Programa Educativo para la mejora de la expresión oral,
la escucha y el razonamiento lógico en la Lengua
extranjera en primaria*



*Proyecto de Investigación doctoral
Amanda Pastrana Izquierdo*



PROGRAMA PARA EL PROFESORADO

OBJETIVOS DE THINKING TOGETHER

"Las actividades del programa de *Thinking together* han sido diseñadas para desarrollar la capacidad de expresión oral, de escucha y de razonamiento lógico en niños entre 8 y 11 años y han demostrado mejorar su rendimiento académico" (*"The thinking together activities... are designed to develop the speaking, listening and reasoning skills of children aged 8-11 and have been shown to improve their educational achievement"* p.2)

"Las actividades de este programa:

- Hacen que los niños sean conscientes del uso que hacen y la comprensión que tienen del lenguaje oral (*Raise children's awareness and understanding of their use of spoken language*)
- Les ayuda a comunicarse mejor y a trabajar juntos de manera más eficiente (*Help them communicate and work together more effectively in groups*).
- Mejora sus capacidades de pensamiento crítico (*Improve their critical thinking skills*)" (p.2)

EL CONCEPTO DE "EXPLORATORY TALK"

Un elemento clave de este enfoque llamado *Thinking Together* (pensando juntos) es el concepto de *Exploratory Talk* (conversación exploratoria). Este tipo de conversación tiene lugar cuando las personas se involucran de una manera crítica a la par que constructiva con las ideas que se comparten (*A key element of this thinking together approach is the concept of Exploratory Talk. Exploratory talk happens when people engage critically but constructively with each other's ideas*).

Esto significa que:

- Todos comparten la información relevante (*everyone shares relevant knowledge*)
- Se busca activamente que cada participante contribuya a la discusión (*contributions are actively sought from every participant*)
- Las discrepancias y propuestas alternativas son aceptadas pero deben estar razonadas (*challenges and alternative proposals are accepted, but must be justified by reasons*)

Se busca alcanzar un acuerdo siempre que sea posible (*agreement is sought and achieved wherever possible*)" (p.3)

"A través de *Exploratory Talk* los niños aprenden a involucrarse con sus propias ideas y a aprender de las ideas de los demás. También adquieren habilidades para hallar y pensar lo que les hace capaces de trabajar con mayor eficiencia en grupos y les lleva a tener un rol más activa en la sociedad (*Through engaging in Exploratory Talk, children learn to engage in their own ideas and learn from those of others. They also learn skills in talking and thinking which enable them to work more effectively in teams and to take an active role in society*)" (p.3)

SITUACIÓN EN LAS AULAS

Sin embargo, diversas investigaciones han demostrado que en la mayoría de las aulas de primaria, en cualquier parte del mundo, la conversación exploratoria (*exploratory talk*) no se da casi nunca. La calidad de gran parte del trabajo en grupo es poco satisfactoria y bastante inproductiva, los niños la mayoría de las veces no entienden cómo se supone que deben trabajar en grupo... El programa Thinking Together fue diseñado para paliar con esta situación. (*However, research has shown that in most primary classrooms - anywhere in the world- hardly any Exploratory Talk normally takes place. The quality of much group work is unsatisfactory and fairly unproductive, with children not really grasping how they are expected to work together... The thinking together materials were created to improve this situation*"). (p.3)

UNIDADES DE THINKING TOGETHER

"El éxito del programa de thinking together esta en manos de los profesores, los aspecto fundamentals que hemos de tener en cuenta en las clases son los siguientes (*The success of Thinking Together programme is in the hands of the teacher. The main points to bear in mind when using the lessons are as follows*):

1. Establecer las reglas básicas de la conversación (Establishing ground rules of talk)

... Durante las primeras tres lecciones, se guiará a los niños para que creen una reglas básicas y sencillas par alas conversaciones. Si las reglas son respetadas, se garantiza que la conversación que lleven a cabo los niños sea exploratoria (*During the first three lessons, the children are guided towards formulating some straightforward ground rules for talking together. If followed, these rules ensure that the children begin to use Exploratory Talk...*)

2. Dejar el objetivo de cada lección claro (Making the aims for each lesson clear)

...

3. Combinar clase-magistral con actividades en grupo (Combining whole-class and group activities)

... Cada lección posee tres partes básicas: Clase-magistral introductoria, trabajo en grupos y actividad plenaria de todo el grupo (Each lesson has three main sections: WHOLE CLASS INTRODUCTION..., GROUP WORK... and WHOLE-CLASS PLENARY).

4. Aprovechar el trabajo en grupo al máximo (Making the most of group work)

Los niños puede que nunca hayan pensado en la forma en que hablan los unos con los otros y cómo algunas formas de comunicarse hacen que el trabajo en grupo sea más productivas y divertidas. Necesitan ayuda para aprender a usar el lenguaje de una manera más eficaz. Como educadores, puede que no hayamos dejado claro lo que queremos cuando les pedimos que 'discutan' o 'hablen para decidir' (*Children may never have thought about the ways they talk together and how some ways of communicating can make group activities more productive and enjoyable. They may need help to learn how to use spoken language effectively. As educators, we may not have made clear what we want and expect when we ask groups to 'discuss' or 'talk together to decide'*). Las actividad es en grupo seran probablemente productivas y enriquecedoras si (*Group activity is likely to be productive and fulfilling if*):

- Todos los miembros del grupo participant activamente (*all members of the group take an active part*)
- Las ideas de todos son aceptadas abiertamente para ser consideradas (*everyone's ideas and suggestions are accepted openly for consideration*)
- Todos aceptan que sus ideas pueden ser cuestionadas (*everyone accepts that their ideas can be questioned*)
- Todos dan *razones* para fundamentar sus objecciones y propuestas (*everyone gives reasons to support their objections and proposals*)
- Los miembros del grupo se adoptan una responsabilidad conjunta de hacia ñas decisions tomadas (*members of the group take joint responsibility for decisions*)

Este tipo de comunicación no solo genera una mejora en la actividad grupal, también puede ayudar a que cada uno de los niños mejore su 'pensamiento

crítico' y su 'razonamiento' (*Not only does this kind of communication generate better group activity, it can also help individual children to improve their 'critical thinking' or reasoning*).

ESTRATEGIAS DEL PROFESOR

Para que el programa de Thinking Together sea un éxito el profesor ha de ser una guía para el desarrollo del lenguaje oral (su uso y comprensión) del niño. (*The success of Thinking Together approach depends on teachers taking a leading role in guiding the development of children's language use and understanding*) Esto significa que:

- Transmitimos con claridad los objetivos de cada actividad (*making the learning intentions for each activity clear*)
- Recordamos a los estudiantes a menudo que deben usar las "reglas básicas" para hablar (*regularly reminding students to use their 'ground rules' for talk*)
- Damos 'Ejemplos' a los niños sobre cómo deben hablar con los miembros de su grupo. Como por ejemplo hacer uso de adverbios de pregunta como ¿COMO? ¿POR QUÉ? Para que reflexionen sobre lo que creen que saben y para ayudarles a expresar sus razonamientos oralmente (*'modelling' for children the kinds of language they should use to talk to one another in group.* " For example... use of questions like How?, Why? To reflect on what they think they know and put their reasoning into words).
- Usamos preguntas relacionadas con las que están haciendo para ayudarles a razonar una respuesta. Por ejemplo una profesora le pregunta a un alumno acerca de lo que piensa respecto a un tema y luego le pide a otros compañeros que vayan completando esa respuesta para ayudar a la clase a alcanzar un entendimiento conjunto del tema (*using a series of related questions to guide children through a line of reasoning. So for example the teacher asks for one child's ideas, and then asks other children to build on this contribution in a way that help`s the entire class to come to a joint understanding of the topic*).
- Ayudamos a los niños a reconocer el valor del lenguaje y del razonamiento... Por ejemplo, los alumnos pueden reflexionar sobre el hecho de si las "reglas básicas" les están ayudando o no a trabajar y hablar en grupo. El repaso de

los objetivos de aprendizaje después de cada lección también pueden ayudar a consolidar el aprendizaje de cada alumno (*helping children recognise and value the language and reasoning skills... for example, children can consider if using the ground rules is improving how they talk and work together. The review of learning intentions at the end of each lesson can also help to consolidate children's learning*) (p.3-6).

PROGRAMA 'THINKING TOGETHER'

SECCIONES

El programa esta dividido en dos partes o secciones:

Sección A: Nos centramos en el habla (*Focus on Talk*)

Estas primeras cinco lecciones tienen como objetivo hacer que los alumnos se den cuenta de cómo se comunican los unos con los otros. SE les da la tarea de establecer una serie de reglas básicas y específicas para comunicarse. Cada lección se centra en una regla básica específica o un sub-componente del proceso de 'aprender juntos' o *Thinking Together* (*These first five lessons aim to encourage children to become more aware of the ways they talk together. Pupils are given the task of establishing specific ground rules for talk. Each lesson focuses on a different ground rule or sub-component of effective TT...*) Las cinco lecciones son:

LECCIÓN 1: HABLAR DE CÓMO HABLAR (TALK ABOUT TALK)

LECCIÓN 2: HABLAR EN GRUPOS (TALKING IN GROUPS)

**LECCIÓN 3: DECIDIMOS SOBRE NUESTRAS REGLAS BÁSICAS
(DECIDING ON GROUND RULES)**

**LECCIÓN 4: USAMOS LAS REGLAS BÁSICAS
(USING THE GROUND RULES)**

**LECCIÓN 5: RAZONAMOS CON NUESTRAS REGLAS BÁSICAS
(REASONING WITH THE GROUND RULES)**

(2 LECCIONES OPCIONALES: 2A Y 5A)

Sección B: Hablamos, pensamos y aprendemos (Talking, thinking and learning)

En la sección B, los alumnos usan las reglas básicas para pensar, resolver problemas y aprender de una forma cooperativa en diferentes áreas del currículo (conocimiento del medio y ciencias sociales para nosotras). Las reglas básicas se usan a lo largo de esta sección, pero cada lección se centra en unas reglas básicas específicas y aspectos concretos de la filosofía de 'aprendiendo juntos' o *Thinking Together* (In section B, children apply the ground rules for thinking to problem-solving and collaborative learning in different curriculum areas... The ground rules are used throughout this section, but each section also highlights specific ground rules and aspects of thinking together) (p.12).

LECCIÓN 6: PERSUASIÓN

LECCIÓN 7: LA ELECCIÓN DE KATE: razonar juntos, tomar decisiones juntos; ciudadanía. **ELIMINASTA POR FALTA DE ACCESO A SOFTWARE EN VERSIÓN INGLESA**

(KATE'S CHOICE: reasoning together, reaching joint decisions; citizenship)

LECCIÓN 8: ¿QUIÉN PAGA? : resolver un dilema moral, tomar decisiones juntos.

(WHO PAYS? : solve a moral dilemma, make joint decisions)

LECCIÓN 9: TOPILLO ACUÁTICO: preguntar y razonar críticamente, animales en peligro de extinción.

(WATER VOLES: critical questioning and reasoning; endangered species)

LECCIÓN 10: MAPA DE CIUSTAD: dar instrucciones claras, saber actuar acorde a ellas, tomar decisiones juntos.

(TOWN PLAN: provide clear instructions, act upon them, make joint decisions)

Estructura de las lecciones de *Thinking Together*

Las lecciones de Thinking Together ('pensando juntos') en ambas secciones están diseñadas para enseñar las 'reglas básicas' (*Ground rules*) que son la base de la conversación exploratoria (*Exploratory talk*). En la sección B, se parte de la base de que la clase ya ha establecido unas 'reglas básicas' para comunicarse los en grupo. Estas reglas deberán estar a la vista en la clase* y se hará referencia a ellas frecuentemente (*The Thinking Together lessons in both sections are designed to teach ground rules for encouraging Exploratory Talk. In section B, it will be assumed that the class has agreed on a set of ground rules for talking together, which will be displayed prominently in the classroom, and referred to frequently*) (p.14).

Cada planificador de cada lección de *Thinking Together* sigue la siguiente estructura: **Recursos** (materiales necesarios para cada actividad), **Objetivos** (en el comienzo de cada clase la profesora explica los objetivos de cada lección a los niños. Esto ayuda a establecer un propósito compartido para cada actividad y mantiene el objetivo de la actividad centrado en el habla), **Clase Magistral Introdutoria** (explicación de los objetivos, discusión del contenido y preparación de las actividades), **Trabajo en grupos** (cada alumno se une a su grupo asignado), **Sesión Plenaria** (la clase se junta para que los grupos compartan su trabajo con los demás, discusión de la clase entera y revisión de los objetivos de la actividad) y **Trabajo Extra** (actividades extra para que los alumnos continúen el trabajo) [*Each Thinking Together lesson plan has the following structure: Resources (materials needed for each*

activity), Aims (as each lesson starts, the teacher explains the lesson aims to the children. It helps to establish a shared purpose for each activity and keeps the purpose firmly on the talk), Whole-Class Introduction(explanation of aims, talking about themes and setting up of activities), Group Work (Ss join designated talk groups), Plenary (brings the class together for groups to share their work, lead a class discussion and review lesson aims) and Extension Work (extra activities for Ss to work on]. (p.14)

LECCIONES DE LA SECCIÓN A

Nos centramos en el
habla
(Focus on Talk)

LECCIÓN 1: HABLAR DE CÓMO HABLAR

Materiales:

Diccionarios

Fotocopias: 1A: Lista de palabras para hablar

1B: Clasificar el habla

1C: Bocadillos

Objetivos:

- Que los alumnos se den cuenta de cómo hablan.
- Introducir algunas palabras que describen diferentes maneras de hablar para que los niños practiquen usándolas.

Clase Magistral Introdutoria:

Introducimos el tema del que se va a hablar (el habla en sí) y explicamos los objetivos que se pretenden conseguir en esta lección. Preguntamos a los alumnos acerca de sus ideas sobre el 'habla' (ver ejemplos de preguntas más abajo). Estas preguntas deberían provocar respuestas relacionadas con la experiencia personal de los alumnos y sus ideas.

PREGUNTAS GENERALES

¿Se te da bien hablar?

¿Alguna vez te han pedido que dejes de hablar? ¿Quién te lo pidió? ¿Cuándo te lo pidieron?

¿Alguna vez alguien te ha hecho hablar cuando no quieres hacerlo?

¿Te gusta hablar por teléfono? ¿Con quién sueles hablar?

¿Conoces a alguien con quien sea fácil hablar? ¿Por qué crees que es fácil?

PREGUNTAS SOBRE APRENDER A HABLAR

¿Alguien vive con algún bebé?

¿Cómo aprenden los bebés a hablar?

¿Quién os enseñó a hablar a vosotros?

¿Vosotros aprendéis a hablar en el cole?

PREGUNTAS SOBRE EL USO DEL HABLA

¿Alguna vez os piden que habléis en grupo en clase? ¿En qué clases?

¿Por qué el hablar es una habilidad tan útil? (dar razones)

¿Qué tareas pueden realizar las personas hablando?

¿Cómo os comunicaríaís con otras personas si no pudieráis hablar?

¿Cuántos idiomas hablaís?

¿De cuántos idiomas habeis oído hablar?

PREGUNTAS SOBRE COMUNICACIÓN

¿Qué pasa cuando la gente habla pero los demás no escuchan?

¿Qué diferencia hay entre hablar y escribir?

Trabajo en grupo:

1. Clasificar el habla:

Entregamos a cada grupo una copia de la hoja 1A y 1B. Pide que los grupos hablen para clasificar cada una de las palabras de la lista en la hoja 1A en un cuadrante de la hoja 1B. Diles que deben:

- usar el diccionario cuando no entiendan alguna palabra.
- solo pueden escribir la palabra en un cuadrante cuando todo el grupo esté de acuerdo.
- deben encontrar dos palabras nuevas para cada cuadrante usando el diccionario.

2. Bocadillos:

Entregamos a cada niño una copia de la fotocopia 1C: Bocadillos. Pedimos al grupo que:

- elijan una palabra de la hoja 1A
- que dibujen una viñeta y un bocadillo que muestre un ejemplo del significado de esa palabra.
- que escriban la palabra en el espacio que hay debajo de la viñeta.
- que pasen la hoja a otro miembro del grupo hasta que cada uno haya hecho la representación de una palabra.

3. Lo enseñamos:

Pide a cada niño que dibuje una cabeza a tamaño real con un bocadillo grande, entonces escribe una de las palabras de habla dentro de él. Esto se puede usar para colgar en la pared. Para la discusión en clase, pide a cada niño que muestre su trabajo ya acabado. Considerar:

- ¿Cuándo es importante estar en silencio?
- ¿Por qué en algunas clases es importante el silencio?
- ¿Hay personas que disfrutan más del silencio que otras?
- ¿Qué tiene que ver el silencio con pensar y concentrarse?
- ¿Crees que la gente puede hablar y pensar al mismo tiempo?

Sesión plenaria:

Pide a los niños que reflexionen sobre el contenido de esta lección y sobre la calidad de su conversación en grupo.

- ¿Cómo trabajasteis como grupo?
- ¿Usasteis el habla para realizar la tarea?

Trabajo extra:

- Los niños pueden preguntar a sus padres y familiares acerca de su experiencia con el habla en clase(¿en clase os motivaban a hablar u os castigaban por ello?).
- Pueden averiguar qué edad tenían cuando comenzaron a hablar y cuál fue su primera palabra o alguna anécdota acerca de algo gracioso que dijeron.
- Los que hablan más de un idioma pueden explicar cómo eligen qué idioma hablar. ¿Qué problemas han vivenciado? ¿Y qué problemas han tenido los cuando van a países donde no hablan la lengua?
- Se puede estudiar el lenguaje de los signos.
- Los niños pueden investigar acerca de otros códigos que se usan para comunicarse (como el código morse). El baile y el teatro pueden ser considerados lenguaje corporal; ¿qué limitaciones tienen comparados con el lenguaje hablado?
- Si alguno escribe mails a algún amigo puede traerlos al cole como muestra; ¿qué diferencias hay entre escribir un mail, una carta o hablar?
- Los comics pueden usarse para hacer bocadillos. En algunos comics, la lengua se usa en forma de onomatopeya para describir un sonido o acción. La clase puede hacer dibujos de personajes de comica para explicar el significado de las palabras en la fotocopia 1A.

Ejercicio 1A: Lista de palabras para hablar

alardear

charlar

cotorrear

conversar

conversación

exigir

dialogar

cuestionar

cotillear

explicar

reír

alto

quejarse

murmurar

farfullar

convencer

gritar

pedir

chillar

regañar

susurrar

contestar

decir

suavemente

tartamudear

discutir

amenazar

chillar

contestar

parlotear

cotorrear

preguntar

graznar

refunfuñar

quejarse

disputar

razonar

solicitar

explicar

bronca

ferozmente

discutir

LECCIÓN 2: HABLAR EN GRUPO

Materiales:

Folios y bolis, un cronómetro.
Fotocopia 2.

Objetivos:

- Que los niños comiencen a trabajar juntos y establecer cohesión grupal.
- Ayudar a que los niños ejerciten el hablar por turnos.

Clase magistral introductoria:

Explicamos los objetivos de la lección a los niños. Hablamos con los niños acerca del criterio que hemos usado para organizar los grupos; explicamos que cada grupo es una combinación de distintos tipos de personas:

- una persona que escucha bien
- una persona que escribe bien
- una persona que tiene muchas ideas
- una persona que trabaja muy bien en grupo
- una persona reflexiva
- una persona segura de sí misma

Explicamos que esto significa que no siempre trabajaremos con nuestros amigos, que los grupos han sido cuidadosamente seleccionados y no son negociables. Repartimos o enseñamos el **Ejercicio 2: Algunas preguntas para empezar**, y explicamos la tarea.

Trabajo en grupo:

1. La entrevista:

Dos miembros de cada grupo tienen que entrevistar al tercero sobre su actividad favorita en su tiempo libre. Los alumnos no deben escribir nada todavía. Enseñamos las preguntas de la fotocopia 2 y explicamos que las preguntas que hay escritas son tan solo sugerencias- que sus ideas pueden ser aún mejores. Después de la primera entrevista, se repite la actividad con los otros miembros del grupo. Si alguno dice no tener ninguna afición se le debería pedir que describa con detalle lo que hicieron la tarde o el fin de semana anterior.

2. Discusión en clase:

Cuando finalicen las entrevistas, los grupos hablan entre ellos y eligen un portavoz. Por turnos, los portavoces de cada grupo describen brevemente todas las aficiones de los miembros de su grupo. Otros alumnos de otros grupos pueden realizar preguntas a esos portavoces.

Después organizamos una discusión en clase siguiendo los siguientes puntos:

- ¿Por qué crees que los profesores a veces os piden que trabajéis en grupo?
- ¿Crees que siempre es más fácil trabajar con los amigos?
- ¿Te gusta trabajar en grupo? ¿Por qué? ¿Por qué no?
- ¿Quién es una Buena persona para trabajar en grupo y por qué?
- ¿Cuáles crees que son buenas normas para trabajar en grupo? ¿Por qué? (brevemente, esto lo desarrollaremos en la lección 3)
- Si tu grupo está intentando decidir algo, por ejemplo si estais usando el ordenador y una persona sugiere algo, qué deberían preguntar los otros miembros del grupo antes de aceptar la sugerencia? (la idea aqui es que los niños se demn cuenta de la importancia de razonar las cosas).

Sesión plenaria:

Pide a los alumnos que reflexionen sobre el contenido de la lección y sobre la calidad de su conversación en grupo:

- ¿Podeis dar un ejemplo todos de cómo los miembros de vuestro grupo se turnaban para hablar?
- ¿Con quién habeis hablado que podais decir que escucha bien? ¿Cómo sabes que lo es?

Trabajo extra:

- Los alumnos pueden entrevistar a alguien en casa, o algún invitado de otra clase, sobre sus aficiones.
- Los alumnos pueden hacer un tablón de anuncios donde desciban brevemente su afición.
- La clase puede comemnzar una recolección de fotos de gente hablando de revistas o periódicos. Las fotos pueden ser usadas para poner en el tablón con 'bocadillos' o comentarios. El professor puede usar el tablón cómo una manera de subrayar las diferentes utilidades y usos del lenguaje.
- Actividad extra: Lección 2A para profundizar en en la conciencia y la comprensión acerca del acto de habla.

Ejercicio 2: Algunas preguntas para empezar

¿Qué te gusta hacer en tu tiempo libre?

¿Dónde sueles hacerlo?

¿Cómo empezaste?

¿Necesitas ropa o alguna equipación o material especial para hacerlo?

¿Es muy caro?

¿Desde hace cuánto que lo practicas?

¿Qué opina tu familia al respecto?

¿Lo practicas con alguien? ¿Con quién?

¿Qué esperas conseguir con ello?

¿Alguna vez te cansas y quieres dejarlo?

¿Crees que hay alguien de clase al que también le gustaría?

¿Qué más cosas te gusta hacer?

LECCIÓN 3: DECIDIMOS SOBRE NUESTRAS REGLAS BÁSICAS

Materiales:

Diccionario

Fotocopias: Informativas: 3A: Reglas básicas para hablar (para la profe)
3B: ¿Son útiles estas reglas?

Ejercicios: 3A: Palabras para hablar
3B: Nuestras reglas básicas para hablar

Objetivos:

-Hacer que los alumnos sean conscientes de la importancia de su conversación en grupo.

-Aclarar el vocabulario relevante.

-Decidir un conjunto de reglas básicas para hablar.

Clase magistral introductoria:

Explicamos a los alumnos los objetivos de la lección 3. Introducimos brevemente el concepto de reglas básicas para el buen comportamiento. Son reglas básicas que todo el mundo sigue aunque nunca sean discutidas o están escritas en ningún sitio. Por ejemplo, se puede preguntar a los alumnos cuáles creen que son las reglas básicas para estar en un tren, en una tienda, en el cine, en la piscina, en el coche...etc.

Explicamos que en las actividades en grupo la gente aprende más cuando se debaten las cosas. Generalmente las reglas acerca de como hablar en grupo se dan por sabidas. En esta actividad, la clase va a decidir cuáles son las reglas básicas para que saquemos el mayor provecho del trabajo en grupo.

Usamos la hoja informativa 3B: ¿Son útiles estas reglas? Pide que alumnos concretos vayan leyendo en voz alta una por una cada regla. Pregunta a los alumnos si les parece que cada una de las reglas les puede ayudar a trabajar y aprender mejor en grupo. Esta hoja no debe ser entregada a los niños.

Trabajo en grupo:

1. Palabras para hablar:

Entregamos a cada grupo la hoja de ejercicio 3A. Pídele a los grupos que hablen de si entienden o no esas palabras.

2. Hacemos una lista de reglas básicas para hablar:

Esta actividad es crucial para que el trabajo en grupo sea eficiente. Nos aseguramos de que los niños sean conscientes de su importancia. Pedimos a los

niños que pinesen individualmente durante un minuto. Les pedimos que piensen sobre lo que saben acerca del trabajo en grupo. ¿Qué reglas podrían ayudarnos a todos a aprovechar al máximo nuestra conversación en grupo? ¿De qué forma podemos averiguar cómo piensan lo que opinan otras personas? ¿qué aporta el escuchar con cuidado?

Entregamos a cada grupo la hoja de ejercicio 3B: ¿Son estas reglas prácticas? Pedimos a cada grupo que elija un escritor y pedimos al grupo que hablen y decidan cuáles son las seis reglas más importantes para ellos. Les recordamos que el objetivo de estas reglas es que el grupo trabaje con efectividad y les motivamos a que den razones que justifiquen sus decisiones.

La clase entera:

Organizamos una discusión de toda la clase donde cada grupo presente las reglas que han elegido y por qué las han elegido. Nosotros escribiremos en la pizarra las aportaciones de cada grupo. Intentaremos que las reglas sean concisas, que no haya más de seis reglas y que ninguna empiece por "NO".

Estas reglas deberían ser un reflejo de las aportadas en la hoja informativa 3A: Reglas Básicas para hablar (solo para los profesores). Deberan ser re-escritas como reglas aportadas por la clase.

Animamos a la clase a que decidan usar estas reglas en su trabajo en grupo. Se deben exponer las reglas en un lugar visible. Se le puede incluso dar una copia de las reglas a cada niño.

Repasamos los objetivos de la lección y si han sido logrados.

Sesión plenaria:

Pedimos a los alumnos que reflexionen sobre el contenido de la lección y sobre cómo han hablado en grupo:

-¿Qué tal ha trabajado tu grupo?

-¿Qué diferencia crees que encontraremos si todos trabajamos en grupo respetando las normas básicas?

Trabajo extra:

-Entregamos a los niños una copia de las reglas básicas para que se lleven a casa y las discutan con sus padres.

-Pedimos a los niños que en grupos consideren cuáles son las reglas básicas que se siguen en otras situaciones (amigos hablando, una reunión...etc).

Ejercicio 3A: Palabras para hablar

- Nos contamos lo que significan estas palabras unos a otros.
- Podemos usarlos en una frase si eso nos ayuda a entenderlas.
- Si ninguno sabes lo que significa una palabra, usad un diccionario.
- Ponemos un *tick* cuando creemos que todos los miembros del grupo sabemos explicar el significado de la palabra.

PALABRAS PARA HABLAR

TICK

1. Opinión _____
2. Acuerdo _____
3. Relevante _____
4. Argumento _____
5. Afirmación _____
6. Alternativas _____
7. Desafiar _____
8. Discusión _____
9. Razón _____
10. Crítico _____
11. Respeto _____
12. Información _____
13. Idea _____
14. Compartir _____
15. Positivo _____
16. Negociar _____
17. Atender _____
18. Reflexionar _____
19. Considerar _____
20. Decisión conjunta _____

Hoja Informativa 3A: Reglas básicas para hablar

Es crucial para el éxito del programa de *Thinking Together* que cada clase elabore una lista de reglas básicas que fomentan una conversación exploratoria efectiva y razonada. Las reglas básicas de clase deberían ser un reflejo de las siguientes ideas:

1. Toda la información relevante debe ser compartida entre todos los miembros del grupo.
2. Las afirmaciones y las opiniones deben ser justificadas con el uso de razones.
3. Es importante desafiar y discutir las sugerencias y las opiniones.
4. Se deben considerar alternativas antes de decidirse por algo.
5. Cada miembro del grupo debe ser animado a hablar por todos los miembros del grupo.
6. Las contribuciones de cada uno han de ser tratadas con respeto.
7. El grupo debería intentar alcanzar un acuerdo.
8. El grupo debe asumir una responsabilidad colectiva por las decisiones tomadas y las acciones emprendidas a causa de esas decisiones.

Durante la lección 3 estos puntos deben ser transformados en reglas básicas y claras que los alumnos pueden considerar como propias, que puedan apreciar y que sigan.

Los principios que figuran en el recuadro quizá deban ser formuladas como otro tipo de reglas que los alumnos conozcan o de las que hayan oído hablar. Un ejemplo de reglas elaborado por un grupo de quinto de primaria:

Nuestras reglas para hablar

- Compartimos nuestras ideas y nos escuchamos
- Hablamos por turnos
- Respetamos la opinión de cada uno
- Le pedimos hablar a cada persona
- Damos razones para explicar nuestras ideas
- Si no estamos de acuerdo preguntamos el por qué.
- Finalmente intentamos llegar a un acuerdo.

Hoja Informativa 3B: ¿Son estas reglas prácticas?

1. El que mejor lee debe decidir
2. Pregunta a cada uno por turnos lo que opinan al respecto.
3. Pide razones que expliquen el por qué.
4. Desafía lo que se ha dicho si no estás de acuerdo.
5. Si alguien desafía tus ideas, puedes dar explicación por qué piensas lo que piensas.
6. Toma decisiones lo más rápidamente posible.
7. Asegúrate que has pensado en todas las opciones antes de decidirte.
8. Si tomas una decisión errónea, elige al responsable que hay que culpar.
9. Si escuchas un buen razonamiento, es razonable que cambies de opinión.
10. Si tienes alguna información importante, no la ocultes.
11. Asegúrate que el grupo está de acuerdo después de hablar.
12. Si quieres que te escuchen, grita.
13. Decídate pronto y no dejes que nadie te convenza de lo contrario.
14. Respeta la opinión de los demás.
15. El grupo debe intentar estar de acuerdo antes de decidirse.
16. Al que le guste más hablar debe ser el que más hable.
17. El más mayor debe ser el primero en hablar.
18. Debería haber un jefe y todos los demás deben hacer lo que éste diga.
19. Los niños de tu misma edad no te pueden enseñar nada.
20. Asegúrate que preguntas a todos lo que opinan sobre algo.
21. Mira y escucha a la persona que esté hablando.
22. Deberías estar de acuerdo solo con tus amigos más cercanos.
23. Hablar en grupo ayuda a pensar.

LECCIÓN 4: USAMOS LAS REGLAS BÁSICAS

Materiales:

Hoja de ejercicio: 4A: Encontrar cosas

4B: Turnarnos para hablar y escuchar

Objetivos:

-Permitir que los grupos usen sus reglas básicas para realizar una actividad de trabajo en grupo con un contenido estructurado.

-Desarrollar una comprensión del concepto de moralidad.

Clase magistral introductoria:

Explicamos los objetivos de la lección 4 y pedimos a los alumnos que recuerden sus reglas básicas para hablar en grupo. Les contamos a los niños que los grupos van a usar las reglas que elaboraron para tomar decisiones en grupo. Entregamos la actividad 4B y le pedimos al que más le guste leer del grupo que lea la hoja para los demás. Los niños deben leer la hoja antes de que les contemos la historia. Después de eso, el profesor o un lector que elijamos leerá la hoja 4A: *Encontrar cosas* en alto.

Trabajo en grupo:

Pedimos a los alumnos que sigan las instrucciones de la hoja de ejercicio 4B: *Nos turnamos para leer y escuchar*. Los grupos pueden aportar sus ideas (las respuestas de las preguntas de la hoja de ejercicio 4B en una discusión de la clase entera acerca de la historia.

Sesión plenaria:

Pedimos a los alumnos que reflexionen sobre el contenido de la sesión, y sobre cómo han hablado juntos:

-¿Hablasteis respetando las reglas básicas? ¿Tuvisteis que recordaros las normas unos a otros?

-¿Creeis que las reglas os han ayudado a contestar mejor las preguntas de la hoja?

Trabajo extra:

-Cada grupo puede elaborar un final para la historia.

-Los grupos pueden actuar su final o la historia al completo.

-Se puede discutir en clase los aspectos relacionados con ciudadanía que introduce la historia: Amistad, robar, pertenencia y tomar decisiones difíciles.

Ejercicio 4A: Encontrar cosas

Los de cuarto estaban en clase de matemáticas. A Tania le gustaba el ejercicio que estaban haciendo, tenía que usar su regla para medir todos los lados de un rectángulo

y luego sumar esas cantidades para hallar el perímetro. Le gustaba porque disfrutaba comprobando si la suma era correcta midiendo los cuatro lados del rectángulo de una vez. Tenía ganas de que empezaran a medir otras cosas más grandes usando la cinta de medir. Entonces podría medir su mesa, la pizarra, a su amigo Samuel...

Tanía usaba la regla que Samuel le había regalado por su cumpleaños. No era muy larga, solo media hasta los 20cm, pero le gustaba mucho porque estaba decorada con el dibujo de un tigre. Samuel volvió a la mesa y se sentó. La profesora le acababa de corregir y su hoja estaba llena de tachones.

--Jo—dijo al sentarse.

--Tanía, traeme tu hoja para que te la corrija por favor—dijo la profesora desde su mesa.

Ismael dibujaba triángulos. La verdad es que no le gustaban las matemáticas, pero hoy estaba esforzándose mucho en hacer bien las líneas del dibujo. Usaba una regla del cole, que estaba llena de golpes. Ismael pensó que alguien debía haber estado usando la regla como martillo porque sino no se explicaba que estuviera en semejante estado. Aún así siguió intentando que las líneas le salieran rectas.

Tenía 1.50 euros encima de la mesa y no podía parar de mirar las monedas y colocarlas una y otra vez. Era el dinero que su madre le había dado para merendar. Normalmente su madre tan solo le daba un euro, pero hoy le había dado un poquito más y pensaba comprarse una Fanta con ese dinero extra.

Cuando Tania pasó cerca de su mesa, vio cómo se le caía algo. Era una regla. Era bastante pequeña pero era perfecta para hacer líneas rectas. "Justo lo que necesitaba" pensó Ismael "Seguro que con esta regla los triángulos me van a quedar genial y mamá se podrá muy contenta cuando vea mis trabajos". Cogió la regla del suelo y dibujo un triángulo perfecto con unas líneas muy rectas.

--¡Ala!! --exclamó Jose, que se sentaba a su lado--¡Cómo mola tu regla!

En ese momento sonó el timbre y todos recogieron sus cosas.

--Ya podeis salir al recreo—dijo la profesora.

Hacía bastante calor, así que Tanía y Sam no se detuvieron a coger los abrigos y salieron directamente al patio. El patio estaba lleno de gente. Estuvieron jugando veinte minutos y después se acercaron a la puerta, el timbre que anunciaba la vuelta a clase no tardaría en sonar.

--¡Mira Samuel!—exclamó Tanía--¡Ahí! ¡En la ventana!

Corrió hasta la ventana del edificio. Alguien había dejado unas monedas allí.

--No hay nadie por aquí cerca, ¿de quién serán?

--No lo sé—dijo Tanía. Había una moneda de un euro, dos de veinte y una de diez centimos.

--Bueno, pues si tú lo has encontrado, ahora es tuyo—Puedes compartirlo conmigo, podemos comprar una bolsa de patatas luego, para merendar.

--No sé, Sam...

El timbre interrumpió las palabras de Tanía. Cogió el dinero y se lo metió en el bolsillo. Se dijo a sí misma que luego decidiría qué hacer.

La profesora dividió la clase en dos, unos harían arte y los otros trabajarían con los ordenadores. Tanía y Samuel estaban en el grupo de arte y se pusieron a dibujar templos griegos.

--Necesito mi regla—le dijo Tanía a la profesora-- ¿puedo ir a buscarla?

--Sí -contestó la profesora—Pero no tardes mucho.

Tanía regresó a la clase, pero no encontró la regla. Tanía le preguntó a la profesora y la profesora preguntó a la clase.

--¿Alguien ha visto una regla con... ¿Con qué? ¡Ah, sí! Con un tigre?

--Ismael ha estado usando una regla así antes del recreo—dijo Paula.

Ismael parecía nervioso.

--Sí, pero la devolví... Lo recuerdo bien porque cogí mi dinero para la merienda y.... ¡Oh, no! ¡Me he dejado el dinero para la merienda fuera en el patio!

--Pues sera mejor que vayas al patio a buscarlo, Ismael.

Ismael salió corriendo.

Tanía se quedó petrificada. ¿Cómo podía reconocer que ella tenía el dinero? ¿No era demasiado tarde par hacerlo? En realidad, no había tenido ninguna intención de quedárselo... ¿O acaso sí? ¿La creerían en clase? Pero si había sido Ismael el que le había cogido la regla... entonces ella merecía quedarse con el dinero, ¿o no? ¿Y sí no decía nada y Sam luego confesaba que había sido ella la que lo había cogido?

Ismael volvió a clase. Parecía estar a punto de llorar. No había rastro del dinero. Alguien le tendría que prestar dinero para la merienda de esa tarde y su madre le tendría que dar mañana un euro de más para devolverle el dinero a esa persona.

Jose pensó en la regla que tenía en su estuche. Tendría que tirarla en la calle cuando saliera esa tarde. Ahora ya no podría usarla en clase. Todo el mundo sabría que era la regla de Tanía. Y su madre seguro que le preguntaba de dónde la había sacado si la llevaba a casa.

--Tanía, ¿qué te pasa?—le preguntó la profesora.

Ejercicio 4B: Nos turnamos para hablar y escuchar

Leed estas instrucciones en voz alta

Voy a preguntar a una persona una pregunta sobre la historia. Todos escucharemos su respuesta. Entonces le preguntaré por qué piensa eso y todos escucharemos sus razones.

Entonces otro miembro del grupo preguntará a otra persona y repetiremos esto hasta que todo el mundo haya dado su opinión y sus razones.

Pondré un tick debajo de cada casilla para mostrar cómo cada uno de los miembros del grupo ha tenido un turno para contestar la pregunta y dar sus razones.

En esta actividad debemos:

- Turnarnos para hablar y escuchar
- Asegurarnos que todo el mundo tiene una oportunidad para hablar.
- Ponernos de acuerdo para decidir cuál será nuestra respuesta como grupo.

Preguntas	PERSONA 1	PERSONA 2	PERSONA 3	RESPUESTA DE GRUPO
1. ¿Qué opciones tiene Tanía y qué debería hacer?				
2. ¿Qué opciones tiene Jose y qué debería hacer?				
3. ¿Qué es peor? ¿Robar una regla o robar dinero?				
4. ¿Esta mal robar? ¿Por qué?				

LECCIÓN 5: RAZONAMOS CON LAS REGLAS BÁSICAS

Materiales:

Fotocopias **5A: Familias de acogida**
5B: Perros en el centro

Objetivos:

- Usar las reglas básicas para hablar para buscar una solución para un problema.
- Saber preguntar preguntas con relevancia.

Clase magistral introductoria:

Explicamos los objetivos de la lección a los alumnos. Les pedimos que recuerden las reglas básicas para hablar (que deberían estar escritas en la pared de la clase).

Introducimos la actividad explicándoles que hay 6 perros abandonados en la un centro de acogida para perros. Los empleados del centro de acogida han elaborado unas fichas sobre ellos donde los describen, hablan de su tamaño, su edad, escriben lo que les gusta y lo que no les gusta... etc (aquí se puede repartir y usar la hoja de ejercicio 5B para explicar con más detalle).

Les explicamos que los perros necesitan un hogar. En ese día en concreto, cinco familias y personas llegan al centro dispuestos a llevarse un perro a casa. Tenemos información acerca del tipo de hogar que posee cada uno de los grupos (en este momento se puede mostrar y repartir la hoja de ejercicio 5B para explicar con más detalle).

Los grupos deben pensar en los perros y en las personas o familias, hablar con el resto del grupo y decidir a qué persona les asignarían qué perro. Por ejemplo, Jack el perro sabueso es muy grande y esa es una buena razón para que la señora Sánchez no se lo quede, ya que ésta posee una casa pequeña. Los grupos deberían ser conscientes de que están usando las reglas básicas y que su conversación es lo más importante de la lección. Deben centrarse en:

- pedir y dar razones por las sugerencias que hacen.
- asegurarse que todos los miembros del grupo son escuchados.
- tener en cuenta las ideas de todos los miembros antes de llegar a una decisión final.

Desgraciadamente, el perro que se quede sin hogar tendrá que ser sacrificado al final del día... Eso hace que el diálogo y toma de decisiones cobre aún más importancia.

Trabajo en grupo:

Los grupos usan la información que tienen para decidir qué perro debe ir con qué familia. Se pueden cortar las fotocopias si eso ayuda. Cada grupo debe dar un ejemplo de un perro, la familia a la que lo han asignado y justificar con argumentos por qué han tomado esa decisión.

Sesión Plenaria:

Les pedimos a los alumnos que reflexionen sobre el contenido de la lección y sobre cómo han hablado juntos:

- ¿Qué tal habeis hablado? ¿Habeis podido solucionar los problemas planteados hablando?
- ¿Creeís que era fácil decidir qué hacer?
- ¿Creeís que las reglas básicas os han ayudado a tomar decisiones?

Trabajo extra:

-Los perros y los dueños pueden estar unidos por una grapa o unas flechas en una hoja aparte. Les contamos a los niños que el perro condenado puede ser salvado si logran decidir qué tipo de familia/hogar sería el ideal para ese perro. Pondremos un tiempo máximo de 5 o 10 minutos para lograr esto. Una vez finalizado el tiempo cada grupo expondrá sus ideas y las razones que las fundamentan al resto de la clase. Entonces se decidirá si salvar o no al perro.

Ejercicio 5A: Familias de acogida

Familia López Madruga

Juan López (padre) Susana Madruga (madre), Tomás (10 años) y Lucía (8 años)

Viven en una casa con un jardín muy grande y en una calle tranquila.

Entre semana todos los vecinos están fuera trabajando y en el cole pero todos están en casa durante los fines de semana. Tienen un parque a 5 minutos andando. A Tomás y a Lucía les gusta jugar al fútbol y montar en monopatín.

Señora Sánchez

Tiene 75 años y vive sola. Tiene una casa pequeña con un jardín minúsculo. A menudo vienen a verla su nieto Pablo, que tiene 3 años y su nieta Sara que tiene 1 año. Le gusta mucho caminar hasta el kiosco de la ONCE para comprarse su billete de lotería.

Familia Fernández San Juan

Jose Fernández (padre), Marta San Juan (madre), Silvia (9 años).

Silvia tiene un pony y dos gatos y ahora quiere un perro. Aunque a su madre no le gustan mucho los perros.

Viven en una casa muy grande en el campo con un jardín también muy grande. La casa está rodeada de extensos prados. A todos les gusta mucho salir y estar al aire libre.

Familia García

Omar García (padre), Kylie (16 años) y Luis (14 años).

Viven en una casa pequeña en la ciudad. El Padre trabaja desde casa y a tanto Kylie como a Luis les encantan los perros. Es más, a Kylie le gustaría ser veterinaria de mayor. Al padre le gustaría tener un perro que vigilara la casa.

Lara Jiménez

Lara tiene 30 años y vive en un bajo sin jardín. Suele estar en casa a menudo. Le encanta salir a caminar por la montaña y le encantaría tener un perro que la acompañara. Su sobrino Nicolás (8 años) a veces se queda con ella.

Hablad en grupo para decidir qué perro le convendría más a cada familia. Recordad dar razones que justifiquen vuestras ideas.

Jack
Perro sabueso
Macho
4 años

Tamaño: Grande. Es amigable y cariñoso.
Comida: Come mucho.
Vigila la casa: Sí
Le gusta: Sentarse junto al fuego y morder zapatos.
No le gustan: Los gatos.

Lua
Mezcla
Hembra
3 años

Tamaño: Mediana. Muy active.
Comida: Cualquier tipo de comida de perros.
Vigila la casa: Sí
Le gusta: Masticar y jugar con cosas.
No le gusta: Quedarse en casa

Scuter
Mezcla
Macho
6 meses

Tamaño: Pequeño.
Comida: Patatas fritas y chocolate. Debe aprender a comer mejor.
Vigila la casa: No
Le gusta: Salir a jugar y ladrar a los pájaros y a los gatos. Aún no está bien enseñado.
No le gustan: Obedecer.

Max
Mezcla
Macho
5 años

Tamaño: Mediano. Tiene mucho pelo. Necesita que lo cepillen a menudo. Tira mucho de la correa.
Comida: De todo.
Vigila la casa: Sí
Le gusta: Perseguir Pelotas y coches.
No le gustan: Que lo cepillen o que lo dejen encerrado.

Fifí*Caniche*

Hembra

5 años

Tamaño: Mediana. Necesita que le corten las uñas y la acicalen a menudo.

Comida: Pollo y jamón

Vigila la casa: No

Le gusta: Los niños y otros perros

No le gustan: la lluvia e ir al veterinario.

Nora*Beagle*

Hembra

11 años

Tamaño: Pequeña. Cariñosa pero tímida.

Comida: Leche y galletas

Vigila la casa: No

Le gusta: Que le den palmaditas y estar calentita.

No le gustan: Correr, las bicis y la nieve.

LECCIONES DE LA SECCIÓN B

Hablamos, pensamos y
aprendemos
(Talking, Thinking and
Learning)

LECCIÓN 6: PERSUASIÓN

Materiales:

Hoja de Ejercicios 6A: Frases para persuadir

6B: Hacemos que una carta sea más persuasiva

Objetivos:

-Ayudar a que los alumnos entiendan que el lenguaje se puede usar para persuadir a otros.

-Enseñar a usar la capacidad persuasiva del lenguaje oral y escrito.

Clase magistral introductoria:

Explicamos los objetivos de la lección y comprobamos que entienden el significado de la palabra *persuasion*. Discutimos brevemente acerca de situaciones en las que se puede usar la *persuasion* para algo y lo unimos con los conceptos de *argumento* y *acuerdo*. Entregamos a cada grupo una copia de la hoja de ejercicios 6A: Frases para persuadir. Pedimos a los alumnos que elijan una frase y expliquen una situación en voz alta dónde usen esa frase. El contexto es importante, por ejemplo: ir a un partido de fútbol, comerse una pizza, ir de compras o a nadar a una piscina.

Trabajo en grupo:

1. Escribir una carta

Repartimos la hoja de ejercicios 6B: Hacemos que una carta sea más persuasiva. Pedimos a los grupos que hablen para cambiar la carta y hacer que sea más persuasiva. Pueden elegir usar algunas de las palabras o frases usadas en la hoja de ejercicios 6A.

2. Role-Play

Cada grupo escribe un guion para una escena en la que unos de ellos interpreta a un padre y los demás son los hijos. La escena debería basarse en una de las siguientes situaciones en las que un niño desea:

- ir a la discoteca
- quedarse despierto hasta tarde viendo la tele
- que le aumenten la paga
- invitar a un amigo a dormir
- cenar patatas fritas
- que le dejen tener una mascota

Los grupos deben prepararse para presentar su escena delante de toda la clase. La clase debe discutir la efectividad de los argumentos y votar qué es lo que el padre debería decidir hacer.

Sesión plenaria:

Pedimos a los alumnos que reflexionen sobre el contenido de la lección y en la calidad de su discusión en grupo:

¿Qué tal ha trabajado tu grupo en su conjunto?

¿Puedes dar un ejemplo de cómo habéis compartido vuestras ideas usando el habla?

Trabajo extra:

-Se les puede pedir a los alumnos que hablen sobre cómo los adultos reaccionan ante maniobras de persuasión. Pueden hablar sobre cómo los adultos a menudo terminan una conversación con frases como: "¡Por que lo digo yo!" o "Cuando tú seas mayor..." ¿Acaso los niños se dan cuenta de la gran responsabilidad que tienen los adultos?

-Los alumnos pueden anotar frases hechas, refranes o proverbios para enseñar delante de la clase ¿Son estas frases ciertas? Podría tratarse de proverbios o frases que se dicen con frecuencia: "No digas que lo vas a hacer, simplemente hazlo" o "Es todo palabrería"...

_Los alumnos podrían buscar fábulas en las que algún personaje use el habla para persuadir, diga mentiras, la use para presumir de algo o intente engañar con el habla. Lo interesante de la fábula no será tal vez el mensaje que tenga, que quizá sea obvio para ellos, sino prestar atención a las estrategias que usan esos personajes a través del habla.

Ejercicio 6A: Frases para persuadir

Como resultado de...

Contemplalo desde otra perspectiva...

Éstos son los hechos...

Me gustaría que tuvieras en cuenta...

Porque...

¿Crees que...?

Pero...

Por otro lado...

¿Quizá podríamos discutir acerca de...?

Finalmente...

Desde mi punto de vista...

Teniendo en cuenta...

Para arreglar esto podríamos...

En algún momento...

En lugar de...

Puedo llegar a entender que...

Tal vez...

Para resolver esto...

Por favor...

Me gustaría que pensaras sobre...

La próxima vez...

Así que...

La razón por la que... es...

En contra de eso yo podría decir...

Para empezar...

Mi razonamiento es...

Aún así...

Para mí, lo mejor sería que...

Tal vez esta vez...

Sin embargo...

Podríamos decidirlo entre los dos...

Ejercicio 6B: Hacemos que una carta sea más persuasiva

Laura López Gómez
C/ Antonio Machado, 3
Portal C, 3º C 28050
Madrid

Querida Tía Elena,

Muchas gracias por ofrecerte a llevarme al museo por mi cumpleaños pero no quiero ir ¿Tengo que ir? No es justo. Los museos no me gustan, son muy aburridos y están llenos de cosas viejas. Quiero ir al cine. Quiero ver una película y tú debes dejarme elegir la que prefiera.

Voy a llevar a una amiga conmigo y quiero que tomemos palomitas y un helado de chocolate. También ha de ser en la sesión de las 9 de la noche. Ya somos mayores y sólo los niños pequeños van a las primeras sesiones de la tarde. Si no lo hacemos a mi manera pondré mala cara y no pararé de bostezar del aburrimiento. Si no te gusta ir al cine, lo siento mucho. Tú límitate a pagar las entradas y la comida. Después de todo es mi cumpleaños y puedo hacer lo que se me antoje.

Saludos afectuosos,

Laura

LECCIÓN 7: ¿QUIÉN PAGA? (lección 8 del original)

Materiales:

Hoja de Ejercicios 8A: ¿Quién paga?

8B: Formato de discusión

8C: Tarjetas de dramatización

Objetivos:

-Usar las reglas básicas para tomar decisiones sobre dilemas morales y sociales

-Usar la discusión para que los alumnos sean conscientes de la situación en la que se encuentran las víctimas de crímenes.

Clase magistral introductoria:

Explicamos los objetivos de la lección y les pedimos a los alumnos que se acuerden unos a otros las reglas básicas para el habla. Después leemos en alto, o pedimos que un niño lea la historia de la hoja de ejercicio 8A.

Les recordamos a los alumnos que no pasa nada si no estamos de acuerdo con las ideas de otros, siempre que las opiniones se den con calma y educación y podamos dar una razón por la que no estamos de acuerdo con algo. Es importante aclarar aquí que el estar en desacuerdo con alguien no significa que esa persona no te gusta. Reforzamos la idea también de que en una Buena conversación, la gente a menudo no está de acuerdo, pero escuchan con atención las razones que otros dan y están preparados para aportar razones para su desacuerdo.

Trabajo en grupo:

Repartimos la hoja de ejercicio 8B y les pedimos a los alumnos que hablen sobre las cuestiones que plantean las preguntas. Después los grupos podrían realizar las siguientes actividades:

1. Les pedimos a cada grupo que hagan su aportación sobre las cuestiones planteadas en una discusión con toda la clase.
2. Pedimos a cada grupo que haga una pequeña representación de 3 minutos basándose en las tarjetas de dramatización de la hoja de ejercicios 8C.

Los alumnos deberían leer las tarjetas de dramatización juntos y decidir cómo presentar la historia al resto de sus compañeros. La dramatización debe ser sencilla y ni siquiera deben tomarse la molestia de escribir el guión. Cada grupo debe presentar su pequeña obra al resto de la clase que hará de público.

Sesión plenaria:

Les pedimos a los alumnos que reflexionen sobre el contenido de la lección y sobre la calidad de su conversación.

¿Nos puedes decir cómo el hablar juntos os ha ayudado a tomar decisiones acerca de la historia?

¿Cómo lograsteis llegar a un acuerdo?

¿Podeis dar un ejemplo de cómo el hablar juntos os ayudó a organizar la dramatización?

Trabajo extra:

-Grabar en audio o en video la dramatización de los grupos.

-Usar las dramatizaciones para discutir en la clase las cuestiones que hayan surgido.

-Les pedimos a los alumnos que escriban una historia usando los personajes de esta historia: Isabel, Tania, Enrique y los que ellos se quieran imaginar. La historia debería afrontar un tema controvertido como Amistad, las similitudes y diferencias entre la gente, decir la verdad, respetar al otro, los enfados, las apariencias, derechos y responsabilidades...etc. La historias no tienen por qué tener finales felices o solucionar los problemas pero deberían centrar la atención en algún problema potencial que puede aparecer a causa del comportamiento de alguien.

-Elegimos otra historia que tenga un dilemma moral y los afrontamos de la misma manera, la hoja de ejercicio 8B podría adaptarse para ser usada también. Con este método de actuación, los alumnos pueden incluso llegar a organizarse sus propias discusiones, usando las reglas básicas para hablar.

Ejercicio 8A: ¿Quién paga?

El Mercadito era una tienda pequeña que estaba en la esquina del cruce entre la calle mayor y la calle Murillo. Isabel vivía en la calle Murillo y muchas veces, antes del colegio, paraba a comprarse una bolsa de patatas fritas o un zumo para el recreo. Por las mañanas, muchos niños del colegio compraban allí y si tenían algo de paga, también se pasaban después del cole a comprar golosinas o helados en el verano. La tienda estaba siempre llena de niños y los dueños, Paloma y Manuel, abrían muy temprano por la mañana, cerraban bastante tarde y abrían también todos los fines de semana.

Isabel no sabía muy bien a qué hora abrían, pero era siempre más temprano de la hora en que ella se levantaba, El hijo de Paloma y Manule, Enrique, estaba en la clase de Isabel y ella sabía que muchas veces él ayudaba a sus padres a colocar los productos en las estanterías.

Isabel llamó al telefonillo del piso de Tania.

- ¿Estás lista ya?- le preguntó Isabel cuando bajó.

Las dos niñas comenzaron a andar hacia el colegio.

Tania estaba feliz porque en el cole se celebraba la feria del libro y había pensado comprarse un libro a la hora de comer. Tenía suficiente dinero para comprarse el siguiente libro de la serie de animals que estaba haciendo.

-¿Vas a comprarte algún libro, Isabel?- le preguntó.

-Vaya... Se me ha olvidado que la feria empezaba hoy, solo tengo cincuenta centimos para unos kikos.

-Supongo que comprarás los de siempre, sabor barbacoa... -añadió Tania.

La tienda estaba llena, había tres chicas de sexton y dos chicos de quinto. Había también un hombre de traje que estaba comprando chocolatinas y una mujer con un carrito que quería comprar el periódico.

Manuel estaba detrás del mostrador, la tienda era pequeña y parecía abarrotada. La gente empujaba y muchos se tropezaban con la pila de periódicos del suelo y la sillita del bebé. Después de un rato la tienda se vació e Isabel se acercó a pagar sus kikos.

Manuel parecía enfadado y preocupado.

-¡Mirad!... Esto harto de niños, ya no puedo más, no me lo puedo permitir.

Tania e Isabel se miraron sorprendidas; ¿De qué estaba hablando?

-Todas las mañanas y las tardes la tienda está llena de niños- dijo mientras hacía gestos con las manos- Más bien abarrotada de niños. Y cuando os vais, la mitad de mis cajas de caramelos y cajas de galletas desaparecen con vosotros. ¡Mirad! ¡Mirad con vuestros propios ojos! Faltan cuatro paquetes de galletas y nadie los ha pagado- afirmó muy enfadado.

Las niñas no sabían qué decir. Paloma, su mujer, salió de un cuarto que estaba al fondo de la tienda. Manuel se giro y se dirigió a ella.

-Lo han vuelto a hacer, se han llevado un montón de paquetes de galletas y Dios sabe cuántas cosas más. No podemos seguir manteniendo esta situación, no nos lo podemos permitir. Vosotros- dijo dirigiéndose a las dos niñas- no podéis seguir llevándoos cosas... Luego Enrique nos pide dinero para comprarse un libro en la feria del cole, ¿Cómo voy a poder darle dinero para que se compre un libro si la gente no para de robarnos?

Paloma se sentó en una silla tras el mostrador. Parecía triste.

-¿Qué vamos a hacer ahora?- dijo- Es inútil. Enrique nos ayuda tanto cuando debería estar jugando y aún así no podemos darle dinero para que se compre un libro...

Tania fue la primera en salir de la tienda e Isabel la siguió y cerró la puerta.

-Isabel, ¿Crees que son pobres? Yo siempre pensé que la gente que tenía tiendas era rica, por todas esas cosas que tienen...

-Sí... además ella dijo que les habían robado pero no es lo mismo robar en una tienda que robar a una persona, ¿no crees?... Además, ellos siempre están abiertos, deben ganar mucho dinero...

-No sé... Si la gente solo compra galletas, kikos y golosinas o periódicos o leche, ya sabes, cosas baratas, deben tener que vender un montón para sacar un poco de beneficio...

-Pero... me han hecho sentir cómo si todo fuera culpa mía!... -siguió Isabel- Eso no es justo.

Las niñas llegaron al cole justo cuando sonaba el timbre para clase.

Ejercicio 8B: ¿Quién paga? Discusión en grupo

Instrucciones

Lee en voz alta las siguientes instrucciones:

Vamos a usar las reglas básicas para hablar para pensar sobre las preguntas de esta hoja. Empezaremos turnándonos para decir lo que cada uno piensa y por qué y pondremos un tick en cada casilla mientras lo vamos haciendo. Después podemos discutir sobre nuestras ideas. ¿De acuerdo? Pues empezemos con la primera pregunta...

Preguntas para discutir	Escritor	1	2	3
¿Es lo mismo robar en tiendas que robar a personas?				
¿Qué es igual y qué es diferente?				
¿Está mal robar en tiendas? ¿Por qué?				
Si alguien robara comida por que tiene mucha hambre y no tiene dinero, ¿eso también estaría mal?				
¿Quién de la tienda crees que habrá sido el que ha robado? ¿Por qué lo crees?				
Isabel piensa que no es justo que Manuel se enfadara con ella, ¿estás de acuerdo con ella?				
¿Crees que es igual de grave robar una pequeña tienda (como la que aparece en la historia) o robar en unos grandes almacenes (como El Corte Inglés por ejemplo)?				
¿Cómo se debería castigar a los que roban?				

Ejercicio 8C: ¿Quién paga? Tarjetas de dramatización

Tijeras

El profesor Antonio observa cómo Lucas se acerca al armario de material. Lucas vuelve con las manos vacías pero Manuel ve cómo un par de Tijeras sobresalen de su bolsillo. Piensa que Lucas las ha robado. Nunca ha pillado a Lucas robando, pero últimamente han desaparecido muchas cosas de la clase y Antonio quiere acabar con el asunto. ¿Qué puede hacer Antonio? ¿Qué va a hacer? ¿Cómo responderá Lucas?

Hermanos

Andrés piensa que su hermano mayor, Pablo, ha estado robando en la tienda que hay en su barrio. Su amigo Marcos le dijo que vio a Pablo entrar en la tienda con sus amigos y robar caramelos y bebidas. Marcos no quiere que Pablo se meta en líos pero Andrés tampoco quiere que sea un ladrón.

¿Qué puede hacer Andrés? ¿Qué debería hacer? ¿Qué crees que pasará?

Tesoro

Estás jugando con un amigo cerca de unos arbustos. Debajo de uno de los arbustos encuentras una cartera envuelta cuidadosamente en una bolsa de plástico. Parece evidente que ha sido escondida allí por una buena razón. Dentro de la cartera hay 15,000 euros y una fotografía pero no hay ningún nombre escrito.

¿Qué puedes hacer? ¿Qué harías? ¿Qué crees que pasará?

Supermercado

Has salido a comprar en el supermercado y ves cómo una señora mayor se mete una lata de atún en el bolso en lugar de meterlo en el carrito.

¿Qué puedes hacer? ¿Qué harías? ¿Qué crees que pasará?

Tendero

A un amigo tuyo le han pillado robando caramelos en la tienda. Tú tienes que ir a la tienda a comprar un brick de leche. El dueño de la tienda te sigue por la tienda. Le preguntás por qué te sigue y él dice que no se fía de tí. Luego te pide que te vayas.

¿Crees que es justo? ¿Qué crees que pasa?

Polos

Tu y tu Hermana salís a jugar. Es un día muy caluroso. Teneis mucha sed pero estais lejos de casa. Tu Hermana te pide que esperes fuera de la tienda mientras ella va dentro a por unos polos. Tú sabes que no tiene dinero.

¿Qué le dices? ¿Qué haceis las dos? ¿Qué crees que pasa?

El marco de la ventana

Estás jugando con un amigo en el recreo y os encontráis 50 centimos en el marco de una ventana. Tu amigo los coge y dice que se los va a dar a la profe. Sin embargo, después de clase tu amigo te ofrece un caramelo que acaba de comprar y te das cuenta que se ha quedado el dinero.

¿Qué le puedes decir? ¿Qué haría él? ¿Qué crees que pasará?

El abusón

Te encuentras con el abusón del colegio en la entrada a la tienda. Te dice que quiere una chocolatina y te exige que le des dinero para comprársela. Pero tú no tienes dinero. Él te dice que como no entres y le robes una chocolatina te dará una paliza.

¿Crees que debes hacer lo que te pide? ¿Qué puedes hacer? ¿Qué crees que pasará?

A que no te atreves

Sales a jugar con tus amigos y decides jugar a *atrevimientos*. El grupo le reta a alguien a entrar en la tienda y robar una bolsa de patatas fritas. Uno de tus amigos logra hacerlo y todos os comeis las patatas. Ahora te toca a tí. Tus amigos te retan a robar unos lacasitos.

¿Qué puedes hacer? ¿Qué crees que pasará?

Manzanas

Tu vecina tiene un manzano repleto de manzanas y te cuenta que las va a llevar al colegio para la fiesta de la cosecha. Pero esa misma noche le roban casi todas las manzanas. Al día siguiente, un amigo tuyo te ofrece una bolsa de manzanas que está claro que proceden del árbol de tu vecina.

¿Qué le puedes hacer? ¿Qué crees que pasará?

El reloj

Después de Educación Física desaparece el reloj de Tomás. Todos los de la clase lo buscan pero no aparece. Tomás está triste porque tiene miedo que sus padres se enfaden con él. Esa misma tarde te vas a jugar a casa de un amigo y ves el reloj de Tomás encima de la mesa de su habitación.

¿Qué le dices? ¿Qué crees que dirá tu amigo? ¿Qué crees que pasará?

Recompensas

Estás a punto de terminar el curso y la profesora ha traído una bolsa de caramelos para repartir entre los alumnos que se han esforzado. Durante el recreo, vas a clase a coger una cosa que se te ha olvidado y ves la bolsa de caramelos abierta encima de la mesa de la profesora. Te encantaría coger un caramelo y crees que también podrías coger uno para tu amigo. Luego recapitas un rato.

¿Qué decides hacer al final? ¿Por qué? ¿Qué crees que haría otra persona?

LECCIÓN 9: TOPILLOS ACUÁTICOS

Materiales: 9A: hoja informativa sobre los topillos

9B: Instrucciones para hacer tablero para jugar (para el profesor)

9A,B,C,D: Material para jugar al juego

Objetivos:

- Fomentar el pensamiento crítico de los alumnos
- Practicar la toma de decisiones en grupo y la presentación de ideas también en grupo
- Concienciar sobre un tema ecológico

Clase magistral introductoria:

Explicamos los objetivos de la lección y nos aseguramos que los alumnos recuerden la importancia de usar las reglas básicas para hablar cuando hablen en grupos. Use la hoja informativa 9ª para presentar el tema de los topillos en Inglaterra y su situación en peligro de extinción. Entonces explique las reglas y el objetivo del juego.

REGLAS

El objetivo del juego es pasar un año viviendo a la orilla del río, averiguando los factores que afectan la vida de los topillos acuáticos. Las colonias de topillos pueden ganarse o perderse. Los jugadores tiran el dado y se mueven por el río. Si caen en una casilla determinada tendrán que coger una tarjeta de suerte. Algunas de las cartas hacen que los niños escuchen la opinión que distintos miembros de la comunidad tienen acerca de los topillos acuáticos y sus deseos de alterar el cauce del río. Un jugador tiene que leer las tarjetas de los ciudadanos.

Entonces cada grupo ha de discutir la opinión del miembro de la comunidad que han escuchado en grupo y usando las reglas básicas para hablar. Así cada grupo ha de decidir si aceptan o no el cambio propuesto. Cuando todos los jugadores hayan llegado a la última casilla, el grupo debe hacer una valoración de las colonias que han sobrevivido en el río.

Trabajo en grupo:

Pedimos a los alumnos que jueguen al juego en sus grupos para hablar. Luego compramos los resultados del obtenidos al final del juego en la clase.

Después se cambia de grupos y vuelven a jugar usando las reglas básicas

para hablar aunque no sean sus grupos para hablar habituales. Finalmente les pedimos a los alumnos que autoevalúen su discusión.

Sesión plenaria:

Pedimos a los alumnos que reflexionen sobre lo aprendido en la lección y la calidad del habla cuando discutían en grupos:

¿Habéis trabajado bien juntos? ¿Cómo de bien?

¿Podéis dar un ejemplo de un momento en que cambiasteis de opinión porque alguien fundamentó bien su argumento?

Trabajo extra:

Buscar más información sobre los topillos o buscar información sobre otro animal en peligro de extinción (los árboles de Mahogany en el Amazonas, los gorilas de montaña en Rwanda, el kiwi en Nueva Zelanda... etc.)

Considerad el tipo de acciones que pueden hacer la gente que vive en la zona y que puede crear la destrucción de hábitats. ¿Qué similitudes ven con los topillos acuáticos?

LECCIÓN 10:

Materiales: 10A: Mapa de ciudad
10B: Edificios
10C: Tarjetas informativas

Objetivos:

- Desarrollar la capacidad de los alumnos de dar instrucciones y seguirlas.
- Favorecer la toma de decisiones conjunta usando las reglas básicas para hablar
- Concienciar sobre la planificación y la temática ecológica

Clase magistral introductoria:

Usando esta hoja informativa, explicamos los objetivos de la lección y la actividad de planificación de la ciudad. Cada grupo ha de planificar y construir la mejor ciudad posible. Para hacer esto, cada grupo debe discutir y decidir dónde poner los nuevos edificios en el mapa de la ciudad. Algunos de estos edificios son: Una piscina, los servicios, una gasolinera, un colegio, una iglesia y una fábrica.

Cada grupo ha de decidir dónde colocar cada instalación. Recordamos a los alumnos que han de razonar sus respuestas dando explicaciones y que deben llegar un acuerdo al final. Repartimos las fotocopias (10A y 10B) para que planifiquen.

La fotocopia 10C da razones por las que poner seis de las instalaciones en sitios diferentes. Hemos de repartir esta información entre los grupos.

Trabajo en grupo:

Cuando un miembro de un grupo quiera solicitar la información que otro grupo tiene sobre otra instalación, ha de acercarse un miembro del grupo que posee la información y solicitarla. Los alumnos que tienen la información requerida no pueden entregarla, tan solo pueden leerla a quien lo solicite. El miembro que lo solicite debe recordar la información para comunicársela a su grupo. Todos deben turnarse para leer o solicitar información.

Se organiza después una discusión de toda la clase acerca de dónde es mejor emplazar las distintas instalaciones.

Sesión plenaria:

Pedimos a los alumnos que reflexionen sobre lo aprendido en la lección y la calidad del habla cuando discutían en grupos:

¿Podéis nombra a alguien que haya tenido ideas diferentes a las vuestras?

¿Qué habéis tenido que hacer para llegar a un acuerdo en grupo?

¿Creéis que vuestro grupo ha hablado bien? ¿Por qué pensáis así?

Trabajo extra:

-Usamos un mapa de la ciudad donde vivimos y discutimos sobre las posibles razones para que ciertas instalaciones están ubicadas donde están.

ASSESSMENT IN THINKING TOGETHER

Assessing children's talking and thinking during group work

1. Does the child initiate and carry on conversations?
2. " " listen carefully?
3. Can the child's talk be easily understood?
4. " " describe experiences?
5. " " give instructions?
6. Does the child follow verbal instructions?
7. " " " modify talk for different audiences?
8. " " " ask questions?
9. " " " give reasons?
10. " " " ask others for their views?
11. " " " reply to challenging questions?
12. Can the child take joint responsibility for decisions?
13. " " think aloud?
14. " " generate and consider an alternative point of view?

Self evaluation by children during plenary time

Children can be helped to reflect on the quality of their talk (see possible questions in p.7)

Self assessment: Talk diary

Can be used to draw a more comprehensive picture of talk awareness (children can do it ticking boxes or entering a score, example p.8)

OUR GROUND RULES FOR TALK

1. Share ideas and give a reason for them.
2. We listen actively and respectfully.
3. We help each other and accept responsibility for the good and for the bad.
4. We agree in the end.
5. We respect every opinion.
6. We take turns to speak.
7. We ask 'why'.

REGLAS PARA HABLAR TRABAJAR EN GRUPO

1. Ser positivo ante el grupo.
2. Respetar las opiniones de los miembros del grupo.
3. Escuchar todas las opiniones y reflexionar sobre ellas.
4. Pensar antes de hablar.
5. Aportar y defender ideas para el grupo.
6. Colaborar todos.
7. Negociar las decisiones y llegar a un acuerdo.

APPENDICES

APPENDIX
SYMBOLS FOR DISCOURSE TRANSCRIPTION

Units	
Intonation unit	{carriage return}
Truncated intonation unit	--
Word	{space}
Truncated word	-
Speaker identity/tum start	:
Speech overlap	[]
Transitional Continuity	
Final	.
Continuing	.
Appeal	?
Terminal Pitch Direction	
Fall	\
Rise	/
Level	--
Accent and Lengthening	
Primary accent	^
Secondary accent	·
High booster	!
Low booster	:
Lengthening	=
Tone	
Fall	\
Rise	/
Fall-rise	\ /
Rise-fall	/ \
Level	--
Pause	
Long	...(N)
Medium	...
Short	..
Latching	(0)

Appendix Continued

Vocal Noises	
Vocal noises	()
Inhalation	(H)
Exhalation	(Hx)
Glottal stop	%
Laughter	@
Quality	
Quality	<Y Y>
Laugh quality	<@ @>
Quotation quality	<Q Q>
Phonetics	
Phonetic/phonemic transcription	(/)
Transcriber's Perspective	
Researcher's comment	(())
Uncertain hearing	<X X>
Indecipherable syllable	X
Specialized Notations	
Duration	(N)
Intonation unit continued	&
Accent unit boundary	
Embedded intonation unit	<l l>
Restart	{Capital Initial}
False start	< >
Code switching	<L2 L2>
Nontranscription line	\$
Reserved Symbols	
Phonemic/orthographic symbols	'
Morphosyntactic coding	+ * # { }
User-definable symbols	" -

Discourse Transcription 2: Convention Updates

Meaning	Old notation: DT1	New notation: DT2
1. Unintelligible (syllables)	X	#
2. Uncertain hearing (words)	<X you're kidding X>	#you're #kidding
3. Pseudograph (fake name, address etc.)	Jill	~Jill
4. Real name, address, etc.	#Jill	Jill
5. Long-scope features (various)	<A two words A>	<A> two words
6. Laughter during speech (1-5 words)	<@ two words @>	@two @words
7. Laughter during speech (6+ words)	<@ six words @>	<@> six words </@>
8. Overlap, 3rd instance	[3 word word word 3]	[,word word word]
9. Overlap, 2nd instance	[[word word word]]	[,word word word]
10. Vox: voice of another	<Q words Q>	<VOX> words </VOX>
11. Word truncation/cut-off with no glottal	wor-	wor- (en dash)
12. Word truncation/cut-off with glottal	wor-	wor% (en dash)
13. Intonation unit truncation	--	— (em dash)
14. Morpheme boundary		- (hyphen)
15. Extra-long IU	indent	(word wrap)
16. Pause, timed	...(1.2)	(1.2)
17. Pause, short (< 150 milliseconds)
18. Pause, untimed (> 150 milliseconds)
19. Pause location (if at IU boundary)	[line-initial]	[on separate line]
20. Latching	(0)	=
21. Speaker label	J:	JILL;
22. Reset	<i>Capital letter</i>	†
23. Sentence start		<i>Capital letter</i>
24. Repair/editable	<word>	*word
OPTIONAL COMPUTER-ORIENTED OF SPECIALIZED CONVENTIONS:		
Meaning	Old notation	New notation
25. Timestamp (start time)	00:01:06:21	<T=66.21>
26. Timestamp (start and end time)	00:01:06:21 00:01:07:39	<T=66.21_67.39>
27. Duration (of region, e.g. long laughter)	@(9.3)	@_<DUR=9.3>

*“[b]eing able to develop
a working atmosphere in the classroom
where students feel happy and confident
in expressing their views
and where they will listen thoughtfully
to the contributions of others
and to the words of the teacher”*

(Scott, 2008: 34-35)