Cross-Cultural Validity of the "Classroom Motivational Climate Questionnaire": Comparison between French and Spanish Students

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Abstract

The objective of this study was to obtain evidence about the cross-cultural validity of the "Classroom Motivational Climate Questionnaire" (CMCQ), developed recently for Secondary and High-School students. With this purpose, French and Spanish Secondary and High School students' results were compared. A total of 749 French students formed the group to be compared with the original Spanish sample. To validate the CMCQ, confirmatory factor analyses, reliability and correlation and regression analyses were made. The results showed that CMCQ is a reliable and valid instrument to measure motivational climate in France as in Spain. It allows detecting which learning patterns can to be changed for improvement, and predicts to a large extent the satisfaction level with the teacher. Likewise it showed some existing differences between Spanish and French students in the motivational role attributed to some teacher's strategies, differences whose theoretical and practical implications are discussed.

Keywords: Classroom motivational climate, assessment of motivation, success expectancies, learning motivation, student's satisfaction.

Resumen

El objetivo de este estudio es analizar la validez transcultural del "Cuestionario de Clima Motivacional de Clase" (CMCQ), desarrollado recientemente para alumnos de Secundaria y Bachillerato. Con este fin se han comparado los resultados de alumnos franceses y españoles de educación secundaria y bachillerato. Un total de 749 alumnos franceses se comparó con la muestra original española. Para validar el CMCQ se llevaron a cabo análisis factoriales confirmatorios y análisis de fiabilidad, correlación y regresión. Los resultados han demostrado que el CMCQ es un instrumento fiable y válido para medir el clima motivacional lo mismo en Francia que en España. Permite detectar qué patrones de enseñanza podemos cambiar si queremos mejorar, y predice en alto grado el nivel de satisfacción con el profesor. Asimismo, se han manifestado algunas diferencias existentes en el valor motivador que los alumnos atribuyen a algunas estrategias del profesor, diferencias cuyas implicaciones teóricas y prácticas se analizan.

Palabras clave: Clima motivacional de clase, evaluación motivacional, expectativas de éxito, motivación por aprender, satisfacción del alumno.

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Introduction

The basic meaning that every learning situation should have for students is that it makes possible to improve their own abilities, making people more competent and allowing them to enjoy this experience (Dweck & Elliot, 1983). This is the goal that any teacher pursues when trying to design and organize his/her lessons: To create an environment that promotes motivation and learning, and that favours a higher satisfaction. However, to achieve such goal it is first necessary to know what determines the students' motivation to achieve learning goals.

Academic motivation is conditioned by personal and environmental factors that influence the meaning and incentive that attaining learning goals has for students. This meaning depends on personal factors such as values, interests, goals, expectancies and self-regulation ability (Alonso-Tapia, 2005; Alonso-Tapia, Huertas, & Ruiz, 2010; Alonso-Tapia, Nieto, & Ruiz, 2013; Alonso-Tapia, Panadero, & Ruiz, 2014; Assor, Kaplan, & Roth, 2002; Núñez et al., 2014; Patrick, Kaplan, & Ryan, 2011; Covington, 2000; Deci & Ryan, 2002; Eccles & Wigfield, 2002; Elliot, 2005; Zimmerman & Schunk, 2008). These values and interests change depending on social conditions such as parents' socio-cultural level or being or not an immigrant (Alonso-Tapia & Simón, 2012; Franzé, 2002; Salili & Hoosain, 2007), as well as on factors defining instructional environment and configuring classroom motivational climate (Alonso-Tapia & Pardo, 2006; De Corte, Verschaffel, Entwistle, & van Merriënboer, 2003; Urdan & Turner, 2005).

Therefore, when trying to illustrate what is affecting student's motivation, we could split up the factors in three groups: Individual's previous personal traits, socio-cultural conditionings, and characteristics coming from instructional situations that shape classroom motivational climate. This last group of factors is especially important, as they can be acted upon. So, it is important to know the main teaching patterns that shape the classroom motivational climate, and to develop tools with an adequate validity to enable their assessment. The objective of this study is, then, to contribute to this development following the ideas of Ames (1992) and the work of Alonso-Tapia and Pardo (2006) and Alonso-Tapia and Fernández (2008, 2009).

Ames (1992) coined the concept of *classroom motivational climate* (CMC). She considered that CMC can favour mastery or performance goal orientation depending on the kinds of activity patterns adopted by teachers in six areas of teaching represented by the acronym TARGET: Task, authority, recognition, grouping, evaluation and time. Evidence supporting the importance of all these classroom factors for enhancing motivation to learn has

been provided by the review of Urdan and Turner (2005). Subsequently, consistent with the ideas of Ames and Urdan and Turner, Alonso-Tapia and Pardo (2006) and Alonso-Tapia and Ruiz (2007) identified a set of teaching patterns or strategies, organised around different points throughout the learning sequence, that operationalize the concept of CMC. The research on such patterns has demonstrated the usefulness of creating such a climate to improve students' motivation towards learning. The patterns referred to, shown in Table 1 were

Table 1

Teaching Patterns Assessed by the CMCQ, and Criterion Scale with Item-Examples

CMCQ Variables
Teacher makes use of novelty. This teacher (T) presents often new information that increases our interest.
Teacher assesses previous knowledge. This T explores what we know on a subject before explaining it.
Teacher relates different topics. This T tries to help us to relate new ideas with what we already know.
Teacher induces public participation. This T likes us to participate, listen to us and answer to our questions
Teacher' messages orient to learning. This T likes us to enjoy learning new things.
Learning objectives are clearly stated. (–) This T changes from a moment to the next, and this is confusing.
Classroom activity is well organized. In this class, task instructions are clear, so that we know what to do.
Teacher supports autonomy. (–) This T does not allow the freedom of choosing how to work or with whom.
Teacher teaches to work step by step. This T explains step by step, and so it is easier to understand.
Teacher uses many examples. (–) This teacher gives almost no examples: So it is difficult to understand.
Classroom rhythm is adequate. This T adapts to our learning rhythm: He/she gives us time to think.
Teacher use feedback that help to learn from errors. This T makes feel you that you can learn from errors.
Teacher assesses "for" learning. (–) This T gives exams that have little to do with classroom work.
Teacher praises student's progress. This T praises our effort to learn at every occasion.
Teacher treats pupils with equity. (–) This T pays more attention to most intelligent pupils.
Teacher cares from each pupil. (–) Few pupils ask questions because this T is aloof and do not help.

used to design the Classroom Motivational Climate Questionnaire, CMC-Q (Alonso-Tapia & Fernández, 2008).

The results of the initial studies revealed that this questionnaire is a reliable and valid tool for identifying the degree in which the different teaching patterns configure a CMC learning oriented and for predicting its effect on different students' variables: Interest, perceived ability, effort, success expectancies, satisfaction (Alonso-Tapia & Fernández, 2008, 2009; Alonso-Tapia & Moral, 2010; Alonso-Tapia & Simón, 2012), resilience (Alonso-Tapia, Nieto, & Ruiz, 2013) and self-regulation (Alonso-Tapia et al., 2014).

Nevertheless, the use of CMCQ's strategies does not have the same effect neither on every kind of student, on students of different gender nor in every context. The first of the two studies of Alonso-Tapia and Fernández (2008, 2009) revealed that, from the strategies than configure the CMC, "*Teacher supports autonomy*" is more indicative of a "classroom climate oriented to learning" for High School (HS) students than for Secondary School (SS) students. This same fact was found in the second study, with Mexican students. Besides, in this study, the degree in which "*Teacher use feedback that helps to learn from errors" and* in which *"he/she cares from each pupil"* is more indicative of such a climate for SS than for HS students. Other differences were found between stu-

dents of the two countries within the same school level.

In the study carried out with Spanish students and immigrant students by Alonso-Tapia and Simón (2012), it was found that teaching patterns considered objectively more important for promoting learning —for example, being taught how to work step by step— are considered less important for a learning climate by immigrant students than by Spanish students. On the contrary, immigrant students considered in greater degree than Spanish students that "*promoting public participation"* and "*praising students for personal achievement"* are patterns more indicative of a learning oriented motivational climate.

In a final study, Alonso-Tapia and Moral (2010) found also differences between the value that HS students and non-university adults confer to different aspects of teacher's activity when considering to what extent their classroom motivational climate is learning oriented. Their results showed, on one hand, than HS students value more than adults that "*Classroom activity is well organized*", and, on the other hand, that adults give more importance than adolescents to the fact that the *"teacher helps them to learn from their own mistakes"*.

As for gender differences, Sinclair and Fraser (2002) found that that boys and girls have different perceptions of classroom learning climate and concluded that when this happens, environmental change

attempts need to involve different interventions for students of different genders. So it was considered interesting to test whether similar implications could be derived from our study on CMC.

The results just described suggest the need to go on looking for the kinds of difference between students from different cultural contexts, and it is what we did in the present study with Secondary and Sixth Form French students. A different cultural and language context would allow us to test whether there are differences between the structure of the CMC in both countries, and of deducing the measurement and educational implications of such differences if they were present.

Method

Participants

The sample was chosen for reasons of convenience. A total of 749 French students from Poitiers (253 males and 496 females, 33.7% and 66.3%) participated in this study. They were students from a Secondary and High School, Vocational Education and Sixth Form. The age spanned from 14 until 23 years old (M = 17.09; SD = 1.59). The sample was randomly divided into three sub-samples with equal number of subjects. The first sample was used for carrying out the initial analysis and the rest, for cross-validating the results.

Measures

In order to test our hypotheses, the following instruments were used:

The Classroom Motivation Climate Questionnaire, CMCQ (Alonso-Tapia & Fernández, 2008), translated to French. It includes 32 items, which measure the degree in which the teacher makes use of 16 strategies or teaching patterns (represented together with examples in Table 1). It is supposed that the presence or absence of such patterns can affect learning motivation in opposite ways. The items were answered in a five-point Likert scale, in which the students decided on the degree of agreement with their content. With the aim of avoiding the acquiescence phenomenon when answering, the patterns were assessed through two items, one positive and another negative. The psychometric features of the CMC-Q in previous study were satisfactory, with reliability indexes between .92 and .93.

Five independent scales designed for assessing the *Perceived teacher role in changing student's motivational characteristics, as well as student's satisfaction with teacher's work* all of them translated to French: (1) interest in subject attributed to teacher's work (α = .72); (2) effort favoured by teacher's work (α = .69); (3) perceived ability due to teacher's work (α = .74); (4) success expectancies due to teacher's work (α = .65); and

(5) satisfaction with teacher's work (α = .72). The first four characteristics had been shown to be sensitive to changes in classroom climate as well as good predictors of students' Satisfaction with teachers' work (Alonso-Tapia & Fernández Heredia, 2008). Examples of items of these scales are shown in Table 2.

Procedure

In order to preserve anonymity and to avoid lost values, data were collected by computer. The students filled in the questionnaires in 50-minute sessions, divided according to the groups and courses to which they belonged. One of the researchers stayed in the classroom during their completion and provided precise instructions, so that students could fill in the questionnaires in relation to the teacher and subject they had to take as reference.

Data analysis

Once the questionnaires were gathered, the correlations between all the variables in CMC were calculated (see Table 3). Then several confirmatory factor analyses were carried out with the aim of testing whether French data fit to the model, and whether they were similar to those of the original studies carried out with the Spanish sample.

Table 2

Item Examples of Scales Assessing the Role Attributed to Teacher in Variables Assessing Different Aspects of Perceived Motivational Change

Scale	Item example
Interest	If I am very interested in this subject, it is due to the way we work with this teacher.
Perceived ability	A good quality of this teacher is that she makes me feel able enough to learn by myself.
Effort	Thanks to the way this teacher encourages me, I try to learn more and more.
Success expectancies	Taking into account the way in which this teacher teaches, it is unlikely for me to get good marks. (–)
Satisfaction	If one could choose the teacher, I would suggest my peers to choose my own one without doubting it at all.

Table 3

Correlations Between CMC Observed Variables. SPANISH SAMPLE (Above diagonal) and FRENCH SAMPLE (Below diagonal)

	TUV[1]	TAPK	TRT	TIP	TML	LOCS	CAWO	TSA	TSS	TUE	CRA	TUF	TAFL	TPP	TTE	TCP
TUV	1	.510**	.379**	.488**	.534**	.549**	.456**	.244**	.541**	.538**	.335**	.341**	.372**	.454**	.391**	.569**
TAPK	.408**	1	.397**	.485**	.443**	.484**	.450**	.287**	.494**	.464**	.510**	.358**	.360**	.390**	.335**	.402**
TRT	.369**	.397**	1	.480**	.480**	.480**	.396**	.340**	.482**	.338**	.440**	.351**	.320**	.444**	.325**	.424**
TIP	.427**	.385**	.387**	1	.534**	.543**	.551**	.438**	.618**	.374**	.505**	.509**	.400**	.466**	.525**	.537**
TML	.422**	.333**	.372**	.454**	1	.532**	.514**	.397**	.509**	.485**	.545**	.388**	.455**	.542**	.447**	.530**
LOCS	.470**	.395**	.370**	.413**	.371**	1	.599**	.379**	.589**	.471**	.507**	.429**	.480**	.531**	.410**	.570**
CAWO	.433**	.468**	.375**	.479**	.325**	.580**	1	.389**	.585**	.357**	.598**	.456**	.460**	.502**	.590**	.613**
TSA	.487**	.402**	.373**	.546**	.395**	.420**	.427**	1	.430**	.179**	.315**	.335**	.222**	.305**	.344**	.294**
TSS	.457**	.485**	.372**	.412**	.347**	.470**	.516**	.492**	1	.509**	.548**	.467**	.339**	.474**	.460**	.572**
TUE	.418**	.415**	.340**	.387**	.319**	.362**	.419**	.377**	.412**	1	.356**	.307**	.281**	.413**	.276**	.444**
CRA	.464**	.436**	.380**	.483**	.361**	.519**	.477**	.508**	.483**	.360**	1	.514**	.346**	.488**	.490**	.400**
TUF	.313**	.286**	.304**	.344**	.226**	.378**	.434**	.278**	.371**	.334**	.314**	1	.305**	.469**	.537**	.443**
TAFL	.432**	.385**	.321**	.453**	.352**	.428**	.457**	.489**	.421**	.343**	.532**	.296**	1	.342**	.420**	.519**
TPP	.432**	.357**	.341**	.464**	.357**	.420**	.417**	.478**	.402**	.366**	.447**	.326**	.471**	1	.417**	.535**
TTE	.449**	.480**	.370**	.495**	.372**	.422**	.540**	.480**	.478**	.350**	.504**	.346**	.522**	.472**	1	.486**
TCP	.484**	.429**	.417**	.593**	.435**	.412**	.499**	.526**	.421**	.449**	.507**	.304**	.479**	.504**	.486**	1

Note. TUV: Teacher makes use of novelty; TAPK: Teacher assesses previous knowledge; TRT: Teacher relates different topics; TIP: Teacher induces public participation; TML: Teacher' messages orient to learning; LOCS: Learning objectives are clearly stated; CAWO: Classroom activity is well organized; TSA: Teacher supports autonomy; TSS: Teacher teaches to work step by step; TUE: Teacher uses many examples; CRA: Classroom rhythm is adequate; TUF: Teacher use feedback that help to learn from errors; TAFL: Teacher assesses "for" learning; TPP: Teacher praises student's progress; TTE: Teacher treats pupils with equity; TCP: Teacher cares from each pupil.

First, the structure suggested by the original work of Alonso-Tapia and Fernández (2008), in which all indicators saturated in one unique factor, based on theoretical considerations, was used as baseline model in order to estimate the data fit to the structure by means of confirmatory techniques (CFA-1) using the AMOS program (Arbuckle, 2003). Estimates were obtained using the maximum likelihood method. In order to estimate model-fit, absolute fit indexes (χ^2, χ^2/df, GFI), incremental fit indexes (IFI) and noncentrality fit indexes (CFI, RMSEA) were used, as well as criteria for acceptance or rejection of the degree of adjustment described by Hair, Black, Babin, Anderson and Tathan (2006). As previous analyses modifying the variable used for fixing the model had shown that there were no differences in fit indexes, it was decided to use the same variable of previous studies —"Teacher uses feedback"—, as it had been the one with greater load.

Second, two multi-group confirmatory analyses were carried out in order to cross-validate the results of the previous analysis. The first analysis was carried out using the three French sub-samples, and the second one using the Spanish sample ($n = 212$) and a French sub-sample composed of those students whose age was similar to that of the Spanish sample ($n = 525$). The theoretical model proposed was used as baseline for comparison without any restriction for parameter equality between samples. Against this model, several models were estimated and compared, in which equality between the groups was imposed for different sets of parameters. The relative decline in goodness-of-fit was assessed by means of the difference in the chi-square statistic between the model with restrictions imposed, and the model without restrictions. In case of significant decline in goodness of fit, it was decided to analyse the reasons of such decline testing which differences between regression weights were significant with the Z-test of Clogg, Petkova, and Haritou (1995).

Third, with the aim of testing whether gender had a significant effect on the structure of motivational climate questionnaire, the French sample was divided in two sub-samples by gender, and a re-estimation by groups was carried out.

Fourth, the reliability of CMCQ and of the rest of the scales was calculated for the French sample.

Five, in order to get additional information on the external validity of the CMCQ, correlations between this questionnaire and the motivational variables which may depend on it —interest, perceived ability, effort, and outcome expectancies— were calculated. Moreover, regression analyses were carried out using the backward method in order to estimate the degree in which CMC and the aforementioned motivational variables allowed predicting "Satisfaction with teacher's work".
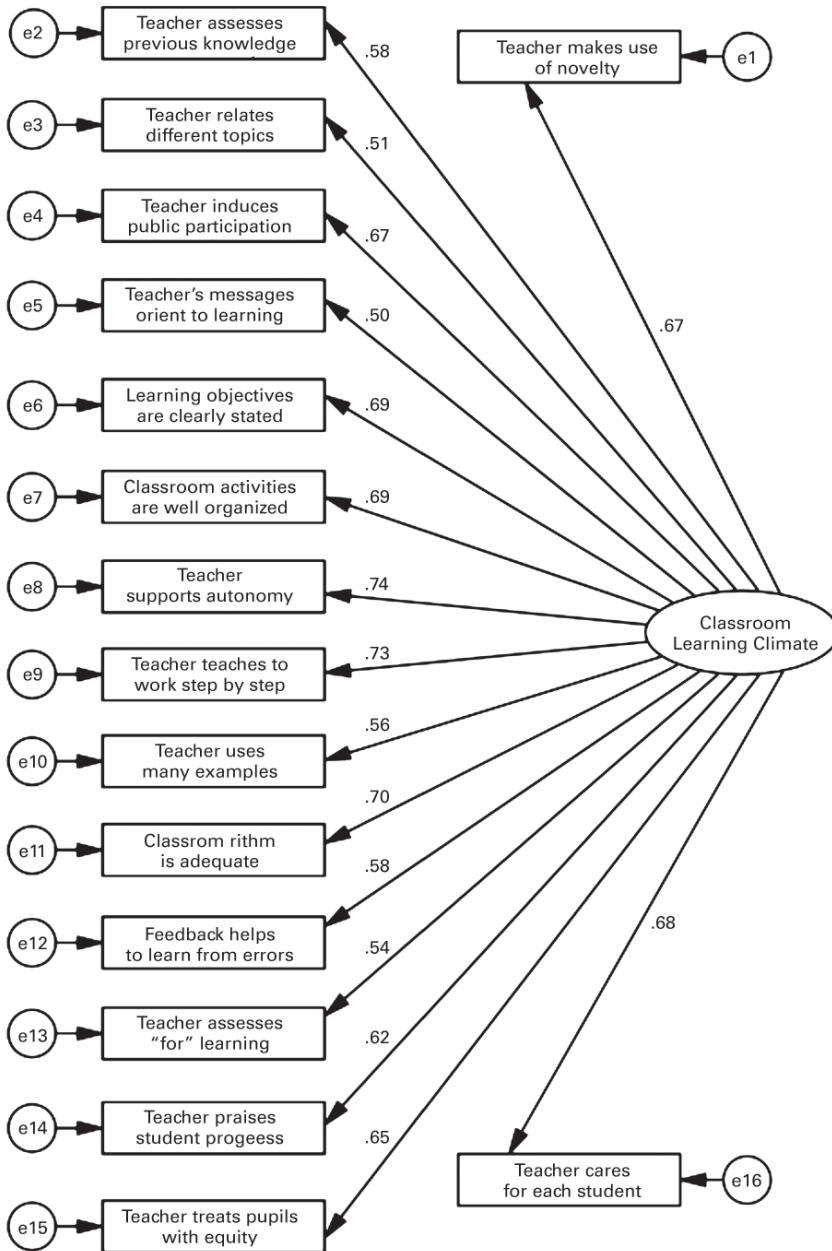
Figure 1. CMC-Q: Initial confirmatory standardized solution.

Finally, in order to see whether the CMC created by different teachers was significantly different, every teacher received the mean of his/her pupils' score in the CMC, and a one-factor ANOVAs was carried out.

Results

Initial confirmatory factor analysis

Figure 1 shows the standardised estimates of the confirmatory model, as well as the squared multiple correlations. All the loadings (λ) were significant ($p < .001$). Table 4 shows the fit statistics of the proposed model (CFA1). Chi-square statistic was significant, probably due to the sample size (Hair et al., 2006), but the ratio χ^2/df ($\chi^2/df = 2.03 < 5$) and the remaining adjustment indexes were well inside the limits that allowed the model to be accepted: RMSEA = $0.06 < 0.08$, IFI = $.94 > .90$; GFI = $0.90 = .90$; and CFI = $0.94 > .90$.

Multi-group cross-validation analyses (CFA-2)

In order to test the validity of the model, a multi-group analysis was carried out using the three sub-samples in which the total sample had been divided ($n = 245$, 248 and 256). Again, Chi-square was significant, probably due to sample size, but all the other statistics were well inside the limits that allowed the model to be accepted: The ratio $\chi^2/df = 1.99 < 5$, RMSEA = $0.03 < 0.08$, GFI = $.90 = .90$, CFI = $.94 > .90$) and IFI = $.94 > .90$. Moreover, com-

Table 4

Goodness of Fit Statistics for CMC of Base Model of Multi-Group Cross-Validation Analysis (CVA), and of Multi-Group Analysis by Gender

	χ^2	df	p	χ^2/df	GFI	IFI	CFI	RMSEA
CFA-1 ($n = 245$) Base line model	213.17	105	.000	2.03	.90	.94	.94	.06
CFA-2. Cross V ($n = 245, 248, 256$)	629.69	315	.000	1.99	.90	.94	.94	.03
CFA-3 France-Spain ($n = 525, 212$)	535.96	210	.000	2.55	.92	.94	.94	.04
CFA-4 Males-Females ($n = 253, 496$)	511.85	210	.000	2.43	.92	.94	.94	.04

Table 5

CFA-2 Cross Validation of the Model Using Multi-Group Analyses with Three Different Samples. Chi-Square Differences for Model Comparison Against the Unconstrained Multi-sample model

Analysis	Model	df	Chi-square	p
CFA-2: Cross Validation	Measurement weights	30	34.29	.26
	Measurement intercepts	62	70.91	.20
	Measurement residuals	94	95.76	.43
CFA-3: France-Spain	Measurement weights	15	73.74	.00
	Measurement intercepts	31	329.11	.00
	Measurement residuals	47	464.89	.00
CFA-4: Males-Females	Measurement weights	15	17.36	.29
	Measurement intercepts	31	37.27	.20
	Measurement residuals	47	50.98	.32

parison statistics included in Table 5 show that fit is not reduced even if restrictions on measurement weights, measurement intercepts and measurement residuals were imposed. Therefore, it may be concluded that the model is well estimated, and so it should not be rejected.

Multi-group analysis France-Spain

Results obtained in both countries were compared using, in addition to the group of French students of sixth form, the group of similar age of the study of Alonso-Tapia and Fernández (2008). Related to this analysis, fit indexes fell inside acceptable limits (Table 3, CFA-3). However, the model comparison statistics presented in Table

4 (CFA-3) show that fit was significantly reduced when restrictions on regression weights, measurement intercepts and on equality for residuals were imposed. This means that French and Spanish students' estimations of the motivational value of teaching patterns differ in some aspect. Therefore, in order to know which patterns of teacher's activity were valued in different degree by the students of each country, regression weights were compared using the Z statistic of Clogg, Petkova and Caritou (1995). As it can be seen in Table 6, there were significant differences in weights of ten components of the CMC ($z > 1.96$). Only in one case French students valued a teaching pattern in greater and significant degree than Spanish students (-*Teachers supports Autonomy-;* difference: 0.37; $z = 4.79$).

This fact implies that such pattern is perceived more important for motivation in France than in Spain. The opposite happens in the remaining cases.

Multi-group analysis by gender

The third multi-group analysis tested the validity of the structure identified as a function of gender. Again it can be seen that the fit indexes χ^2/df, RMSEA, GFI, CFI and IFI were inside acceptable limits (see Table 3, CFA-4 Males/Females). Besides, statistics' results corresponding to model comparison, presented in Table 4 (CFA-4),

showed that fit is not significantly reduced even considering different restrictions that were imposed. Therefore, it can be concluded that the model is equally valid both for males and females, and so it should not be rejected.

Reliability analysis

The results in the diagonal of Table 7 show the Cronbach's coefficient for the CMCQ and for the remaining scales. The reliability index of the CMCQ was excellent ($\alpha = .93$) and similar to the coefficients of this scale found in previous studies. On the other hand,

Table 6

Differences Between Measurement Weights in CMCQ of French and Spanish Students

Teaching pattern	Beta France	Se[1] France	Beta Spain	Se Spain	Difference	Z Clogg
Teacher makes use of novelty	1.12	.07	1.20	.11	–.09	–1.08
Teacher assesses previous knowledge	1.02	.07	1.16	.12	–.14	–1.73
Teacher relates different topics	.82	.07	1.08	.12	–.26	–3.32
Teacher induces public participation	1.16	.07	1.51	.12	–.36	–4.38
Teacher' messages orient to learning	.83	.06	1.36	.11	–.53	–7.18
Learning objectives are clearly stated	1.04	.07	1.36	.11	–.32	–4.07
Classroom activity is well organized	1.09	.06	1.45	.11	–.36	–4.93
Teacher supports autonomy	1.14	.07	.77	.11	.37	4.79
Teacher teaches to work step by step	1.05	.06	1.56	.12	–.51	–6.80
Teacher uses many examples	1.09	.08	1.11	.13	–.02	–.25
Classroom rhythm is adequate	1.32	.07	1.27	.12	.05	.61
Teacher use feedback	1.00	.00	1.00	.00	.00	.00
Teacher assesses "for" learning	.71	.07	1.11	.13	–.40	–4.80
Teacher praises student's progress	1.09	.07	1.27	.12	–.17	–1.98
Teacher treats pupils with equity	1.34	.08	1.45	.15	–.11	–1.18
Teacher cares for each student	1.21	.06	1.46	.12	–.24	–3.10

Note.[1] Se: Standard error.

reliability indexes of the rest of scales were acceptable enough for corresponding scores to be used if needed, though some of them are a bit low.

Correlation analyses

Table 7 shows correlations between the CMC, the motivational variables that can depend on it, and satisfaction with teacher's work. As can be seen, CMC correlates in a positive and significant way with every specific motivational variable potentially sensitive to environment's influence to which it could affect (change in interest, in perceived ability, in effort, and in success expectancies), as well as with Satisfaction with teacher's work.

The correlations between the aforementioned motivational variables are similar to that found in earlier studies with adults (Alonso-Tapia & Moral, 2010).

Regression analysis

A regression analysis was carried out using the backward method in order to see the relative degree in which CMC and motivational variables that may depend on it —change in interest, perceived ability, effort and success expectancies— contributed to predict the degree Satisfaction with teacher's work. As it can be seen in Table 8, this last variable was mainly influenced by classroom climate, although all variables had a very significant weight.

Table 7

Correlations and Internal Consistency of the Scales [1,2]

$n = 452$	CMC	INT	PA	EF	SE	SAT
Classroom motivational climate oriented to learning (CMC)	.93	.694**	.677**	.625**	.686**	.767**
Interest attributed to teacher work (INT)		.74	.696**	.636**	.711**	.754**
Perceived ability attributed to teacher work (PA)			.66	.639**	.686**	.727**
Effort disposition attributed to teacher work (EF)				.59	.629**	.672**
Success expectancies attributed to teacher wok (SE)					.67	.746**
Satisfaction with teacher work (SAT)						.80

Note.[1] Values in the diagonal correspond to the internal consistency of the scales. [2] ** = value significant at 1%.

Table 8

Regression Analysis. Criterion: Satisfaction Attributed to Teacher's Work

			Predictors: Standardized Regression Coefficients				
R	R²	P	CMC	Change in Interest	Change in Perceived ability	Change in Effort	Change in success expectancies
.86	.74	.000	.29***	.21***	.16***	.12***	.21***

Note. CMC: Classroom Motivational climate; ***$p < .001$.

ANOVA of CMC differences between teachers

Scores of teachers from 39 different classrooms were analysed. Differences in CMC were highly significant ($F_{gl\ (38,\ 710)} = 10.33$, $p < .0001$). The rank of teachers' scores went from 92 to 140.

Discussion

The aim of this article was to test whether the characteristics defining a CMC learning oriented for teenagers were the same in different cultural contexts as, if it was the case, this fact would have theoretical and practical implications. In order to achieve this objective, the structure of the CMCQ in a sample of French students was identified and compared with the structure identified in Spanish students. Now the question is: What have the results highlighted?

First of all, the results obtained point out that the way in which classroom motivational climate is operationalized thought the CMCQ is valid not only in Spain but also in France, both for Secondary School (senior school & sixth form) and for Vocational Education. Results showed, in France as in Spain, that the CMCQ has a well estimated structure, and the results of the different AFCs —based on randomly or gender set groups— support this conclusion. This result means that there are a series of teaching strategies —those included in the CMCQ (See Table 1)— that —in the degree in which they are used together— turn out to be motivating for most students —Spanish (Alonso-Tapia & Fernández, 2008), Mexican (Alonso-Tapia & Fernández, 2009) and French (this study)—. The generalised use of such strategies within the teaching activity would favour motivation for learning of most students.

Second, some studies reviewed by Plaut and Markus (2005) have shown that people from different countries have different models of competence and motivation that influence the way they behave in teaching and learning contexts. Our results extend their analysis show-

ing that there are also significant differences in the way of perceiving the motivational value of teaching patterns between French and Spanish students. Specifically, the fact of "promoting autonomy" is valued more positively in France than in Spain as a good indicator of a learning-oriented CMC, whereas the opposite happen with most teaching patterns included in the CMCQ, whose motivational value is greater for Spanish than for French students. So, it is convenient to take into account this fact in order to improve adjustment of actions aimed at creating a motivation-enhancing environment.

Third, in line with previous studies (Alonso-Tapia & Fernández, 2008; Alonso-Tapia & Moral, 2010), students associate the presence of teaching patterns included in the CMCQ to positive changes in interest, perceived ability (self-efficacy), success expectancies, and effort. This fact suggests that CMC can affect not only the adoption of learning goals by students, but also the degree of self-efficacy perception and the anticipation of positive consequences when learning, as well as the enhancement of the interest in the subject.

Forth, regression analyses have shown that "Satisfaction with teacher work" depends mainly on CMC and on perceived change in motivational variables that, in turn, is attributed to CMC. This result highlights again the importance of creating a learning oriented CMC

paying attention first, at least to the whole set of patterns included in CMC, and second, to those patterns that, according to cross-cultural studies like this one, show which of these patterns are especially important for motivating students of particular cultural contexts or educational levels.

Five, the fact that there are differences not only between students, but also between "groups" of students of different teachers, raises an important question with theoretical and practical implications: Which teachers' characteristics are responsible of such differences between groups? This is an important question because training programs aimed at enable teachers for motivating their students should focus on such characteristics. The fact that a teacher creates or not an adequate CMC may depend on teacher's motivational knowledge, on his/her expectancies and goals related to students, on acquired teaching habits, etc. This question has not been adequately studied. Haselhuhn, Al-Mabuk and Gabriele (2007), based on evidence gathered from 97 teachers, suggested that specific classroom practices and teaching behaviours depend on teacher's knowledge and beliefs. However, the "dependent variable" was assessed asking teachers to rate their own classroom goal structures and practices, a fact that may have provided a view of what happens in the classroom that does not correspond to the students' view. This

fact means that we cannot be sure that differences in CMC perceived by students, and whose power for predicting changes in different motivational variables is high, depends on the teachers' characteristics above mentioned. So, this is a question to be studied.

Limitations and new research questions

The present study has some limitations that raise new research questions. The dependent variables have been motivational, and so results do not provide information of CMC relation with achievement. A previous study (Alonso-Tapia & Moral, 2010) has provided some evidence, but it is scarce and so this point deserve to be investigated.

Moreover, CMC is only a part of classroom climate, as this one includes also classroom discipline climate (managing) and classroom emotional climate (Evans, Harvey, Buckley, & Yan, 2010). It may be that classroom motivational climate adequacy is conditioned not only by the aforementioned 16 variables and assessed by CMCQ, but also by those configuring discipline climate (Almog & Shechman, 2007; Furlong, Morrison, & Fisher, 2005; Infantino & Little, 2005) or emotional climate. In relation to this last

possibility, several studies have obtained results indicating that adolescents' academic motivation level is greatly influenced by their perceptions of the level of support and encouragement provided by parents and teachers (Eccles & Jacobs, 1986; Grolnick, Gurland, Jacob, & Decourcey, 2002; Grolnick & Ryan, 1989; Wigfield & Eccles, 1992). On the other hand, the quality, quantity and directions of the relationships (between teachers and students, and among students themselves) influence the social climate, affecting further students' self-concept, motivation and performance (Fraser, 2010). This would indicate that social climate is an aspect that might affect or be affected by CMC, a point that deserve also being investigated.

Finally, there are factors than can modulate student's perception of CMC, such as their expectancies, motivational orientations, student's knowledge and study strategies, etc., as students enter the classroom with these characteristics. There is also some evidence on the role of such factors, but is not concluding (Alonso-Tapia & Fernández, 2009; Alonso-Tapia & Villasana, 2014). So the moderating role that such variables can play on how students perceive the CMC should also be investigated.

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