

# Musical Learning and Teaching Conceptions as Sociocultural Productions in Classical, Flamenco, and Jazz Cultures

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## Abstract

This study analyzes the discourse of musicians from three different cultures of musical learning, ranging from the more formal classical European culture, through the jazz culture, to the less formal flamenco culture in Roma communities. It is based on cultural studies of learning and education and the implicit conceptions theory. Thirty-one semi-professional guitarists were interviewed about learning and teaching music. We applied the lexicometrical method using correspondence analysis. We found significant lexical differences among the three cultures for all the three educational dimensions analyzed (teaching, learning, and evaluation). We describe literal answers from the most representative participants from each culture (using the automatic selection of modal response procedure according to  $\chi^2$  distance) and a qualitative analysis of their full answers. Finally, we project a distribution of the three cultures of learning onto a factorial plane, which summarizes distribution of the three cultures of learning according to two axes that we have interpreted in terms of (a) locus of control (self-others) and (b) phenomenology (analytical–emotional distance–conceptual–explicit knowledge/sensory–involvement–embodied–implicit knowledge), respectively. The discourse of classical and flamenco participants expressed other-regulated learning, although classical participants were closer to an explicit, conceptual pole, whereas flamenco participants were closer to an implicit, embodied pole. The discourse of jazz participants lay in between the other two, closer to the explicit pole, but including characteristic language about self-regulation.

## Keywords

learner, teacher, musical learning, cultural psychology, social cognition

Research into music over the past 15 years has shown growing interest in the non-formal and the informal realms, with the aim of evaluating how they could be applied to teaching within institutional contexts (Dunbar-Hall & Wemyss, 2000; Robinson, 2010; Wang & Humphreys, 2009).

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There has also been interest in various forms of informal music learning outside institutional settings (Folkestad, 1998; Green, 2001-2002, 2008; Shah, 2006). These contexts can be understood as a continuum from informal to formal. Certain components, such as sources of learning, type of music listened to/played daily, goals, listening, evaluation, types of practice, and community may be placed at different points along this continuum. Several authors have defined the differences in these components (Table 1).

There is a wide range of intermediate situations along the continuum, which have relevant distinctions that as far as we know have not been described previously. This study was conducted in Spain, where there are three cultures of musical learning located at different points along the continuum of learning and teaching music, from the more informal to the more formal pole: the flamenco, jazz, and classical cultures of musical learning. This article thus builds on a previous one (Casas-Mas, Pozo, & Montero, 2014), where answers were provided by advanced guitar learners (who were already semi-professional musicians) to a set of closed questions. Analysis of their answers showed that the conceptions learners from a flamenco culture belonging to Roma ethnicity differed significantly from those of classical and jazz learners. This article explores these cultures of learning through the descriptive first-person perspective of semi-professional guitarists answering open-ended questions. Any regularities or features of social desirability reflected in their answers would not easily be influenced by any bias that the researchers might have. This complementary methodology enables us to compare the results of answers with closed multiple-choice questions (from the previous study) in which the multiple-choice answers were organized as implicit conceptions of learning, with the results of spontaneous speech in response to the same questions in open-ended form. The original speech with which the participants answered the open-ended questions is preserved in all its richness and spontaneity. In this study, we are interested in focusing on the consistency of different types of information. The previous study will be described in detail below, before establishing the aims.

We will first discuss the differences between formal and informal in teaching and learning settings. Interest in these differences dates back to the cultural studies described below.

## **Embodied and Theoretical Knowledge From Informal to Formal Realms of Learning**

Scribner and Cole (1973) studied whether differences in the social organization of education had consequences on cognition, that is, whether differences in the organization of education (formal or informal) in turn promoted differences in the scope and nature of learning, and therefore in thinking skills. In a study on Mayan Children in Guatemala, Rogoff and Waddell (1982) found that by participating in informal education embedded in culturally relevant daily practices, people learn to remember in ways that are relevant to their everyday lives. Rogoff, Mystri, Göncü, and Mosier (1993); Rogoff, Paradise, Mejía Arauz, Correa-Chávez, and Angelillo (2003); and Rogoff et al. (2005) propose notions such as *guided participation* or *intent community participation* that focus on how learners, through routines, have access to observe and begin to contribute to ongoing community endeavors, unlike what occurs in the context of *assembly-line instruction* or *guided repetition*, where learners are expected to learn well before using or applying their new knowledge in extra-educational contexts.

Two conclusions can be drawn from these studies. First, these populations are characterized by a learning community (Rogoff, Goodman Turkkanis, & Bartlett, 2001). Children learn from adults and peers through observation and collaboration in shared activities. Second, from the academic standpoint, it is difficult to conceive that children can learn without instruction and only by participating in communities (Rogoff, 2012). Musical learning observed in the Roma community in Casas-Mas, Pozo, and Montero (2014) points to this kind of learning until early adolescence, when learners begin to receive more specific musical instruction from adults

**Table 1.** Summary of the Main Differences Between Informal and Formal Contexts, Described by Folkestad (2006), Green (2001-2002), and Trilla (1997).

	Informal	Formal
Music in everyday life	The music learners listen to daily matches the music they play.	The music they listen to daily differs from the music they play.
Location	Outside institutions	Within institutions
Planning	Activity is not sequenced a priori.	Activity is sequenced a priori.
Objectives	Learners prefer making music just for fun and music of their own style. Activity focuses on ways to work/play/compose.	Seek technical and musical excellence. Prioritise taking classes and working alone. Activity focuses on how to work/play/compose.
Intentionality	Low	High
Participants	The process is based on the interaction among all participants in the activity.	Managed by the teacher. Usually one person leads the activity (not necessarily the teacher in the formal sense, but someone directs and organises the learning activity, for example, one of the musicians in the group). This position need not be fixed, although it usually is.
Leadership of the activity (who takes the decisions)	Open, self-regulated learning	Didactic teaching
Music community	Spontaneous process in which any of the group can participate. Role of the family.	Lack of making music in community, for friendship with peers
Sources of learning	Observation, copying, and imitation, as "osmosis." Learning to play by ear.	Learning to play from the score
Audition	Development of global ear. All parameters integrated. Listen to live music.	Molecular and independent parameters. Preponderance of pitch.
Motivation	Voluntary, self-regulated learning	There may sometimes be conflict and differences between teacher and learner motivation.
Evaluation	Scarce	Constant evaluation of own music and the music of the other people
Type of practice	Experimentation  Test trial and error. Taking more risks. Emphasise memorization and improvisation Sporadic and intensive sessions	Practical application of theoretical knowledge Progression. Concept of "error" to avoid. Emphasise analytical skills (related to use of the notation) Sessions on regular and constant basis

(teachers within the family), close to *guided repetition*. This suggests that in our current approach to their environment, we should allow them to express in their own words what learning is, because by providing multiple-choice answers, we might not be offering a choice that actually reflects their experience.

This kind of musical learning in an informal sphere might be deeply rooted in human phylogeny. Based on Donald's (1991, 1993) cognitive archaeology, the main strategies and learning mediators of the ancient *mimetic* mind would be bodily actions that turn into a culturally generated representation system. The representations are not only embodied in the body, but through it (Poza, 2003). The connections among music, language, and forms of expression related to rhythm and imitative behaviors suggest that the greatest leap in the process of humanization was indeed the creation of this mimetic culture, which, according to Molino (2000), was the moment when a group of hominids performed collective imitation activities, without language, accompanied by vocalizations (or protolanguage) and organized through rhythm. Evidence from current neuroimaging techniques links emotion and movement to music (Molnar-Szakacs & Overy, 2006) through the mirror neuron system as a mechanism allowing an individual to understand the meaning and intention of a communicative signal by automatically evoking a representation of it in the perceiver's own brain. It is a very efficient way of understanding. Mithen (2005) advocates that moment as the separation between two specialized systems: one communication system to express emotion (music) and another to transmit information (speech), which leads to different developments, as explained below.

A new system of representation was the symbolic language that gave rise to what Donald called the *symbolic* or *mythic* mind. Language allowed access to symbolic representations, which are explicit and have the potential to suspend this world and imagine other possible worlds. It was the moment when narrative songs emerged in social rituals, a form of transmission that is oral, but coordinated. However, this system of representation still remains trapped in the present time, to the extent that there is no permanent impression beyond the time at which it is being produced (Greenfield, 1972). Thus, oral culture, as accumulated knowledge, is something to be preserved and imitated, not something that can be redescribed in each generation (Olson, 1994). A further step was the connections between development of speech and hand manipulation established by Greenfield (1991), which considers elements of mimetics with symbolic culture. Writing and notational systems, which are less than 5,000 years old, are externalized representations and become external objects of representation, which Donald calls "symbolic technologies" of the *theoretical* mind.

Notation made possible new ways of knowing, inextricably linked to technologies that would develop into a new society of knowledge. Musical notation emerged parallel to verbal language, with a slight lag, creating not only the capabilities described but also the dissociation of the body from music and the emergence of different kinds of practice (López-Iñiguez, Casas-Mas, & Poza, 2012). According to Lave (2011), this may cause a hegemonic domination of schooling, where learners and places of learning are sequestered from other activities and locations while attempting to manage symbolic and theoretical knowledge, for example, playing scores instead of producing sound through emotion. This makes the concept of "learning transfer" vital in justifying the institutional arrangements of schooling. Liberian children at school were presumed not to have had any schooling in arithmetic, ignoring the role that learning math played in their apprenticeship as tailors in their everyday lives (Lave, 2011).

We may thus imagine that different cultures located along a continuum from informal to more formal education could lead to the construction of different minds across different explicit representational systems. We are not referring to some communication systems being more evolved than others according to the order in which they appeared historically, but to different forms of communication, such as mimesis inherently linked to music (Mithen, 2005), or written language, which is linked to many other facets of human knowledge. Learners of music are not free from the impact of using written language in certain ways that inhibit their primary mimetic communication. As far back as 1997, Olson established differences in hemispheric dominance for verbal sounds and natural sounds between Japanese and Western populations according to their cultural patterns. We want to go a step further by involving gesture through the domain of music (López-Iñiguez et al., 2012). This idea will be the core focus of this article, to describe forms of musical

learning that we consider culturally contrasting (classical, flamenco, and jazz) regarding access to and use of external representations.

In this study, we shall refer to different *cultures of learning* (Renshaw, 2007) where the learner is immersed in a process of establishing social bonds with peers and teachers, accepting certain common practices as personal routines and living habits, and adopting and adapting available identities and discourse within the community in specific chronotopes. Thus, a formal context of Western classical music transmitted in the academic culture could be represented by the *Classical* culture of learning, the non-formal learning of popular music could be represented by the *Jazz* culture of learning, and the informal learning of popular music could be represented by the *Flamenco* culture of learning. Flamenco and classical music represent the poles of the informal–formal continuum. Jazz is in an intermediate position that we shall call non-formal and define as using procedures or instances that break one or more formal rules. We shall explain below why we used this classification in the cultures of learning selected for this study.

In Spain today, there are at least three different musical cultures of learning, in terms of formal and informal realms. This provides a great opportunity to compare the highly formal context of classical music with two other cultures of popular music (jazz and flamenco), which in turn differ subtly from each other. This may be a historical opportunity for this observation, because the traditional formats—which offer valuable learning profiles—tend to merge or disappear with globalization. Our aim is therefore to explore simultaneously the educational beliefs in classical music, flamenco, and jazz, which may allow us to determine whether there are any differences in the conceptions that music learners advocate in educational situations.

### *Classical Culture of Learning*

One of the features of the classical culture in this study is that it takes place in specifically designed settings, such as the conservatory *Real Conservatorio Superior de Música*, where teachers have undergone a specific selection process. There is a curriculum of artistic teaching issued by the National Government and the Autonomous Community of Madrid (Decree 36/2011; Royal Decree 631/2010), which includes classical repertoire (in all its styles) with traditional sheet music. This provides a wide range of cultural *explicitation*, or awareness of the elements learned, which are expressed through external representation systems such as musical notation. This culture, in theory at least, aims to generate learner autonomy. Activities are organized in weekly one-to-one and group classes, in addition to auditions, which are primarily individual, and exams, such as those at the end of the course, leading to the award of an official degree. This is what we have defined as *formal* context.

### *Flamenco Culture of Learning*

At the opposite end of the continuum is the flamenco culture of learning, for which we focus on participants of Roma ethnicity. If conceptions and beliefs are culturally built, we need to observe communities in which the differences go beyond musical differences, such as may be true of the Roma community. Conceptions would be constructed socially through everyday interaction, not only in the domain of music, although this is where we will observe them. Our previous studies found that the discourse of Roma musicians reflects values that differ significantly from those of non-Roma flamenco musicians (Casas-Mas, 2013). The flamenco culture does not use educational institutions but relies on personal pedagogical projects at private academies or the teacher's home. The teacher is a reference figure due to his career and has not undergone any kind of selective test. Teachers are usually the most experienced members of the family (both close and distant), whom learners often call “uncle.” This culture is based on close dependence of the learner and mimesis of procedures, knowledge, and values.

Although semi-professional-level learners (adolescents and young adults) in this context are supervised by teachers, they also have a significant background of musical learning at home (Howe & Sloboda, 1991), which is not limited to the instrument, but involves more global learning (percussion, singing, and dancing). Participants also practice many hours a day in a family setting and with peers, during which they exchange exercises, *falsetas* (variations), and pieces learned from teachers, or which they have composed. Nowadays, they often use video-audio recordings, particularly on mobile phones, but no notation whatsoever. There is no exam or specific accreditation. We define this prior learner background as the *informal* context.

### *Jazz Culture of Learning*

Jazz and flamenco are both popular music, but there are significant differences in their social settings. Jazz in Spain is usually still taught at private schools that award their own degrees (not officially recognized). Even in institutional settings, jazz teaching also includes non-formal or informal learning structures such as jam sessions, at which learners listen to performers in a natural setting (at clubs), and can approach the stage (usually at the same level as the audience) and take part by playing when they feel the urge to do so. This kind of session is usually held on a weekly basis and provides an opportunity for playing with professional musicians, social enjoyment, and learning. Academic jazz teaching currently uses the original methods of schools such as Berklee College, believed to ensure educational quality. Students mainly play standards in which the melody is written in traditional notation and the harmony in chord symbol notation (chart), so that the learner has an outline of the piece from the beginning.

Thus, one of the main differences among these three cultures, in which we are especially interested, is the way in which they regulate the music learning processes.

### **Culture of Musical Learning and Self-Regulation**

We shall now discuss the relationship between the learning culture and the regulation of the learning process. Several authors (e.g., Schippers, 2010; Turkenburg, 1999) have argued that in popular music, the teacher is replaced by self-learning and peer learning formats. Turkenburg (1999) puts the case of jazz as a type of popular music where the role of the teacher serves as an example of one possible way of doing things, but not the only way. The strict canon typical of classical music of Western European tradition is absent from popular music, making it difficult to define the role of the teacher figure. This enhances the activity in the role of learners, which is what we propose to explore in depth here.

Although it is true that jazz teaching currently includes approaches ranging from highly targeted to self-motivated exploratory formats, it seems to be based on an educational philosophy, according to its historical origins and evolution. Could it be said that the jazz culture of learning includes the same elements as any other popular culture where improvisation plays a central role? This question is the reason why we are interested in the cultural representations shared by many learners in a specific learning community. The most common representations in a certain group are generalized in an “epidemiological” way (Sperber, 2005), between cultural and flexible individual boundaries. It is interesting to look at the systems of representation and how they are conveyed to the members who join the society (Casas & Pozo, 2008), as well as to observe the relationships with different systems of representation in other cultures of learning.

To approach these shared representations, we turn to the theoretical framework of conceptions, suggested by Olson and Bruner (1996). They propose four models that represent not only conceptions regarding culture and the relationship between minds and culture, but also mental concepts and beliefs about teaching and learning. These models allow us to understand the ways in which people construct meanings about learning and teaching in relation to specific domains

**Table 2.** Elements of the Teaching–Learning Process in Relation to Culturally Configured Implicit Theories.

Concept of learner	What is acquired	Ability to	Role of teacher	Role of learner	Concept of teacher	Implicit theory
Doer	Skill/ability	Do	Demonstration	Imitation	Craftsperson	Direct
Knower	Knowledge	Learn	Exponent	Comprehension	Authority	Interpretative
Thinker	Beliefs	Think	Collaborator	Interpretation	Colleague	(Postmodern)
Expert	“Interactive” subject-object, and expert knowledge	Contribute to cultural store	Information manager	Knowledge constructor	Consultant	Constructive

Source. Adapted from Olson and Bruner (1996) and Pérez Echeverría, Mateos, Pozo, and Scheuer (2001).

of knowledge. Several authors (Bautista, Pérez Echeverría, & Pozo, 2010; Scheuer, de la Cruz, & Pozo, 2002; Scheuer, de la Cruz, Pozo, Huarte, & Sola, 2006) interpret these conceptions in terms of different implicit theories, which are manifested in the speech of participants in educational situations. Table 2 shows the different ways in which knowledge is assumed according to the concept of learner held, which is deeply entwined with implicit theories of learning. This reflects the way the learning process is configured within each culture, which may be closer to conceptions related either to realism or to constructive perspectivism.

The conception of the learner as a *doer* relies on the assumption that the learner's mind is like a *blank slate*. The teacher demonstrates his or her own knowledge as a craftsperson and encourages the student to imitate it. This conception of direct learning, defined by other authors (e.g., Graf et al., 2013; Tomasello, 1999), refers to the process of imitation as a universal learning tool and appears very early in childhood, in different cultural settings and in a variety of domains of knowledge, including music (López-Íñiguez & Pozo, 2014a; Marín, Pérez Echeverría, & Scheuer, 2013).

Another way of conceiving the learner is as *knower*, where the teacher believes that a number of psychological processes such as attention and motivation occur in the learner's mind. However, the teacher usually requires the student to produce a faithful replication of the teacher's knowledge, which is expressed through explanation and declarative knowledge. These processes will have an impact on the learning objectives, and could thus be assimilated into the interpretative theory of learning. Learners and teachers across educational levels (from primary to university education) and learning domains (science, art, literacy, etc.) have been found to express this kind of implicit theory (Pozo, Scheuer, Mateos, & Pérez Echeverría, 2006).

Conceiving the learner as a *thinker* and as an *expert* involves a conceptual shift from the direct and interpretative implicit theories. The student's recreation of reality and knowledge is what makes learning possible. The role of the student is therefore active. A constructive thinker needs to learn to regulate and manage his or her own cognitive and motor processes, reaching a compromise between personal knowledge and culturally accumulated knowledge, for which the teacher is a mediator, that is, to build a personal representation of the music played and composed without leaving aside the surrounding culture. The teacher guides and monitors the student's reflective, metacognitive, emotional, and affective processes to promote understanding and autonomy. This will allow the learner to develop an expert role, in the words of Olson and Bruner (1996), in agreement with the views expressed by other authors for the constructive theory (e.g., Pozo & Gómez Crespo, 2005).

Finally, another factor to contemplate is domain specificity. Some studies (Kember, 2001; Klatter, Lodewijks, & Aarnoutse, 2001; Peterson & Irving, 2008) describe the levels of consistency of students' conceptions from the end of primary school to university level in different educational settings. The idea proposed by Entwistle (2007) as representational multiplicity refers to the fact that the restrictions of a particular scenario can lead to different representations. Thus, conceptions of learning and teaching may comprise a set of situated (contextualized) ideas, based on different assumptions, forming "hybrid" profiles, as shown by Martín, Pozo, Mateos, Martín, and Pérez Echeverría (2012). Further studies are needed on the differences generated by various components—such as teaching, learning, and evaluation of music—on the conceptions of learners in different cultures of learning and contexts. Casas-Mas, Pozo, and Montero (2014) also observed that participants maintained cultural coherence throughout the components of teaching, learning, and evaluation. In addition, we have explained how teaching and learning are described differently in cultures of learning that use musical notation (classical and jazz) and those that do not (flamenco). The aim of this article is to explore this variety of learning cultures in the context of fairly advanced musical training, using a descriptive first-person perspective of semi-professional guitarists in response to open questions. By being situated in Spain, the study enabled access to three cultures of musical learning, which are located at different points along the continuum of learning and teaching music between the informal and formal poles. As mentioned earlier, this article thus builds on the previous one (Casas-Mas, Pozo, & Montero, 2014),



**Table 3.** Summary of Cultural Profiles Based on the Results of a Selection of Answers to the Multiple-Choice Questions (Casas-Mas, Pozo, & Montero, 2014).

	Flamenco	Jazz	Classical
Locus of control	Heteronomous: Teacher chooses pieces	Autonomous: Student chooses pieces	Autonomous: Student chooses pieces
Role of the teacher	Correct the student as soon as possible	Focus on the interests and abilities of students	Make the student think about why he does well, how he has studied, what he can focus on now
Strategies for learning and memorizing	Copy and segment the material	Understand the parts of the piece and the relationship between chords	Have a global idea of the piece by singing and clapping

where the same participants' choices facing multiple-choice questions showed different patterns, basically among learners from a flamenco culture belonging to Roma ethnicity compared with classical and jazz learners (Table 3). Learners of flamenco culture of learning opted for a teaching-learning format, which is externally regulated and based on copying. Learners belonging to classical culture opted for student self-regulation, and, at the midpoint, jazz learners argued that the teacher should focus on the student's interests and skills, although they do not grant learners the same degree of choice as classical teachers do.

With regard to the psychological processes of learning, flamenco learners chose options proposing memorization of pieces by repeating fragments and then repeating the entire piece from beginning to end. Classical learners preferred options stating memorization of pieces by singing and clapping, to capture the meaning and the whole idea. For the benefit of the process of motivation, classical students preferred options in which the teacher gets the student to think about his or her own learning process. Jazz students chose statements describing memorization of the pieces by understanding the parts of the structure and the relationship among chords. Both classical and jazz learners chose ways of learning including highly analytical processes, whereas flamenco learners focused on gestures and oral transmission. They prioritized the replication of efficient models to ensure the preservation of flamenco, particularly in teaching.

## Aims

The overall aims of this study are to understand the conceptions of musical learning expressed by semi-professional musicians and to establish whether such conceptions are related to the culture of musical learning in which they are being educated. The specific aims are related to the three components of learning, that is, how musicians conceive teaching, learning, and evaluation, to compare the consistencies of profiles across cultures of learning (classical, flamenco, and jazz; CL, FL, and JZ, respectively). We established questions for each component:

- Teaching: How do learners describe the figure of a good teacher? What features and functions does the teacher fulfill in their learning?
- Learning: How do students learn when they approach a new piece? What memory processes do they use, and how do they use them? What are their learning difficulties, and how do they manage them?
- Evaluation: What are the values and characteristics of what each culture considers good musical performance?

We will now describe the research method that contrasts these questions.

## Method

### Participants

The participants were 31 guitarists at a semi-professional stage of learning who had educational and semi-professional experience in only one of the cultures of musical learning considered in this study. Ten participants are from the classical culture of learning (5 male, 5 female), aged 19 to 29 years ( $M = 24.9$ ;  $SD = 3.48$ ), have spent more than 10 years studying music in formal realms such as the conservatory, and are studying for a tertiary degree (equivalent to a bachelor of music degree) or master of music studies. They also have pre-university or university studies, and most of their families have some relationship with amateur music. Eleven participants are from the flamenco culture of learning (11 male),<sup>1</sup> aged 15 to 25 years ( $M = 16.82$ ;  $SD = 2.96$ ), all of Roma ethnicity, and most have not completed compulsory secondary education. They have been studying the guitar for 1 to 5 years with a specific teacher. There are professional musicians in all their families. Ten participants are from the jazz culture of learning (9 male, 1 female), aged 26 to 42 years ( $M = 29.6$ ;  $SD = 4.93$ ), with a college degree in non-musical studies, and most have studied for a professional degree in music (prior to tertiary studies). Their families have no relation to learning music.

Within the independent variable (IV), *culture of musical learning* (“Culture” for short), the participants were required to have a similar level of practical skill in all three cultures, which we define as semi-professional level, so that they would have considerable qualitative enculturation while still fulfilling the role of apprentices. This made it easier for us to access learning processes than if we had interviewed experts, in whom learning is usually automated and not explicitly accessible. We also compared musical learning practices in the three cultures of learning among musicians with a similar level of expertise (Casas-Mas, López-Íñiguez, Pozo, & Montero, 2013; Casas-Mas, Montero, & Pozo, 2014; Casas-Mas & Pozo, 2012). The variable “culture of learning” at this level of expertise thus conditions the other aspects such as the age of participants, or their formal schooling degrees, providing a wealth of information on the goals and means of these learning cultures.

### Instrument and Procedure

We adapted the questionnaire developed by Bautista, Pérez Echeverría, Pozo, and Brizuela (2012), originally designed for exploring the conceptions of piano learners in terms of implicit learning theories (direct, interpretative, and constructive). It contains multiple-choice questions on the three components of learning (teaching, learning, and evaluation). Each question has three response options, which represent each of the three main conceptions of learning. We adapted the questionnaire in three ways: the instrument (guitar), the verbal modality (oral rather than written), and by including an open-ended question in each situation before providing the three multiple-choice options. Participants’ answers to the 17 multiple-choice questions were thoroughly analyzed in the first study, to which the reader may refer for further information: Casas-Mas, Pozo, and Montero (2014). In the present study, we focus on the analysis of the answers to three open-ended questions, each focusing on a learning component. Table 4 reports these questions, grouped by component.

For the teaching component, the students were asked what the best teachers are like. The answers provide valuable information about what they consider to be their own learning needs in educational contexts. For the learning processes, we asked how they go about learning a new piece, the kind of difficulties encountered, and how they memorize a piece. Owing to the close thematic relationship between these three questions, we analyzed the answers together. For evaluation, we asked how learners recognize the achievement of good performance. By the nature of the question, it is an evaluation of their own execution.

**Table 4.** Open-Ended Oral Questions Selected for This Study, According to the Components of Teaching, Learning, and Evaluation.

Learning component	Subject	Question
Teaching	1. Best teachers	Musicians often talk about what the best guitar teachers are like. What do you think? Why?
Learning	2a. Approach to new piece	What do you think guitar players do first when they start learning a new piece?
	2b. Learning difficulties	Paco, a guitarist, takes considerable time studying the same pieces. However, most of them still do not go well because of difficulties. Why do you think this happens?
	2c. Learning by heart	How do guitarists memorize musical pieces? What do you consider is the best way?
Evaluation	2. Achieving good performance	How does a student realize that the piece he is playing is right?

We applied the lexicometrical analysis method (Lebart, Salem, & Bécue-Bertaut, 2000) to the full transcript of the answers from the 31 participants to the three questions in Table 4 (with SPAD Recherche 5.6). This method has been effective for analyzing open oral responses (Bécue, Lebart, & Rajadell, 1992) and inferring conceptions of the process of acquisition and knowledge transfer in both children and adults in specific fields of learning (Baccalá & de la Cruz, 2000; Scheuer et al., 2002; Scheuer, de la Cruz, Pozo, Echenique, & Márquez, 2009) and recently in the field of learning and teaching music (López-Íñiguez & Pozo, 2014b; Marín et al., 2013). The lexicometrical procedure enables us to determine the most representative answers from participants according to statistical criteria and provides more inductive access to the participant's actual discourse than would certain types of content analysis in which the categories are set by the researchers' theoretical framework, leading to circular reasoning. This method provides access to the participant's actual words, exactly as he or she states them in context of meaning, and through "progressive spiraling" analysis (a term used by Baccalá, de la Cruz, & Scheuer, 2002). It helps to fine-tune our initial theoretical assumptions to the empirical evidence, which can show trends enabling the subsequent creation of well-defined categories of analysis, patterns of interaction or individual behaviors. These are the reasons why this method is widely used nowadays in social sciences (see Balbi & Stawinoga, 2014; Zarrouk, Lafourcade, & Joubert, 2014).

Because the results of this type of computational analysis are obtained from ostensible verbal elements or explicit production, they may at first sight appear trivial and easy to establish. Nevertheless, it enables more in-depth analysis than would have been possible by simple observation (López-Íñiguez & Pozo, 2014b). For each question, we apply a two-step analysis, which we shall describe in detail, because lexicometry has not often been used in research into cultural psychology (for an in-depth description, see Bécue-Bertaut, 2008); Bécue-Bertaut & Lebart 2000; & Lebart & Salem, 1998).

*Correspondence analysis (CA) of the lexical table.* The aims of this step are (a) to assess statistically significant ( $p < .05$ ) lexical differences in participants' responses to each question according to the culture of musical learning in which they are being educated and (b) to identify groups or associations between word use and cultures of musical learning. First, we performed the CAs on the lexical tables. The basic component of CA analysis is a lexical table or contingency table in which the rows correspond to all participants (in our case, the 31 guitarists) and the columns

correspond to the different words that appear more than a preset number of times (or frequency *threshold*) in the *corpus*. There are cells informing the number of times each word appeared in each participant's response. We applied thresholds between 4 and 8, depending on the length of the corpus for each question. Another column in the table reports for each participant the culture of musical learning to which he or she belongs.

In all these CAs, active variables were "participant" and "word." "Culture" was regarded as illustrative variable. To establish lexical differences in the responses of the participants according to their culture of musical learning, the test value that each of the cultures of musical learning obtained in the first factorial axes is considered. When test value  $\geq 2$ , the null hypothesis (which states an absence of lexical differentiation for different cultures considered) is rejected ( $p < .05$ ). In CA, the first factorial axis captures the greatest variability in the responses, and the following axes capture residual aspects of this variability. The factor axes that precede a sharp decline in the percentage of explained inertia are the ones taken into account to analyze the results. On this basis, we will only select Axes 1 and 2. The projection of the participants, words, and cultures on factorial planes (formed by two axes) depicts the distances and proximities among their lexical preferences. To facilitate reading of the planes, each plane is shown in two ways: First, we only show the projection of the participants in relation to the three cultures. Then, we only show the projection of words and cultures.

*Qualitative description of the content and form of the typical responses to each culture.* Once statistically significant lexical differences were found between participant responses according to their culture of musical learning, with the aim of furthering our understanding of the lexicon of each culture, we applied another lexicometric procedure, the automatic selection of modal responses (ASMR). ASMR allows the most typical original responses of each part of the corpus to be identified (in our study, the three music cultures). This procedure calculates the distance between the lexical profile of each response and the lexical profile average of that part (or culture), according to the statistical distance  $\chi^2$ . Thus, the first order response is that closest to the center of gravity of that portion of the corpus, the second is the next, and so on. We present participants in order from the highest to the lowest  $\chi^2$ , and only whose  $\chi^2$  score precedes a sharp decline in the score, which would be the most representative discourses of that culture.

Modal responses are not artificial summaries by category of participants (in our study, their culture of musical learning), but authentic answers that have been computationally selected thanks to their representative character in that category (see Lebart et al., 2000). A single research protocol is not sufficient to summarize all the information produced, so the most typical modal explanations for each text are considered. It is thus possible to infer the meaning of a lexical group in the context where texts were originally produced and describe the most typical characteristics of each group qualitatively (Scheuer, de la Cruz, Pedrazzini, Iparraguirre, & Pozo, 2011). The two-stage process was conducted using the WinSPAD data analysis software Version 5.5, selected for its qualitative characteristics.

## Results

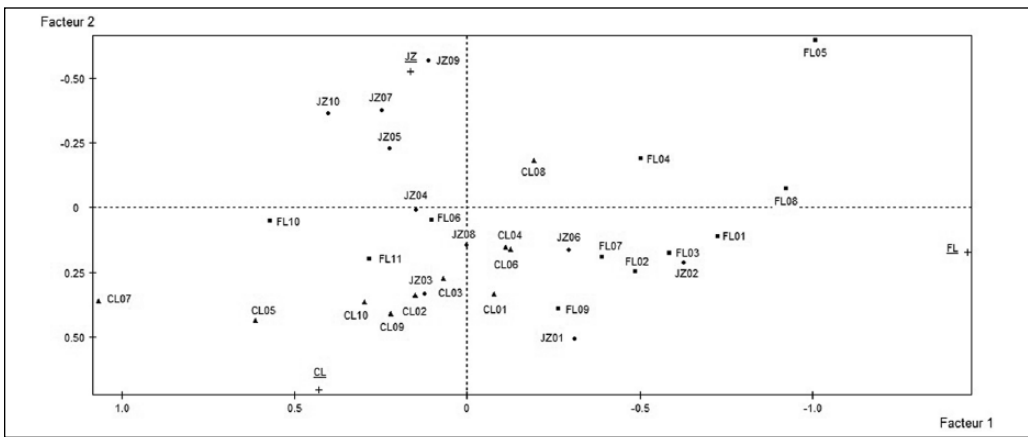
The results of the three CAs applied to the lexical tables for the three components of learning have highlighted statistically significant lexical differences ( $p < .05$ ) for the three cultures (Table 5). Flamenco is the only culture that shows a characteristic lexicon on the first factorial axis for all questions. This indicates that its musical lexicon presents the most distinctive features across the three cultures analyzed. The lexicon of jazz in the evaluation component and the lexicon of the classics in the learning component also appear as statistically distinct on the first axis.

Next, we show the results of the two steps of lexicometric analysis for each of the three components of learning: teaching, learning, and evaluation.

**Table 5.** Test Values According to Culture Modality (CL, FL, or JZ) on the Selected Components of the CA.

		Axis 1			Axis 2		
		CL	JZ	FL	CL	JZ	FL
Teaching	Best teachers	1.6	0.6	-5.9*	2.7*	-2.0*	0.7
Learning	Approach to a new piece, difficulties, and memory	-2.03*	-1.76	5.65*	-3.26*	2.2*	-0.21
Evaluation	Achieving good performance	0.29	2.21*	3.93*	-3.53*	0.49	2.9*

Note. Test value: distance, in terms of number of standard deviations, from each modality of “Culture” to the center of gravity on the component  $\alpha$ . CL = classical; FL = flamenco; JZ = jazz; CA = correspondence analysis.  
\* $p < .05$ .



**Figure 1.** Projection of participants and modalities of the variable “Culture” (CL, FL, and JZ) in the question about *what the best teachers are like*.

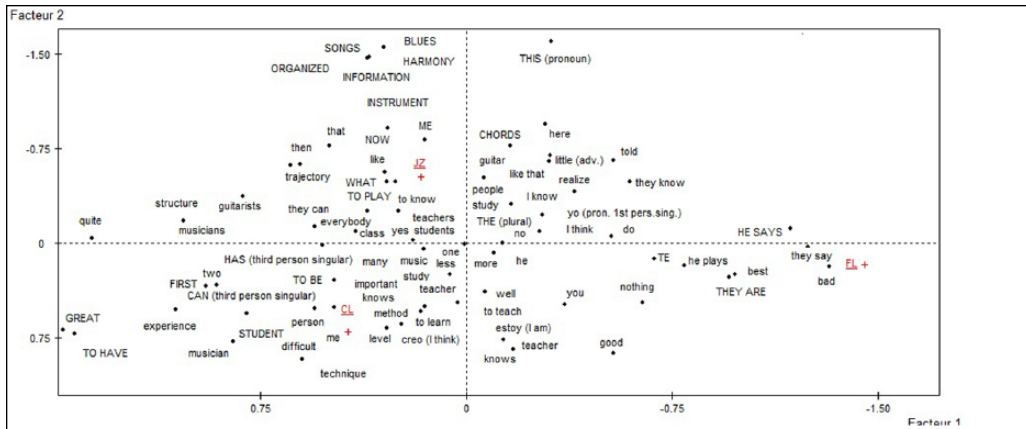
Note. CL = classical; FL = flamenco; JZ = jazz.

### Teaching: What Good Teachers Are Like

*CA of the lexical table.* Figure 1 shows the projection of the 31 participants and the three cultures on the factorial plane formed by Axes 1 and 2. Axis 1 (Factor 1) contrasts the flamenco culture to the jazz and classical cultures, whereas Axis 2 (Factor 2) contrasts the latter two. When they explain and describe the qualities and competencies attributed to a teacher considered the “best,” the lexicons used by participants from classical and jazz cultures are closer to each other than to the lexicon used by participants from flamenco culture. Figure 2 shows the projection on the same factorial plane of the words and the gravity centers of the three cultures for this question about what the best teachers are like. We distinguish three main lexical groups, each of which is illustrated by a learning culture:

*Group A:* Located in the lower left quadrant (Figure 2), formed mainly by the following words: *can (third person singular), first, great, has (third person singular), student, to be, to have*. It is associated to classical culture.

*Group B:* Located in the lower right quadrant and part of the upper right, formed mainly by the following words: *he says, te (second person singular form of reflexive pronoun), teacher’s name, the (plural), they are*. It is associated to flamenco culture.



**Figure 2.** Projection of words and modalities of the variable “Culture” (CL, FL, and JZ) in the question about *what the best teachers are like*.

Note. Capitalized words have above-average contribution. CL = classical; FL = flamenco; JZ = jazz.

*Group C*: Located in the upper left quadrant and part of the upper right, formed mainly by the words *blues*, *chords*, *harmony*, *information*, *instrument*, *now*, *songs*, *this* (masc. pronoun), *me* (*pers. pronoun*), *organized*, *what*, and *to play*. It is associated to jazz culture.

*Modal responses (ASMR). Qualitative description of content and form.* We provide a qualitative description of the most typical responses from the guitarists in the culture of learning associated with each lexical group for the question about the best teachers. Next, we describe some typical fragments of the verbatim text responses, mentioning the participant with his corresponding  $\chi^2$  between parentheses, which nests in typicality.

*Classical culture of learning (which illustrates the A group).* The words *student* and *learn* appear in this quadrant. These words are accompanied by others related to individuality, such as *me* (*pron. loc. adv.*), *I think*, and *person*. It is an approach that does not require the teacher to correct and provide detailed explanation, but focuses on learner individuality. Participants specify the dual role of performing musicians with teaching experience.

First, he must have played well when he was young, as a soloist. And second, as a teacher, he should be open to the possibilities and differences of each student, consider that each student has different possibilities. He should identify each student’s special talents, what each student has, then work on and develop each student’s talent. (Participant CL07,  $\chi^2 = 0.56$ )

... there may even be three types of teacher, I would say that one type is the musician, meaning a great musician, then another is the great person, and then best of all I think is the combination of musician and person; because I’ve worked with teachers who are great musicians, but seem to be lacking as persons. Someone can be a great musician but not know how to teach ... for me the best is the combination of musician and person-pedagogue. (Participant CL05,  $\chi^2 = 0.36$ )

Furthermore, we see that this right hemiplane is oriented toward issues focusing on *experience*, *level*, *study*, *method*, and *technique*, of which the participants describe the aim, and the use of words that nest as *one*, *two*, *more*, *less*, *important*, and *difficult*. Here, we find two indicators of what could be defined as explicit and analytical discourse.

. . . each person looks for different things in each teacher, one teacher may transmit to you the things that he already has and knows . . . , and if you have that teacher you can solve your technical problems, but he may not speak at all about music, about how to interpret a piece, about giving you many musical ideas, stimulating you regarding . . . squeezing your mind, to get more substance out of the music and to encourage you to listen to more music. So I think a good guitar teacher has both, that is, he has acquired technique; technique is a means to get to the music, to teach. (Participant CL01,  $\chi^2 = 0.30$ )

*Flamenco culture of learning (which illustrates the B group).* As in the classical culture of learning, the teacher is a benchmark figure of authority and respect. However, the flamenco culture emphasizes this figure by mentioning his name and the word *teach*, the importance of accurate, direct instruction, and the judgment made on the student. This can be interpreted as describing the other-regulation of the learner by the teacher.

So, they are the ones who know best how to explain, right? . . . and the ones who explain in the simplest way, the ones who express it best; . . . like “put your little finger on D#,” . . . The Teacher says to you, “your little finger a little higher here in this fret,” so they put it very simply, very clearly. (Participant FL05,  $\chi^2 = 1.17$ )

. . . They are the ones who tell you things like they are, if they say “you play badly, you have to study,” these are the ones from whom you learn the truth, not those who tell you, no, you play well but you should play a little better, you should do this . . . (Participant FL08,  $\chi^2 = 0.94$ )

In addition, participants refer to emotion in that one-way process (teacher to student).

. . . No, tell me direct things, even though it hurts. I know, with the same pain, that I will do, I know I’m going to do things three times better . . . It’s better that they tell you things clearly, it’s like the Maestro, the Maestro told you things clearly, didn’t mince words, or talk nonsense. If he catches you when you’re feeling low, well, yes, but when you went to the academy you would be motivated, at least I was. (Participant FL08,  $\chi^2 = 0.94$ )

They use comparative, such as *better*, *best*, and *most*, in relation to the fact that a third person plays, mainly the teacher. This does not happen in the other two cultures.

For me the best is the Maestro, I believe that he was born with it and is professional in his profession, you know, and he does it with love. (Participant FL03,  $\chi^2 = 0.82$ )

This idea is reinforced by concerns about external judgments, especially from the family environment. In relation to what we discussed earlier about the verbal mind, we can observe words such as *they say* and adjectives such as *well*, *good*, *nothing*, and *wrong*.

A good teacher is one who doesn’t care if a parent says the child doesn’t know how to play, because that teacher knows he is doing his job, which is to teach the foundations; without the foundations, a building falls down fast . . . there are teachers, I suppose, who want the child to play something that is brilliant, like classical. Good teachers, no matter what anybody says, what parents say, which may be that they think that the child isn’t playing a pretty tune, but practising this. After all, this is practice, even if it sounds a little melodic, but it is no song, it is nothing. They [good teachers] are the ones who do that, and teach the boy that, [who] provide a good foundation. (Participant FL02,  $\chi^2 = 0.73$ )

*Jazz culture of learning (which illustrates the C group).* In the jazz cultures, we get the idea of the importance of the material or information provided by the teacher in a systematic and orderly

manner, which he or she describes in a sequenced (analytical) manner in his or her speech. He or she speaks much of the specificity of jazz.

. . . to be a teacher, it is good to have more or less systematically studied and to have had many students, I think, also experience in that regard. . . . I think beyond the fact that I may like them more as teachers than as musicians, but [it is good] that they are musicians themselves, playing from time to time, that they have their musical activity. (Participant JZ10,  $\chi^2 = 0.80$ )

. . . the first is that he has to be orderly in what it teaches you, because in jazz . . . there are too many musicians who think they can play jazz, so they teach and engage students at the same time, because it is essential that he be clear. . . . Second, the jazz teacher has to teach jazz, jazz music. He has to force you to listen to jazz, because jazz is a language, a way of playing and he has to force you to know that language. (Participant JZ07,  $\chi^2 = 0.54$ )

They also mention the complexity of the musical style as well as the idiosyncrasies of improvisational training and allusions to emotion.

. . . what happens is that jazz teachers don't usually teach beginners who don't even know how to hold the instrument, because it's a very complex genre, . . . and you have to study a bit of harmony, . . . scales, and you'll learn the Dorian and Mixolydian mode, but you'll see how they really apply to that structure which is jazz and not simply isolated scales, [the teacher] has to be orderly, go slowly, not give a lot of information, but choose a topic, explain and develop it to the fullest before going on to the next topic. (Participant JZ09,  $\chi^2 = 0.48$ )

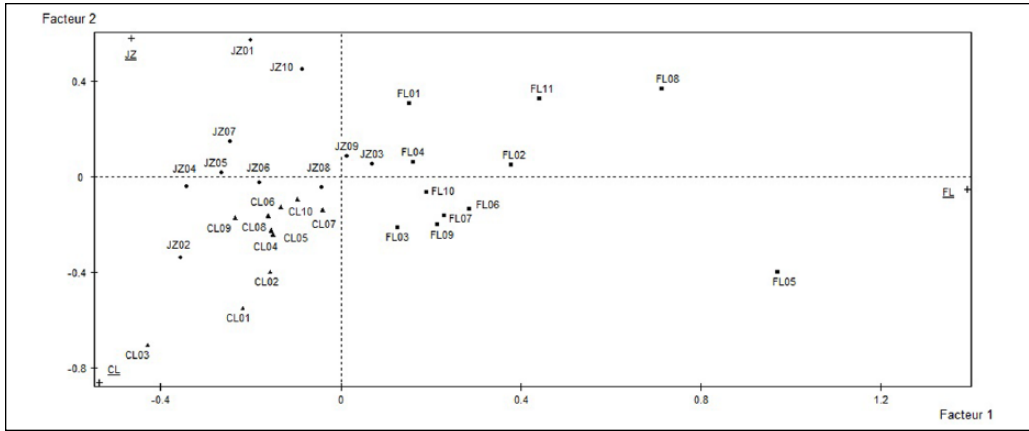
. . . and then also, apart from telling you about music theory, he also has to teach a little about the improvisation side of jazz, which is a bit like letting yourself be carried away by playing, right? Kind of a feeling that not everybody has, . . . my first music teacher did not have as much information as other teachers, but he taught me that side of jazz; how he tried to improvise and that improvisation was a language that made sense when playing and that's the most intuitive side, right? Convey to students and encourage them to try, when you're improvising, telling something with some feeling. (Participant JZ05,  $\chi^2 = 0.35$ )

The content expressed in their speech seems to be more related to the tools that enable learner autonomy and self-regulation. Thus, we see the emergence of words that may be relevant such as *like* and *then*, which could be related to *me* (and *I*) and *now*, respectively. There are words associated with individuality such as *I know* and *me*, with music and the group, such as *guitarist*, *people*, *musicians*, and with processes, such as *study*, *aware of*, *think*, and *learn*. They explicitly move through the processes of individual and collective learning.

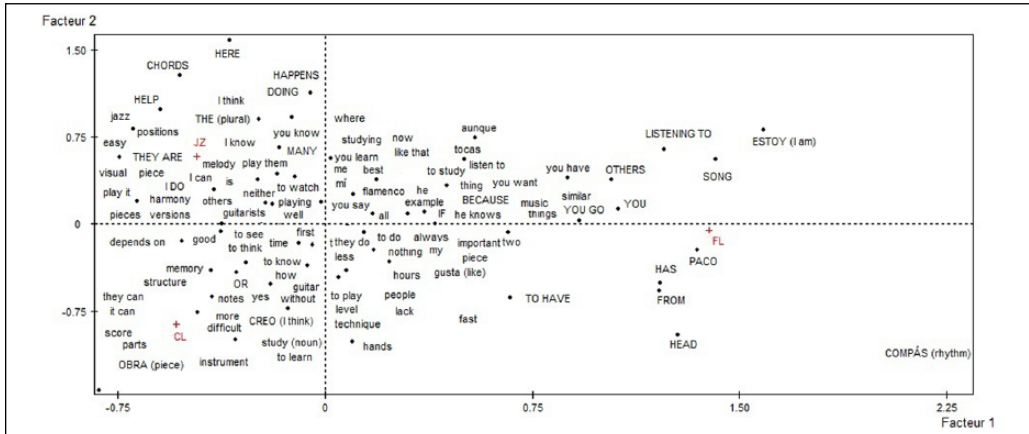
### **Learning: Approaching a New Piece, Difficulties, and Memory**

*CA of the lexical table.* First, Figure 3 shows the projection of 31 participants and three cultures on the factorial plane formed by Axes 1 and 2. Axis 1 (Factor 1) again contrasts the flamenco culture to the jazz and classical cultures, whereas Axis 2 (Factor 2) contrasts the latter two. This distribution indicates that when participants from classical and jazz cultures explain and describe the learning processes, that is, approach to a new song, memory, and difficulties, the lexicons they use are closer to each other than to the lexicon used by participants from flamenco culture. Figure 4 shows the words as projected on the factorial axes of the plane and in relation to the gravity centers of the three cultures in response to this question. We distinguish three main lexical groups, each of which is illustrated by a learning culture:





**Figure 3.** Projection of participants and modalities of the variable “Culture” (CL, FL, and JZ) in the question about the *learning processes*.  
 Note. CL = classical; FL = flamenco; JZ = jazz.



**Figure 4.** Projection of words and modalities of the variable “Culture” (CL, FL, and JZ) in the question about the *learning processes*.  
 Note. Capitalized words have above-average contribution. CL = classical; FL = flamenco; JZ = jazz.

- Group A: Located in the lower left quadrant, formed mainly by the words *Creo (I think)*, *or*, and *piece*. It is associated to classical culture.
- Group B: Located in the lower right quadrant and part of the upper right, formed mainly by the following words: *because*, *compás (rhythm)*, *estoy (I am)*, *from*, *has*, *head*, *if*, *listening to*, *others*, *Paco (name of the famous flamenco guitarist)*, *song*, *to have*, *you*, *you go*. It is associated to flamenco culture.
- Group C: Located in the upper left quadrant and part of the upper right, formed mainly by the following words: *chords*, *doing*, *happens*, *here*, *help*, *I do*, *many*, *no*, *the (plural)*, *they are*. It is associated to jazz culture.

*Modal responses (ASMR). Qualitative description of content and form.* Here, we describe the learning processes in each of the three cultures.

*Classical culture of learning (which illustrates the A group).* Apprentices from classical culture tend to use some organizing words such as *first* and *then*, and comparative words such as *more* and *less*. We comment on the content as they respond to (a) the approach to a new piece, (b) their learning difficulties, and (c) the methods of memorizing the musical pieces.

a. *On learning a new piece.* The learners say that they begin with the score, by analyzing or looking at what elements occur, without playing the instrument.

When I receive a new piece I look, without the guitar, at what is happening in the piece, yes, review the piece without the guitar and then try to read the piece slowly, calmly, with guitar and start to find the goals, I'm not going play the whole piece the first day, I'll do fingering, yeah. (Participant CL03,  $\chi^2 = 1.04$ )

They express the gap between their concept about what would be the ideal way to start, listening to versions, analysis, visualizations, and so on, and what they do in practice, which is to read at first sight with the instrument playing note by note, although they are aware that this second option is, in the long term, less productive.

We want to play the whole piece at once. No, I don't know, we also listen to it first, we look for it. We look for other versions to listen to, and then to study it, we read it and try to play it. (Participant CL02,  $\chi^2 = 0.52$ )

Work on the score, I mean use the instrument and the score directly. I mean, what you should, well, what we do is to place the score in front of us and begin to practice. What we should do is find out about the piece, the composer, style, versions, if there are versions for other instruments, orchestral, or . . . , a range of things we should do, but I think the most usual is to pick up the instrument and start playing. Because we think that is the most creative, let's say, the most productive option in the short term. This might be true for the first few days, because you get very fast results, right? But in the long term I think this is not enough, you have to go deeper to get out more out of the piece you want to learn. (Participant CL01,  $\chi^2 = 0.48$ )

b. *On difficulties.* Learners mentioned as a central idea the use of words such as *level* and *technique* the student may have, and what they attributed as the possible causes of these difficulties. Other attributes of these difficulties are the method and hours of study as well as the teaching they are receiving. They also refer to the type of practice they do; if it is very repetitive or is not "smart" practice and has flawed passages.

I think he needs to find some pieces that are at his level, because if there's something he can't do, it might be technically or musically too difficult for him at the time, so he can go back a bit and find something simpler to introduce these types of technique, but less. In a simpler manner. (Participant CL03,  $\chi^2 = 1.04$ )

We'd need to know Paco [the learner in the question] to answer this question, that is, his study method, study hours and also who he teaches, I guess. Not who that is, but in the sense of how he teaches. (Participant CL02,  $\chi^2 = 0.52$ )

Well, if he has been studying them for a long time and very strictly, for a long time, with a lot of perseverance, I think it is because he has been stuck repeating the same thing, so either he should take some time without playing these parts and after some time resume them and see how it goes. If he has studied them the wrong way and has flawed parts, certain passages, which are the difficulties, let's say, that he finds it difficult, for that is a matter of study, not having studied intelligently, let's say, this is what I think. And third, there may be technical issues, if he lacks technique. (Participant CL01,  $\chi^2 = 0.48$ )

- c. *On memory.* They generally mention images or mental representations, in this case, both auditory (music) and visual psychomotor movements without the instrument and segmentation of the material, always based on the score. That is, they say they start and finish the process with internalized mental actions. This type of discourse is highly disconnected from the learner's holistic body, and is symbolic rather than embodied speech.

Well, it's easier if you already have the musical ideas of a piece, and if you have good fingering that enables you to learn it faster, and memory. Like the ideas, themes and things that are most important in the piece, if you can identify them in the piece. (Participant CL03,  $\chi^2 = 1.04$ )

. . . I take it by parts, and one good technique is to read the piece without playing it, that is, having the score in front of you and imagining the fingering a little, i.e., reading. And then start playing it by parts, and learning it by heart, dividing it up a lot. I reach a point, try to repeat it, and then try not to look at the score so it will stick in my mind. (Participant CL02,  $\chi^2 = 0.52$ )

I think the way I do it is to use the score when I have a piece mechanically memorised and have doubts, then go over with the score just knowing the notes and thirdly visualising the whole piece without the instrument and without the score. Once the piece is finished, only in your head, not even with your hands, think of what you do with the guitar, every movement and not even your hands, just in your head. What you are visualising are your hands, the notes, it's a whole for me, passages that are sometimes difficult for you, then yes, well you practice of course with the instrument, but the work to refine, let's say, memory for me is this, to know the piece very well without the instrument, it depends on how much each person knows, right? (Participant CL01,  $\chi^2 = 0.48$ )

*Flamenco culture of learning (which illustrates the B group).* The processes are based mainly on hearing and listening, especially because they do not use graphical notation in musical learning. The lexicon is characterized by being highly focused on the particular example raised in the question, verbatim. They use specific words that refer to the body, such as *hands* and *head*, and to music, such as *rhythm* and *song*. Generalization is a process that they use less frequently. Sometimes it seems that they are defending one argument, but as they complete the entire statement, in the end, they are supporting the opposite argument.

- a. *On learning a new piece.* They start by listening and making sense of the piece or fragment mainly through rhythm or beat and musical sense or "air" that the piece inspires in them. They start from a single model, not several.

Trying to make sense of it, right? . . ., and putting "air" and rhythm (*compás*), because if you play a rhythm (*compás*), for example this one, however you like, then no, it doesn't sound right. Keep it in "air" and rhythm, then if you [have it], it'll come out much better when you do it fast, because it is *soleá*. (Participant FG05,  $\chi^2 = 0.74$ )

Well, studying it, yes, I don't know, if you learn a song, play it. Man, the first thing is to listen to it, in order to understand what is. (Participant FG11,  $\chi^2 = 0.69$ )

- b. *On difficulties.* Difficulties are always resolved through repetition. The more you practice, the better learning is expected unavoidably, in a culture of effort. They mention practicing with the lights off, which, we infer, is to improve proprioception of movement and audio. Some confusion was created in this culture by the fact that one of the questions named a hypothetical student called Paco. Many flamenco apprentices assumed that we were referring to Paco de Lucia (the famous Spanish guitarist), although the question specified that he was a student. Hence, their answers are first about the maestro to whom

all of them subscribed as *the best*; then at the request of the researcher, they speak of a pupil of their own “level.”

Well I think that if he doesn't study, he should study a little more, right? Because if he can't play it, then he needs to study until he can. I've often heard that when Paco couldn't play a *falseta*, he would spend eight hours in a room with the light off, and try again and again. Eight or more! Paco de Lucía, and if he had to spend one day, he would spend one, and if he had to spend two, he would spend two with the light off and again and again until he could, that's why he's the best. Why? Because he was the most stubborn in the world, and said “I want to be the best.” (Participant FG05,  $\chi^2 = 0.74$ )

You have to like it because you have to study hard. Practicing, studying, listening and striving. Listening too, yeah. (Participant FG11,  $\chi^2 = 0.69$ )

Maybe he is not as fast as he thinks, or doesn't have as much technique as he thinks, or whatever, he doesn't get it, he can't understand it in his head, I don't know. Because maybe he doesn't make an effort, because if Paco wants to, he can get it, yes, if he doesn't get it's because he probably hasn't made much effort. (Participant FG08,  $\chi^2 = 0.64$ )

- c. *On memory.* They often mention the word *head*, which we interpret as referring to the image or audio representation of the music, although such representations are not explicitly mentioned. They allude to the fact of informal learning of music in the Roma culture by immersion in listening and production since childhood, and also recognize that it can be in amateurs who have listened to a lot of flamenco. They also mention what would be the process of attentive or active listening, although they endorse listening while doing other activities. Thus, it appears to activate a type of motivation and direction of attention or concentration. The procedures used are the literal repetition and segmentation of material. Finally, there is some allusion to collective learning procedure with verbatim copying and segmentation of material, primarily among peers.

Listen to lots of music, right? Music is super important if you don't listen to music then you'll never have the rhythm (*compás*), right? Because if you have it in your head, then it doesn't take long to develop it in your hands, but if you don't have it in your head you're not going to play much. The Roma, for example, find it very easy to play *bulerías* and things like that, because they have most of it in their head, the Roma know all kinds of songs, *alegrías*, *fandango*, that's why we don't take long, we have it in our head and it's just a matter of learning to play it. Because we have been listening to . . . since childhood, since we were one year old, since we were months old, since we were born. (Participant FG05,  $\chi^2 = 0.74$ )

. . . Me, it's that often you're asleep and when you wake up you say you want to remember and you can't, and what's going on here? And then it's like you haven't heard anything. I don't know, you play, you make music on the guitar, and you are listening to and memorising it, based on the recording, and then also because after listening to it you must . . . (Participant FG11,  $\chi^2 = 0.69$ )

By listening, yes, look; if a guitarist doesn't know how to listen, he doesn't know how to play. If you and I are talking and you aren't listening, I bet you won't know what we talked about; it's something like that. If you do listen, we talk, then maybe when you're at home and you remember what I said and what you said? You remember it, it's something like that. It happens to me with singing, because many times if I'm in my room, I like a song, and put on a recording and I don't write it to learn it or anything, I'm doing something else, but I'm listening, although I'm doing something else I'm listening. Yes, because it's to take your mind off things a little, because if you're upset maybe . . . you start looking at the cassette and before you realise it, you have not listened to the music and you're watching the tape, because it's coming from there . . . you have to look at things that you like and

listen at the same time to other things. . . . Sure, I'm doing other things and I'm listening, I'm using the "Twenty" or "Messenger" or looking at photos. . . . Maybe if you have the person that plays in front of you, then I say "let's see, play it"; he plays it, maybe I'm missing something, "Can you repeat it?" Then he re-plays it, I'm still missing something, and "Can you repeat it?" But maybe it is an album of music, it would be the whole song, I restart it, listen well until it goes into my head, until I get the guitar and play *tutututu*. Another thing would be to play the cassette with the guitar, play 30 seconds, and 30 seconds *tututututu* play it, play them well, another 30 seconds and play them well, and so on. (Participant FG08,  $\chi^2 = 0.64$ )

*Jazz culture of learning (which illustrates the C group)*. The content of this cultural group stands out in the activation of psychological processes, for its richness and deployment of examples. The first striking feature is that all participants said that the questions need to be specified for a given learner and situation, and then often refined their explanation to their own experience; hence, the frequent use of the words and phrases such as *yo* (*I* in Spanish), *I think*, *I do*, *I know*, *it happens*, and *here*. Discourse suggests that they perceive themselves as active learners in decision making.

The second striking feature of their speech is that they use the enumeration of events to describe the processes, and the words *first*, *second*, and *third* are frequent as elements of discourse organization, representative of an analytic discourse. We specify the contents as they respond to a new topic, learning difficulties, or method of memorizing.

- a. *On learning a new piece*. They are interested in liking the piece, or the feeling the piece gives them, again emotions, and in what could make them dislike it. It is a process from the inside to out, or adjusting the external material to the inner eye, that implies a high level of self-regulation. The procedures they use are visual analysis of the score and listening to recorded versions. The first impression of a work is not enough; it can be misleading.

Deciding whether I really like it and why, which is trying to see the side that my mind tells me is boring and see why, as it might not be. Then listen to versions, yes, play it a thousand times, yes, look for harmonization, yes, all that, yes, but hey, maybe understand why I like or dislike it, or try to see where there is nothing, or to see that the ugly or monotonous part that makes me stay away from this piece, because it might not be so bad, right? And on the contrary, it may be a very fast song and I really like it because I don't know why, and then try to compensate for those two things to get more into what I like from the real one. (Participant JZ05,  $\chi^2 = 0.78$ )

. . . I think, I don't know, it depends on whether it's a written song, or is a premiere of a new song or version already made or a standard or whatever. It depends; I might have to become a bit more familiar with the song, right? Take a look at it, as there are pieces that are not written and you have to listen to them a little, understand chords, if it hasn't been performed before you have no choice but [to] listen to it, see it on paper, you become a little familiar with it, a first reconnoitering of all the parts in the song. (Participant JZ04,  $\chi^2 = 0.73$ )

- b. *On difficulties*. They refer to the process of attention, both in active listening to versions of the piece and during the study process. Learners say that this music demands of them an awareness of the actions and the musical material, again the specificity of jazz. Another factor is internalizing the piece by listening, playing, and patience and perseverance in learning the piece. They show the difference between technical difficulties (working on melody and harmony) and performance (connecting with what is meant by this piece). Finally, freedom of interpretation of the piece may pose a challenge, and they recognize the difference between listening analyzing and listening enjoying.

. . . First, I think he might not have listened well to these songs . . . and [he should] know, see, listen to many versions of this subject, right, especially remembering and trying to sing the melody, you must have internalised it within you before playing it on the instrument. Second . . . jazz is a kind of music where you have to be very focused on what you play and know what you're playing; know what you're playing and why you're playing it, if you learn it in a mechanical way, I think you don't get to touch it and then you will not remember it. And another thing . . . may also be patience . . . , that's my attitude, until you get something right you don't move away from the score. (Participant JZ07,  $\chi^2 = 0.87$ )

It depends, it [may be] problems with interpretation, for example, some melodies are very simple, but not so easy to interpret musically, it's perhaps because [the learner] does not connect musically with that feeling for that music, right? and perhaps because he doesn't have the knowledge to understand the music, right? . . . recognise the chord by sound, because it is not so easy. . . . It's that in jazz, the interpretation of the songs is very free, right, and then sometimes you don't know if you're doing right or wrong, you see, . . . most of the time you're not following a score, right, and you have degrees of freedom and in these degrees of freedom you say, hey, am I doing it right, am I doing it wrong? Is this really the way it should be done? (Participant JZ01,  $\chi^2 = 0.79$ )

The first thing I can think of to say is that the typical answer is that he has to stop studying technical, practical, and sticking to the theory to overcome these technical problems, these technical barriers. . . . My personal opinion is that in jazz, pop, flamenco, everything must be interpreted in a personal way . . . . Because when I see the musicians that I like I don't always analyse and enjoy their technical side, right, but rather, their creative side, then I am more in favour of [the learner] seeking a version of the song that suits the way he plays, rather than the original version of the song. (Participant JZ05,  $\chi^2 = 0.78$ )

Also, beyond musical matters, difficulty of jazz learners is adaptation of the piece to the learner, or learning approach.

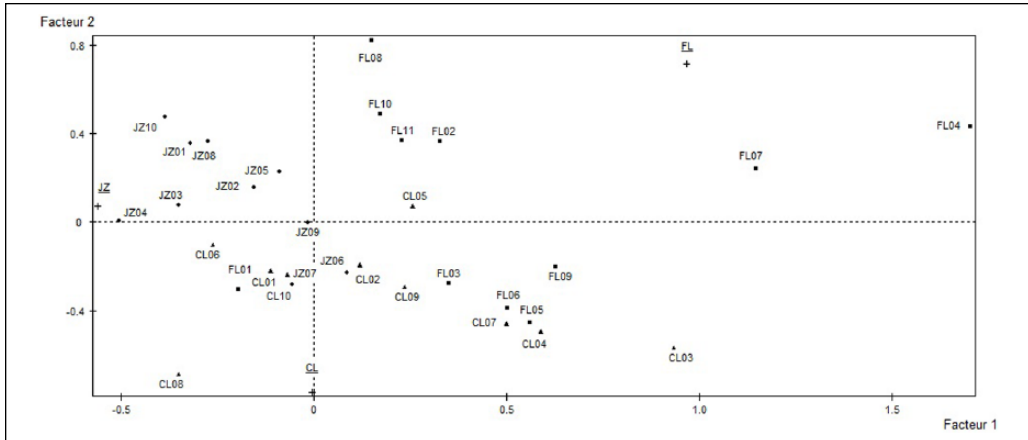
Well, the level of difficulty of the song may not match his level of knowledge that he can apply, or that he may be approaching it in the wrong way, maybe the way he studies the song. (Participant JZ04,  $\chi^2 = 0.73$ )

An additional difficulty is handling the instrument in a very versatile way and understanding the tonal material to play in any key. This repeats the ideas of specificity and greater complexity of jazz.

. . . in flamenco they are quite comfortable, for them it is easier to transport with a capo and that's it. Sure, but the sound of flamenco played with a capo is different, I can't use a capo in jazz, because it deadens the sound. (Participant JZ07,  $\chi^2 = 0.87$ )

c. *On memory.* They frequently mention mental representations, including audio and internalizing the pieces through the previous listening, and visual and proprioceptive representations, such as hand positions. We see this from the use of words, *visual*, *to look*, and *versions*. They also often mention repetitive practice and procedure of singing the notes. Another important means of practice is transportation of the piece to different keys, as information transfer and generalization in learning, as we have already mentioned in difficulties.

First [it's necessary] to listen a lot, to know the piece very well, the more you know it, it will enable you to internalise it within your head. Second, to play it a lot, you have to play it a lot and in many ways. Third, it is also important maybe . . . to visualise it on the guitar, the guitar is very visual, easy to visualise, right? It is also recommended that when you're playing the melody, if it's not



**Figure 5.** Projection of participants and modalities of the variable “Culture” (CL, FL, and JZ) in the question about achieving good performance.

Note. CL = classical; FL = flamenco; JZ = jazz.

very fast you can know the notes you’re playing, you know? You say sol, fa, singing the notes helps me to memorise . . . also to play the piece in different keys, that’s very interesting. (Participant JZ07,  $\chi^2 = 0.87$ )

Uh, well, what is essential is to play it a lot, listen to it a lot, play it and try some mnemonics, visual memory, auditory memory, memory also of positions, including fingering, right, a particular fingering. (Participant JZ04,  $\chi^2 = 0.73$ )

### Evaluation: Achieving Good Performance

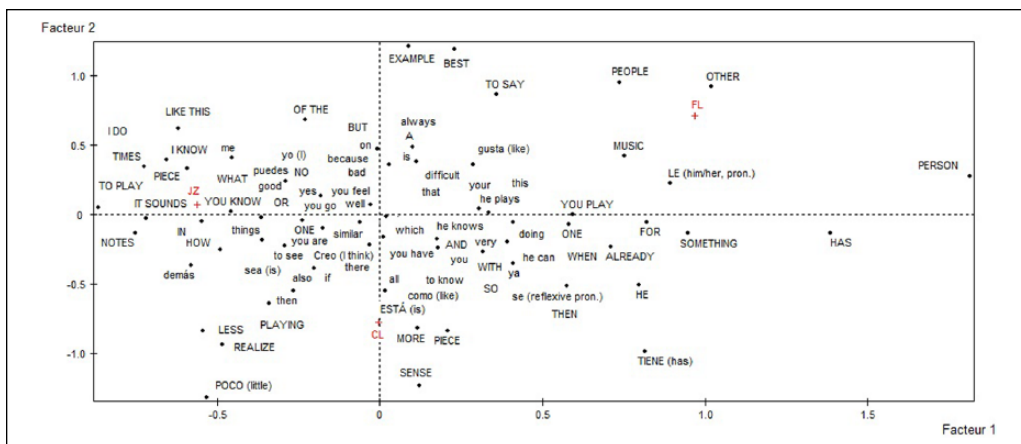
*CA of the lexical table.* Figure 5 shows the projection of 31 participants and three cultures on the factorial plane formed by Axes 1 and 2. Once again, Axis 1 (Factor 1) contrasts flamenco to jazz and classical, whereas Axis 2 (Factor 2) contrasts classical to the two popular cultures. This distribution indicates that when classical and jazz participants explain and describe evaluation, that is, the achievement of good performance, their lexicons are closer to each other than to the lexicon used by flamenco participants. Figure 6 shows the lexical graph projected onto the factorial axes of the plane and in relation to all three centers of gravity. We distinguish three main lexical groups, each of which is illustrated by a learning culture.

*Group A:* Located on the lower half plane, formed mainly by the following words: *a, está (is), for, ha (has), less, little, more, one, piece, playing, realise, se (reflexive pron.), sense, so, something, then, tiene (has), when.* It is associated to classical culture.

*Group B:* Located in the upper right quadrant, formed mainly by the following words: *a, best, example, le (him/her pron.), music, other, people, person, to say, you play.* It is associated to flamenco culture.

*Group C:* Located in the upper left quadrant, formed mainly by the following words: *but, how, I do, I know, it sounds, like this, no, notes, of the, or, piece, times, what, and you know.* It is associated to jazz culture.

*Modal responses (ASMR). Qualitative description of content and form.* This section describes how the participants from each culture evaluate their performance.



**Figure 6.** Projection of words and modalities of the variable “Culture” (CL, FL, and JZ) in the question about *achieving good performance*.

Note. Capitalized words have above-average contribution. CL = classical; FL = flamenco; JZ = jazz.

*Classical culture of learning (which illustrates the A group).* Classical guitarists usually associate achievement to adapting to the style of the piece, describing a process of adjustment from their own internal standards to external standards (conventions).

Take into account the style you’re playing and whether the way you’re playing it is more or less consistent with what is established by the style. (Participant CL08,  $\chi^2 = 0.33$ )

First of all is speed, so if you have an *allegro* and you’re playing *andante*, you know that the piece is not finished, because you’re not following the *allegro*. (Participant CL10,  $\chi^2 = 0.24$ )

They first establish their own criteria to determine whether they are playing correctly, and if they have not developed them, they mention the figure of the teacher. Similar to their ideas regarding learning a new piece, here too, they insist on the tension between what is best and what is most obvious or easiest. They also express discourse organization by enumerating alternatives analytically.

Man, if the teacher says so, and he agrees too, because it makes sense with the score, with the harmony, all those things, right? (Participant CL04,  $\chi^2 = 0.58$ )

... you can tell in several ways. First you can tell, perhaps most obviously, because the teacher says so, though of course, what the teacher says nearly always goes, ha ha. So you can tell through an outsider whether or not you’re doing it well. But I think the best way is to know yourself that you’re doing it well, so perhaps this is the best way, the most difficult way, realising yourself, and I think you can realise yourself because of your training, the more you know the style and the more you know the composer. (Participant CL09,  $\chi^2 = 0.47$ )

By the teacher’s approval, if you do not yet have strong criteria, right? I mean [if] you haven’t formed an opinion about how to play ... You realise how the piece is going, and if you don’t, your teacher will, if you can’t understand it yourself. (Participant CL01,  $\chi^2 = 0.18$ )

The development of those criteria comes from listening and comparing versions.

... and also, if you think it’s all clear, well, you can see what others do, whether they do more or less. There’s no reason to do everything that others do, right? But you can see whether it is within that



context. "I'll look at the melody, or the entries, or the legatos, or a certain part, to see if what I do has more or less the same sense, it doesn't have to be identical, obviously." (Participant CL08,  $\chi^2 = 0.33$ )

... I think it's a good idea to listen [to] someone else, once you have your own version and think it's about right, listen to other versions and notice the differences and why you do things differently, see if the other version convinces you or gives you other ideas. (Participant CL10,  $\chi^2 = 0.24$ )

They also mention starting by listening to their own recordings critically, focusing on negative points.

I record myself, I like to record myself when I have the final result of the music, you are often doing wrongly many things that you think are alright, and they're not, and another thing, when you record yourself you realise how it sounds, right? and you surprise yourself with many things that you thought didn't sound well and other things that you thought you were doing well but are not so good, I think that recording yourself, not only audio but also video, is essential. (Participant CL06,  $\chi^2 = 0.52$ )

We see that listening critically to themselves and to the versions of others is always done after having prepared their own first result, and not before or during the process.

One criterion is the resolution of technical difficulties. They also mention a holistic characteristic such as the sense of the piece, but which is established after solving the technical difficulties. There is a prioritization of technical problems over musical expression.

Considering that all the technical difficulties are solved, [you have to take into account] that it all has an expressive and musical sense and is within the structure of the piece being played, because [if] you're playing a fugue, well, make sure that all the voices are clearly understood, the entries, the episodes and so on. (Participant CL08,  $\chi^2 = 0.33$ )

When the student has achieved expressive, intelligent, organised interpretation, and has found solutions to the most difficult technical things, and is very comfortable with the work. (Participant CL03,  $\chi^2 = 0.38$ )

There is no mention of subjective appreciation regarding the interpreter's sensations and emotions, beyond comparative-conceptual distinctions, or of the body.

*Flamenco culture of learning (which illustrates the B group).* Typical answers from Roma flamenco guitarists focus first on the need for an evaluation criterion external to the learner, highly focused on the teacher as the person who truly knows the process to be followed: an other-regulated process.

When you show it to someone and they smile, ha ha ha, they smile, when people like it, come on. (Participant FG07,  $\chi^2 = 1.06$ )

Well, when someone else tells you, it has to be someone else who tells you ... (Participant FG04,  $\chi^2 = 1.02$ )

By what others tell you ... above all you need the opinion of the teacher, people who don't know about music are always very critical of beginners, in other words, you have to take advice from people who know, because people who like listening to music but don't know about music might listen to a famous guitarist and want to compare you to him, but those people don't know how to value the work you're doing day to day. They shouldn't evaluate the person because if they evaluate him badly they'll sink him. (Participant FG02,  $\chi^2 = 0.72$ )

If you've been doing it for a while and see that you have played it non-stop for example, and the teacher says it's going well. (Participant FG11,  $\chi^2 = 0.65$ )

They also appreciate the learner liking and enjoying what he plays, and relate enjoyment to rhythmic precision.

. . . that you like it; if you like it and people like it, and you're enjoying it, of course; it's a cycle. (Participant FG10,  $\chi^2 = 0.66$ )

. . . and himself, it's what he feels, I don't know, don't know how to explain it; it's that you're enjoying it. (Participant FG11,  $\chi^2 = 0.65$ )

When everything fits in time (*compás*), all the *falsetas* fit in time. (Participant FG03,  $\chi^2 = 0.69$ )

They often mention reference figures as models for demanding, self-critical work, and as an example of a modest attitude, reflecting the idea that a musician should not publicly recognize that he plays well.

By listening to the real piece by whoever plays it. It might be a *bulería* by Camarón, and if I go [sings], I might say it's OK, but before saying it's OK, listen again, because it might not have been. (Participant FG08,  $\chi^2 = 0.9$ )

. . . For example, take Paco or Camarón; they say they listen to one of their recordings and when they have heard it, they are never satisfied, there's always something to improve; or they go somewhere their recordings are being played and they say: I want to do it better . . . For example, Michael Jackson said in an interview, "I go somewhere and people play recordings of my music right away, but I want to be with others and listen to other music, why mine, if I don't like it." (Participant FG10,  $\chi^2 = 0.66$ )

. . . you're never going to say I did it [well] . . ., neither can you say good, because that's self . . ., I don't know. Good musicians have never been able to say look, today I did it better or danced better, they're always very self demanding, they like what they feel, and it's, as they say in flamenco, *duende*, or something that you do at the moment and a lot of people like, that's the best part. Seeing it in others is different from saying it about yourself, I believe it's impossible to say about yourself. Paco or Camarón have that desire to improve, yes you have to improve, always try to improve. (Participant FG11,  $\chi^2 = 0.65$ )

*Duende* is also mentioned as a magical moment attained by the musician in social situations when he plays from within, with commitment and honesty. It is identified with their idea of achievement.

. . . someone is singing at a party and you see he has done it so beautifully and truly and you say "olé," for example. You know it's done truthfully and that's it, period, that's the good thing. (Participant FG10,  $\chi^2 = 0.66$ )

*Jazz culture of learning (which illustrates the C group)*. This group expresses some concern regarding the consistency between the answer to the open-ended question (in this study) and the answer selected in the multiple-choice question (Casas-Mas, Pozo, & Montero, 2014). Here again, their discourse seeks consistency metacognitively.

. . . I don't know, let's see what you tell me now about the answers [from other guitarists]. (Participant JZ04,  $\chi^2 = 0.40$ )

They speak of the difference between songs and improvisation, highlighting that although the purpose of songs may be replication, the purpose of improvisation is not.

... I don't know whether to focus on improvisation or on a song, playing a song, you know? Simply, I mean, I take a standard and play the melody or the chords . . . , in jazz you have a paper that tells you what notes they are, right?, that you're doing it well; what you improvise is different. (Participant JZ04,  $\chi^2 = 0.40$ )

As improvisation is a personal creation, achievement is focused on the learner's expression, flow, and comfort. There are descriptions based on emotional and proprioceptive factors, along with content and form of analytical expression, showing that jazz is located somewhere in between embodied speech (like flamenco) and symbolic speech (like classical). Jazz participants define improvisation as continuity in musical discourse, overcoming technical difficulties, which should follow the chords.

... there are days when you find it easier to play and you're very comfortable and flow more than on other days, then suddenly you play the melodies very well, then it's your turn for a solo and you play it very calmly and it flows well, you don't get stuck; other days you have fewer ideas. (Participant JZ07,  $\chi^2 = 0.46$ )

... you can tell if you feel comfortable playing it, if you are able to, if you have enough ease or skill to be able to express what you want in this song without being drowned by the difficulty in it . . . when a song doesn't work, you can tell you can't, you're not comfortable, you don't enjoy it, you can't express what you want. (Participant JZ08,  $\chi^2 = 0.34$ )

... when you feel as if you're surfing, when you feel you can go through the song, I think you feel it in your breast, I don't know, I mean you feel as if you can go through it and you feel the changes in scales don't bother you, that you understand perfectly what part of the song you're at and don't get lost, you feel that you like what you're playing, you feel you're improving . . . it's when you can unify technique and basics with creativity; when that is unified it's because you're playing well. (Participant JZ09,  $\chi^2 = 0.34$ )

They often identify the difficulties in achieving it in terms of the melody not matching the chords and not being able to play chords in different positions. Improvisation is a way of adapting the material to the student's competencies at a given point in his learning.

... it's more that way in an improvisation, you can play each chord in a thousand different ways, but if you're going to play that chord in a thousand ways it's because you know how to play that chord in a thousand ways; otherwise, you're going to play it in the usual position, the ones you know, the first ones. (Participant JZ04,  $\chi^2 = 0.40$ )

... when you play a difficult song or a song at first sight, you have to slow down and play fewer phrases, not look at the score all the time, or when you're stuck to each chord and don't know exactly where your hand goes, and that is something you know inside, it's being tied up as little as possible, . . . somehow being correct with the scales of the chords, because there are notes that sound bad on the chords, so if you play them, it sounds bad and that distracts you, makes you lose concentration, direction, the story you were telling. (Participant JZ09,  $\chi^2 = 0.34$ )

Finally, they highlight developing their own criteria and feelings by listening to self-recordings. Evaluation takes a balanced approach between positive and negative performance, and is more realistic than what we have found in the discourse of classical participants.

... it's interesting to record yourself and then listen to it later, after some time has gone by, because sometimes you lose some objectivity, it's difficult to judge whether you're doing something well or

badly. Listening to a concert I played a few months ago helps me see whether I play a certain song better or if now it sounds like too much . . . I don't know, an accompaniment that is too complex or the opposite; or if a certain melodic line was going well or badly; I think it's difficult to judge, particularly at the moment, . . . and above all, your feelings, if you are being able to say what you want to say, you feel you are getting the message across, I think the song may be good, reasonably good. (Participant JZ08,  $\chi^2 = 0.34$ )

In general terms, these are very detailed descriptions focusing on a holistic type communicative aim. It is worth noting that the figure of the teacher is never mentioned.

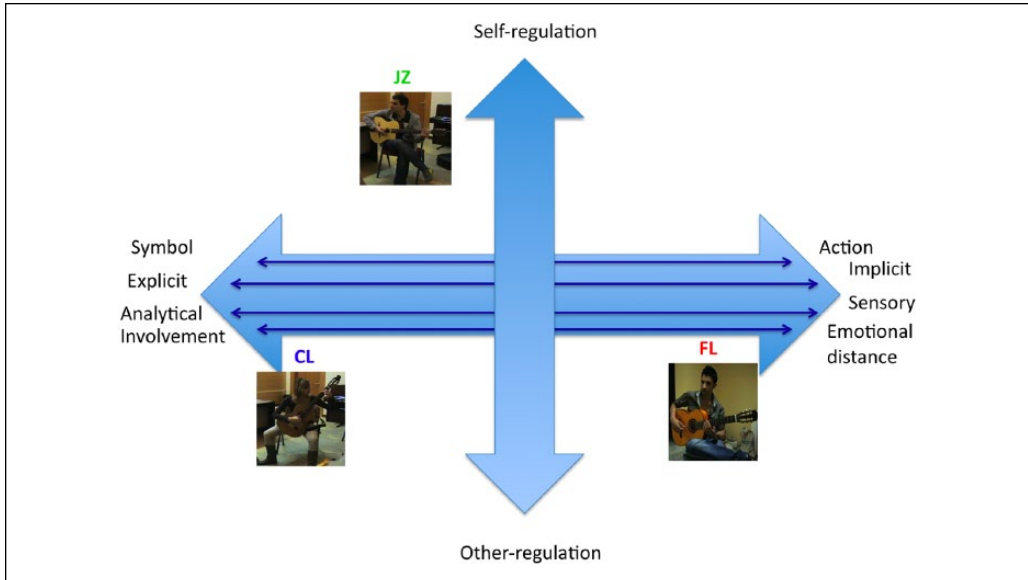
## Discussion and Conclusion

The results of this study show the ways in which musicians from three different cultures of musical learning (current classical, flamenco, and jazz), and who live in the same country, conceive the different components of learning. The three cultures are always distinct in the quadrants of the factorial planes and maintain consistency throughout the projection of the three components of learning: teaching, learning, and evaluation. Classical and jazz cultures of learning were closer to each other than to flamenco culture on the planes, extending those nuances found in the study by Casas-Mas, Pozo, and Montero (2014).

In the distribution of cultures and lexical projections on the planes, first, we interpret an axis that refers to the different experiences that cultures manifest with music, that is, an axis that divides the plane in a phenomenological way, with sensory-emotional approaches at the upper pole and thought-conceptual or analytical approaches at the lower pole. This axis could also be conceived as a continuum of knowledge from *cognition through action* to *cognition through symbolization*. A third continuum along this axis divides approaches according to the degree of explicitation involved in the forms of learning. The sensory-emotional and action-based approach to learning would be also related to the "implicit" third duality, whereas the analytic and symbolic approach entails high levels of explicitation. In turn, this implies a fourth continuum from involvement to emotional distance, which corresponds to the dimension expressed by Axis 1 on the factorial planes presented, and is related to the use that different cultures of learning make of the body and musical language, on one hand, and of verbal language on the other.

Cognition through action is characteristic of the flamenco culture, e.g. we see words like *head*, *hands*, *song*, and *compás* (rhythm), as "embodied" representations (through the body) (Pozo, 2003) and therefore more implicit. This is consistent with what Donald (2000) described as the conformation of the mimetic mind, not so much for its developmental connotation as for the way it shapes the qualities of the mind, which requires an analogue approach. Analogue systems are global, Gestalts, hence these flamenco apprentices mention holistic procedures, for example, *to teach with love*, *give sense and air to the piece* and the word *music* globally. This interpretation goes beyond the distinction between oral and literate cultures of learning (Olson, 1994; Olson & Torrance, 1991), because the Flamenco maestro represents both oral and gestural cultures. Flamenco involves complex procedural actions on the guitar, which cannot be conveyed through verbal instruction alone. Learners therefore also need to observe gestures, without which learning would be very slow. Flamenco is thus an oral culture of learning, but shows essentially gestural and mimetic features in the domain of music. Moreover, the Roma community often expresses itself more comfortably through the domain of music than through the domain of speaking. The study by Casas-Mas (2013) shows examples in which verbal discourse fuses with musical discourse, and spoken phrases may begin with the guitar, find support in the guitar, or end by playing the guitar rather than speaking.

These procedures coexist with the use of repetition and segmentation of the material, which are closer to craftsmanship formats (see Olson & Bruner, 1996). In jazz, we find words such as *flowing*, *surfing*, and description of holistic sensations that match the *flow* concept (Csikszentmihalyi,



**Figure 7.** Summary of differences and the content of speech and interpretation of the projection of the three cultures on the plane along two main complex dimensions.

Note. CL = classical; FL = flamenco; JZ = jazz.

1975, 1990; Wrigley & Emmerson, 2011) and concentration on the task, matching the *mindfulness* concept (Lecuona de la Cruz & Rodríguez-Carvajal, 2014). In the classical culture, at the other extreme, we find words that convey externalization, which Donald would call “symbolic technologies” of the theoretical mind, with words such as *score*, *structure*, *parts*, *form*, and *notes*. We are looking at a more symbolic mind, based on an analytical approach, using more abstract terms and breaking down the whole into parts, moving back and forth from the details to the widest zoom. It is another form of cognitive development, in which gesture, body, and emotions are sometimes trapped and limited by the symbolic-analytic engineering of learning.

Second, according to the theoretical framework for learning conceptions, the discourse of each culture marked differences regarding the locus of control by educational agents, that is, whether the teacher or the learner is considered responsible for making decisions. Thus, a second axis could be established on which we could interpret the distribution from self-regulation at one pole to regulation by others at the opposite pole. This may be related to contemplating one version against multiple versions, and would correspond to the projection of Axis 2 on our planes. We have established this axis as transversal because it works differently from the other axis. It is summarized in Figure 7.

On this axis, jazz appears in the upper quadrant, on the opposite side from classical and flamenco, and focuses on self-evaluation criteria. The jazz culture describes learning as a process of personal idiosyncratic creation, with prevalence of expression and the apprentice’s feeling comfortable while playing. Regarding evaluation, jazz learners use self-regulation (play and evaluate their own achievement), without seeking a predefined outcome (Casas-Mas, Montero, & Pozo, 2015). The learning process is based on music created by the student, according to his own criteria, and focuses more on internal perceptions (of comfort, competence, etc.) than on external goals (style, teacher’s indications, etc.).

In contrast, in flamenco and classical cultures, the teacher is the main reference for the student, as described by Schippers (2010) for conservatories. Teachers are mentioned in singular as persons exercising a one-man function. Nevertheless, the two cultures place very different

demands on the teacher figure. In flamenco, the teacher provides musical knowledge and has the power to assess achievement, and is thus a very important figure. His name appears in the characteristic lexicon along with the word *teaching* (direct instruction and judgment on the student). The classical culture uses words such as *student* and *learning*, which imply attention to the needs of each learner. In jazz, the word *teacher* is rarely used and seems to be related to the tools that enable learner autonomy and self-regulation.

Flamenco learners speak of an intuitive approach to music through listening and musical-gestural production, described in this study as other-regulated during the instrumental learning phase. They also describe certain skills, primarily rhythmic, as learned intuitively and through interaction with peers, prior to the relationship with the teacher. This is what we call informal learning (Folkestad, 1998; Green, 2001-2002, 2008; Shah, 2006; Trilla, 1997). This is similar to mother tongue acquisition without specific instruction (Rogoff, 2012), and to the kind of arithmetic learning described by Lave (2011).

The jazz culture of learning focuses on the material or information, on the organization and consistency with which it is conveyed, and on whether or not the learner likes what he learns, thinks, and knows. The more academic cultures (classical or jazz) prioritize features such as instrumental method and technique, and require teachers to be performing musicians with teaching experience. They differ in that jazz uses words referring to the community, such as *teachers*, *guitarists*, *people*, and *musicians* (as do flamenco and other popular cultures; Rogoff et al., 2001), whereas classical does not.

In classical and jazz cultures of learning, the approach to music involves much more awareness, and there is more variability among individuals in the early stages of informal learning. Thus, non-formal and formal learnings of music start by making the elements explicit, mainly through the external system of representation (notational material). Music is learned as a second language is learned, with awareness of the meaning and function of the parts. Without this process, it would be very difficult to access this knowledge, because formal explicit knowledge serves to reconstruct the implicit and emotional. From this perspective, there would be a hierarchical integration of types of knowledge, with explicit knowledge covering more implicit stages and allowing them to develop. As the participants in this study were advanced learners (semi-professional) from different cultures of learning, it would be useful to conduct further studies focusing on different ages and levels, particularly in the flamenco culture of learning, for comparative purposes.

Juslin and Västfjäll (2008) argue that these two approaches to music are dissociated, that is, one is implicit and involves both reflex brainstem as evaluative conditioning and emotional contagion, whereas the other is more explicit, and includes what they describe as visual imagery, episodic memory, and musical expectation. It cannot be claimed that one approach is superior to the other, but rather, that one or the other is enhanced in some cultural settings compared with others, in agreement with Green (2008) in the discussion of musical learning, and Bruner (1997) and Rogoff (1990) on learning in general. We suggest that cultures could “learn” from each other: The informal learning culture could create greater learner autonomy, and the formal learning culture could use more emotional and communicative processes, or be based on better grounding.

A give and take between different educational settings might help create closer communication between them. There is much that formal settings could learn from the practices of informal learning (e.g., Casas-Mas, 2013; Rogoff, 2012; Scribner & Cole, 1973). The demands of formal schooling are often so disconnected from those of everyday life that some learners may perceive school as extraneous, hostile, and disqualifying of their community. Indeed, schools regularly object to many of the holistic, emotional, and embodied learning resources used in the domain of music by the Roma community.

In agreement with other studies (Karlsen, 2012; Lave, 2011; Sexton, 2012), we believe that schools in Spain might not fully recognize the musical competence of Roma students. Clearly,

formal education may present difficulties to people who rely heavily on informal education as their basic method, and the problem does not lie “in the learners.” Better understanding is needed of the cultures included in the setting of formal education. Some of the features of learning cultures in popular music, preferably informal, could benefit formal education in mandatory educational settings. They could even trigger a reassessment of “excellence” in higher education (Karlsen, 2010) and of the formats of psychological research and application, considering that different ways of doing things are viable in different cultures of learning. Special attention is needed to determine whether formal settings of musical education might hinder the learning of students whose early training took place in less formal settings (Feichas, 2010) because of teachers being unaware of the approaches and needs of these students.

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### Note

1. The fact that the sample has many more male than female participants is not a matter of bias, but reality. Women rarely play instruments in popular urban music (Green, 1997), especially at these levels of learning.

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