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# Differences between Immigrant and National Students in Motivational Variables and Classroom-Motivational-Climate Perception

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The objective of this study is to see whether Immigrant (IM) and Spanish (National) students (SP) need different kinds of help from teachers due to differences in motivation, family expectancies and interests and classroom-motivational-climate perception. A sample of Secondary Students -242 Spanish and 243 Immigrants- completed questionnaires assessing goal orientations and expectancies, family attitudes towards academic work, perception of classroom motivational climate and of its effects, satisfaction, disruptive behavior and achievement. ANOVAs showed differences in many of the motivational variables assessed as well as in family attitudes. In most cases, Immigrant students scored lower than Spanish students in the relevant variables. Regression analyses showed that personal and family differences were related to student's satisfaction, achievement and disruptive behavior. Finally, multi-group analysis of classroom-motivational-climate (CMC) showed similarities and differences in the motivational value attributed by IM and SP to each specific teaching pattern that configure the CMC. IM lower self-esteem could explain these results, whose implications for teaching and research are discussed.
*Keywords: individual differences in motivation, goal orientations, classroom-motivational-climate, educational expectations, multi-cultural psychology.*

El objetivo de este estudio es examinar si los estudiantes inmigrantes (IM) y los (nacionales) españoles (SP) necesitan diferentes tipos de ayudas de sus profesores debido a las diferencias que pueda haber entre ellos en motivación, expectativas familiares, intereses y percepción del clima motivacional de clase. Una muestra de alumnos de Secundaria –242 españoles y 243 inmigrantes– completaron cuestionarios que evaluaban su orientación a metas, sus expectativas, las actitudes familiares hacia el trabajo escolar, la percepción del clima motivacional de clase y sus efectos, su nivel de satisfacción escolar, la conducta disruptiva y los logros académicos. Varios ANOVAs pusieron de manifiesto las diferencias en muchas de las variables motivacionales evaluadas así como en las actitudes familiares. En la mayoría de los casos los inmigrantes puntuaron más bajo que los españoles en las variables relevantes. Asimismo, los análisis de regresión mostraron que las diferencias personales y familiares se relacionaban con la satisfacción de los alumnos, su rendimiento y sus conductas disruptivas. Finalmente, el análisis multigrupo del Clima Motivacional de Clase (CMC) puso de manifiesto las semejanzas y diferencias entre el valor motivacional atribuido por los IM y los SP a cada una de las pautas docentes que configuran el CMC. La menor autoestima de los IM podría explicar estos resultados cuyas implicaciones para la enseñanza se comentan.
*Palabras clave: diferencias individuales en motivación, orientación a metas, clima motivacional de clase, expectativas educativas, psicología multicultural.*

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Teachers often ask themselves "What can I do to improve students' interest and effort to learn? This is a question about the kind of environment they can create when organizing and developing teaching and learning activities for their students. Researchers have tried to answer it studying the kinds of classroom goal structure (Midgley et al., 2000), of classroom motivational climate (Alonso-Tapia & Fernández, 2008; Ames, 1992) or of teaching practice (Felner, Seitsinger, Brand, Burns, & Bolton, 2007; Urdan & Turner, 2005; Wigfield & Wentzel, 2007) that most promote motivation and learning, that favour greater student's satisfaction and that best prevent the appearance and consolidation of disruptive behaviors. However, studies carried out from a multicultural perspective have shown that differences in socio-cultural background are associated to motivational profiles that, to be activated, would need different learning environments (Kumar & Maehr, 2007; Pajares, 2007; Plunkett, Behnke, Sands, & Choi, 2009; Saili & Hoosain, 2007; Zusho & Njoku, 2007). In fact, as illustrated in Figure 1, existing differences in socio-cultural background –for example, in family values, attitudes or expectancies related to learning and achievement– may be related to students' motivational profiles –for example, learning orientations or expectancies-. These profiles, in turn, might moderate the motivational value that students attribute to different learning environments –for example, different teaching patterns–, and differences in this motivational value might be related to differences in context-sensitive motivational variables such as student satisfaction, disruptive behavior and achievement. Given this chain of potential relations, its identification would have practical implications for organizing and developing teaching in countries that, like Spain, have a high number of immigrant students. So we decided to make an exploratory study looking for initial evidence on which to base future intervention studies.

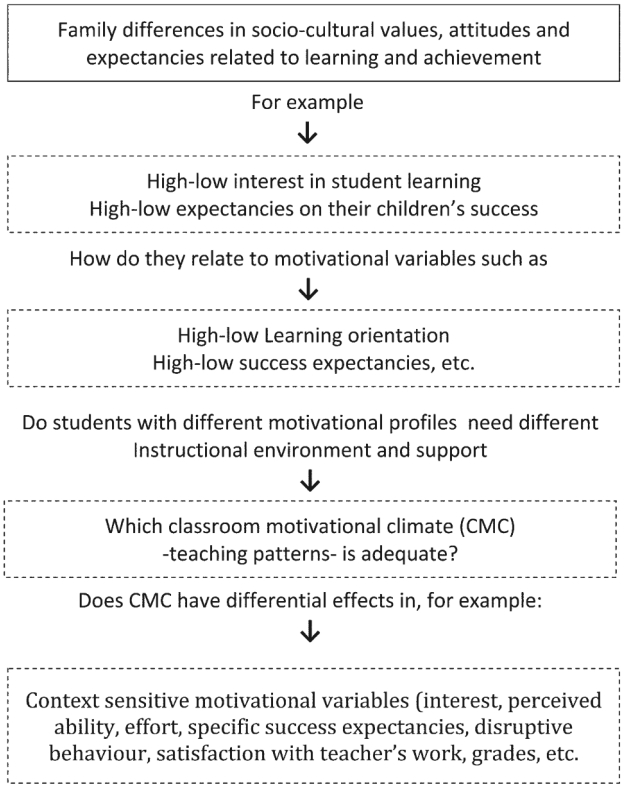


*Figure 1*. Explored relations between sociocultural variables, motivation and classroom climate.

## Theoretical framework

In order to achieve our general objective, three theoretical points have to be clarified first to establish the expected relations: 1) The perspective on socio-cultural background, 2) the perspective on academic motivation and its consequences, and 3) the perspective on classroom motivational climate and its effects.

*Socio-cultural background.* Studies revised by Plaut and Markus (2005) have shown that people coming from different countries have different models of competence and motivation that influence the way they behave in teaching and learning contexts. These different models define the socio-cultural background of the students. According to these authors, in European-American cultural context (EACC) individual actions are generally conceived as coming from attributes of the person –competence and motivation- while in East-Asian cultural context being competent or motivated are conceived as depending on the relations between the person and the environment characteristics –circumstances–. For example, for EACC independence, self-reliance, personal responsibility, self-actualization, self-efficacy, self-determination and control are personal characteristics highly valued, as they are the cornerstones of individual success. However, in Asian and Latin American context motivation is more socially oriented, that is, success tend to be associated with affiliation and social belonging, and group goals –the achievement of goals that benefit the group (family)– are more important than individual goals. For people in these cultures, individual and social successes are not mutually exclusive but entangled, as personal success depends on success of the groups to which one belongs.

The socio-cultural differences in conceptions of competence and motivation just pointed out influence family attitudes towards the student as well as teacher and student behavior in expected ways inside each culture. However, due to immigration, people coming from different cultures share the same classroom and teacher. He or she has to deal with a multicultural group of students that "may" demand different teaching and classroom management practices –autonomy versus direction, individual work versus group work, individual success recognition versus group success recognition, intrinsic or extrinsic motivation stimulation, etc.-, that is, students "may" demand different

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classroom motivational climate. Thus, if the objective is to create inclusive environments, the question arises whether teachers should act or not in a different way depending on the cultural characteristics of their pupils. However, it is necessary to know first whether there are differences in family characteristics related to learning and achievement, as family is the link to the foreign culture.

*Academic motivation.* Different reviews of motivation literature agree that *achievement goal theory* is presently the most widely accepted explanation of achievement motivation in learning contexts (Elliot, 2005; Harackiewicz, Barron, Pintrich, Elliot, & Trash, 2002). A goal orientation is a pattern of beliefs that produces "different ways of approaching, engaging in, and responding to achievement situations" (Ames, 1992, p.261). There are at least three goal orientations (GO) according to standard achievement goal theory (Alonso-Tapia, Huertas, & Ruiz, 2010; Meece, Anderman, & Anderman, 2006): students are *Mastery-approach oriented* (M-Ap), *Performance-approach oriented* (P-Ap), and *Performance-avoidance oriented* (P-Av). However, recent studies have shown that GO should be conceived as encompassing concepts including multiple and more specific goals –learning, be of help to others, achieve positives grades, overcome other's outcomes, obtain external rewards, avoid failure, etc.-, expectancies and self-regulation styles (Alonso-Tapia, 2005; Alonso-Tapia, Huertas, & Ruiz, 2010; Boekaerts, Koning, & Vedder, 2006; Grant & Dweck, 2003; Valle et al., 2003). The question, then, is "are there differences between students coming from different socio-cultural backgrounds in GO and in the specific goals underlying them? Moreover, if there are motivational differences, where do they come from? Do family or cultural values and engagement in their sons' and daughters' academic achievement play a role in these differences?

Most evidence on motivational differences between secondary and high school students from different cultures has not assumed the goal theory perspective, though there are some exceptions. For example, McKinerney and Ali (2006) found that achievement goal patterns of high-school students supported a multidimensional and hierarchical motivation model that was invariant across cultural groups. Witkow and Fuligni (2007) found that achievement goal patterns of Asian (As), Latin (LS) and European-American (EAS) students adjusted to the 2x2 model of Elliot and McGregor (2001). Zusho and Njoku (2007), using the thrichotomous model of AGO compared Nigerian, Asian-American and Anglo-American students and found differences not only in the degree in which these groups manifest to pursue each kind of goals, but also in the relationships between goal preferences. However, these results were based only on correlation and exploratory factor analysis, though multi-group confirmatory factor analysis would have been more appropriated. In summary, there are three facts that suggest the suitability of looking for differences in motivational orientations and in the specific goals underlying them: a) studies on the relation between culture and motivation in secondary and high school students from goal theory perspective are scarce, especially in Spain; b) results available suggest some motivational differences related to type of culture, but also some invariance; and c) the studies have been carried out from different achievement goal-models. If consistent differences in goal orientations were found, it will be possible to study, on one side, whether they are related to socio-cultural differences found related to learning and achievement, as some studies suggest (Huynh & Fuligni, 2008; Plunkett, Behnke, Sands, & Choi, 2009), and, on the other, to classroom motivational climate and to variables potentially affected by it.

*Classroom motivational climate.* Before deciding whether teachers should act in different ways to enhance students' motivation to learn depending on differences on socio-cultural background, it is necessary to know a) which variables configure the classroom motivational climate "that most favour interest and effort to learn", b) which are the positive and negative effects of CMC, and c) whether such variables are the same for immigrant than for national students.

According to achievement goal theory (Ames & Archer, 1988, Elliot, 2005; Harackiewicz et al., 2002), positive and negative patterns of cognition and affect defining mastery/learning, performance-approach or performance-avoidance goal orientations can be elicited by different situational factors and instructional demands. So, it is necessary to examine how the classroom can be structured to optimize student motivation. A first intent to do it was carried out by Ames (1992), who coined the concept of *classroom motivational climate* (CMC). She considered that CMC can favour mastery or performance goal orientation depending on patterns of teacher's activity in six areas of teaching represented by the acronym TARGET: task, authority, recognition, grouping, evaluation and time. It was supposed that specific teaching patterns related to each of these areas could favour the mastery orientation, whereas the lack of these patterns, or patterns opposite to them would obstruct this orientation. Evidence supporting the importance of all these classroom factors for enhancing motivation to learn has been provided by the revision of Urdan and Turner (2005).

Midgley et al. (2000) developed an alternative way of approaching the relation between personal GO and classroom factors. This group coined the concept of *classroom goal structure*, and designed an instrument to measure it, the *Classroom Goal Structure Scales* (CGS-S). Its three scales–Mastery GS, Performance-approach GS, and Performance-Avoid GS- include teachers' messages stressing respectively the importance of mastery, competition and the importance of avoiding to appear non-intelligent. These scales have been the most frequently

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used for research purposes. However, an important limitation is that they rely exclusively on "teacher's messages", as if this factor was the only one affecting goal orientation.

Recently, Alonso-Tapia and Fernández (2008, 2009a), tried to overcome CSG-S limitations. In a previous work Alonso-Tapia and Pardo (2006), in line with ideas of Ames, had summarized a set of teaching strategies that could be organised around different points along the learning sequence, and whose effectiveness for enhancing learning motivation had been pointed out by research. Based on these strategies, the Classroom Motivation Climate Questionnaire (CMCQ), whose structure is shown in Table 1, was developed. This questionnaire assesses the degree in which students declare that different teaching patterns contribute to create a classroom motivational climate favouring their motivation to learn, and is able to detect when, for a particular group, one of more of the teaching patterns that configure the CMC lack the motivational value they are expected to have. Different studies carried out on its structural and predictive validity have shown that the classroom motivational climate model (CMC) underlying the CMC-Q has grater predictive validity than the CSG-S, and that it is sensitive enough to differences between groups (Alonso-Tapia & Fernández, 2008, 2009a). So, it was decided to rely in Ames' CMC model, made operational by means of the CMCQ, to detect differences in CMC between Immigrant and Spanish students, to study when the consequences of CMC are positive (satisfaction) or negative (disruptive behavior), and to study whether being national or immigrant plays a role in producing such consequences. In relation to this point we considered the possibility that Spanish and Immigrant scores in the classroom motivational climate measure (CMC-Q) do not differ in a significant degree. However, if significant differences were found in some of the personal or family variables assessed in this study, and if these differences were related to grades, satisfaction and disruptive behavior, it might be that differences in the motivational value attributed to the "specific components" of CMC-Q exist. So, it seems important to test this possibility as it has practical implications.

Summarizing, taking into account the above ideas on socio-cultural background, on academic motivation and on classroom climate, we designed this exploratory study with the following *specific objectives*:

a) To detect whether there are motivational differences between immigrant and national students 1) in family attitudes towards academic work (interest and success expectancies) that could affect achievement, 2) in goal orientations and in the specific motives underlying them and 3) in academic success expectancies; and to analyse whether differences in family attitudes allow predicting differences in motivation and expectancies.

b) To detect also whether there are differences: 1) in the general perception of classroom motivational climate, as well as in the motivational value attributed to each specific teaching pattern that configure the CMC-Q; 2) in the motivational characteristics related specifically to classroom conditions (specific "interest, perceived ability, success expectancies and effort"; 3) in academic satisfaction; 4) in achievement level and; 5) in the amount of disruptive behavior, and to analyse whether such differences are related. If there were not differences in CMC-Q or in the specific teaching patterns that configure it, or if existing differences were not related to differences in the remaining

Table 1
*Teaching patterns assessed by the CMCQ with item-examples*

| |
|---|
| *Teacher makes use of novelty.* This teacher (T) often presents 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.*(-)[1]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 uses feedback that helps 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. |

[1](-) = The item example scores negatively on the scale

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variables, then the suggested need of adapting instruction in different ways for national or immigrant students had also to be questioned.

c) To analyze the relationships between family and personal variables in which significant differences had been detected, on one side, and perceived CMC differences, student's satisfaction, achievement and disruptive behavior, on the other. If family and personal variables were not associated in a significant degree to differences in CMC-Q perception and in final dependent variables, then the suggested effect of socio-cultural differences in such variables should be questioned too.

## Method

### *Participants*

A total of 485 Secondary School students, 221 males and 264 females, from two public schools of Madrid participated in the study, of which 294 were Spanish (Sp) and 198 were Immigrants (Im). The mean age was 14.6 (*SD* = 1.15). They were distributed by course as follows: 1st: 154, 2nd: 146; 3rd: 133; 4th: 46. As their geographical area of precedence, 242 were Spanish and 243 were Immigrants that came from: Latin countries, mainly Ecuador and Colombia (52%), Eastern countries, mainly Romania (21%), Maghreb countries (17%), Far-East countries (4%), Sub-Sahara countries (2%) and other European countries (4%).

### *Materials*

To achieve our objectives the following questionnaires were used.

a) *The abbreviated form of the Motives, Expectancies and Values Questionnaire* (MEVA) for Secondary and High School students (Alonso-Tapia, 2005). This questionnaire of 76 items allows assessing the three GO usually described in motivational literature, as well as nine specific goals encompassed by each GO. The scales encompassed in each GO are shown the following: 1) *Mastery Approach* (α = .92): Desire to learn, Desire to be helpful, Desire to avoid school tasks: they are useless (scoring negatively), and Disposition to effort; 2) *Performance Approach* (α = .82)*:* Desire of public success, Desire of extrinsic rewards and Desire to achieve positive marks; 3) *Performance Avoidance* (α = .81)*:* Desire to avoid failure and Desire not to be overcome by negative teacher' attitudes (scoring negatively). Questions in the MEVA do not refer to goals in specific subject domains, but to general academic goals.

b) *An Expectancy-of-Success Scale developed together with the MEVA* (Alonso-Tapia, 2005). This scale has 30 items assessing success expectancies attributed to ability, effort or the help of others (α = .89).

c) *The Classroom Motivational Climate Questionnaire* (CMCQ) (Alonso-Tapia & Fernández, 2008). This questionnaire of 32 items, whose composition is shown in Table 1, has one scale (α = .93), but if necessary it allows also analysing differences in the sixteen teaching patterns that conform the scale.

d) *The Context-Sensitive Motivational Variables Questionnaire* (Alonso-Tapia & Fernández, 2009b). This is a 16-items questionnaire divided in five scales that allow the assessment of the following variables all of them related to the specific subject whose classroom motivational climate had been assessed: 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), 5) satisfaction with teacher's work (α = .72). These characteristics have been shown to be sensitive to changes in classroom climate as well as good predictors of students' satisfaction with teachers' work. Examples of questions of each scale are shown in Table 2.

e) A set of questions to be answered in Likert format scale (1 to 5) exploring students perceptions of characteristics of their families and their own motivation that, according to cultural psychology findings, are relevant for defining cultural models of competence and motivation: 1) family expectancies about his/her academic success, 2) parents interest and engagement in student's academic work, 3) weight of family pressure on motivation for academic work, and 4) Intrinsic or extrinsic reasons to strive for learning. Examples of questions exploring each kind of family characteristics are shown in Table 3.

f) A set of questions to be also answered in Likert-format scale (1 to 5) exploring students perceptions of: a) the degree in which they misbehave in classroom, and b) the perception of the degree of immigrants' satisfaction with school in general. Examples of these items are also shown in Table 3.

Table 2
*Examples of questions of the Context Sensitive Motivational Variables Questionnaire*

*Interest.* The way this teacher teaches makes my interest in the subject increase.
*Perceived ability*. My capacity for understanding this subject is greater due to the teacher way of working.
*Effort.* Due to the stimulus this teacher gives to me, me effort to learn increases day after day.
*Specific success expectancies.* I know I will obtain a grade good enough for me due to my teacher's work.
*Satisfaction with teacher.* If students could choose their teacher, I wood advise them to choose this one. *Teacher cares from each pupil.*

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Table 3
*Examples of questions exploring students' perceptions of their own motivational characteristics, of characteristics of their families related to academic work, and of their own behavioral characteristics*

| |
|---|
| *Intrinsic motivation:* I study mainly because it is amusing and I enjoy doing it. |
| *Immigrants' satisfaction*. Non-Spanish students In my classroom are generally satisfied with school. |
| *Family expectancies of student's success:* My family expects that I will get good grades. |
| *Interest of family in student learning:* My family often devotes time to help me with my school work. |
| *Weight of family pressure on motivation:* I study because I want my family to be proud of me. |
| *Behavior problems*: Sometimes my way of behaving annoys my teachers. |

### *Procedure*

The questionnaires were given to students in two 50 minutes periods corresponding to full class sessions. In order to avoid differences due to reading comprehension ability, items were read aloud to all students. Then, at the end of the school year, the grade in the subject taught by the teacher whose classroom motivational climate had been assessed was obtained in order to test whether differences between students were related to differences in achievement. Finally, three kinds of analysis were carried out:

1) Though alfa reliability indexes for each scale were known, in order to control effects due to measurement error, alfa indexes were calculated in both samples -Immigrants and National students-. However, as no relevant differences were found between them, the results will not be presented.

2) MANOVA analyses of differences between groups in four categories of dependent variables to achieve objectives (a) and (b). Categories of dependent variables for MANOVA were established on the base of their nature: motivational orientations, specific motives, expectancies, intrinsic motivation and family characteristics (external) affecting motivation, and classroom climate and variables theoretically affected by it (context sensitive motivational variables, satisfaction, disruptive behavior and final grade).

3) Regression analyses, using family variables in which significant differences between Sp and Im had been detected as predictors, and as criteria, motivational variables in which differences had been found too.

4) Multi-group confirmatory factor analysis of CMC-Q structures corresponding to Sp and Im students to achieve objective (b). In this analysis, the theoretical model proposed by Alonso-Tapia and Fernández (2008) was used as the base for comparison without any restriction for parameter equality between samples. Against this model, two models were compared, in which equality between the groups was imposed for different sets of parameters: a) The model with equality of factor loadings imposed, and b) the model with additional restriction for error variances equality. 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 with the Z-test of Clogg, Petkova, and Haritou (1995) which differences between regression weights were significant.

5) Regression analyses, using as predictors personal and family variables in which significant differences had been detected and, as criteria, final grade perceived CMC differences, student's satisfaction, achievement and disruptive behavior, to achieve objective (c).

## Results

### *Analyses of differences between Spanish and Immigrant students*

Table 4 shows means and results related to analysis of differences in family characteristics and in the degree of intrinsic-extrinsic motivation that could affect academic work. According to MANOVA results, mean differences in this group of variables were significant (Wilks λ: .911; $F(8, 403) = 15.685$, $p < .0001$). It can be seen that SP-families overcome IM-families in their expectancies of student's success and in the degree of interest in student's academic work manifest in the amount of time they devote to their children. There are no differences in the degree in which students declare that their parents exert pressure for them to work. Nevertheless, when asked about their reasons for carrying out academic work, IM declare to work by intrinsic reasons more than SP and not for satisfying their parents.

Mean scores of each group in goal orientations, in the specific motives underlying them, and in general and specific success expectancies are shown in Table 5. According to MANOVA results, mean differences in goal orientations were not significant (Wilks λ: .985; $F(3, 480) = 2.367$, $p = .070$). However, differences in specific motives were significant (Wilks λ: .933; $F(9, 474) = 3.808$, $p < .0001$). When considered individually, only differences in three specific motives were significant: a) *Desire to avoid school tasks: they are useless* (SP > IM), *Desire of public success* (IM > SP) and *Resilience in front of negative teacher's attitudes* (SP > IM). Differences in *general expectancies as well as in its components* are also significant, and in all cases SP > IM. Given the meaning of the specific motives

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Table 4
*ANOVA of differences between Spanish and Immigrant students in intrinsic motivation, in disruptive behavior and in family characteristics related to academic work*

| | Spanish ($N$ = 294) | | Immigrant ($N$ = 191) | | | |
|---|---|---|---|---|---|---|
| | Mean | *SD* | Mean | *SD* | $F(1,483)$ | Sig. |
| Intrinsic motivation | 8.62 | 2.99 | 9.65 | 2.91 | 14.09 | .000 |
| Weight of family pressure on motivation | 6.89 | 1.60 | 6.82 | 1.74 | .221 | .639 |
| Family expectancies of student's success | 7.75 | 1.99 | 7.27 | 2.08 | 6.50 | .011 |
| Interest of family in student learning | 8.32 | 1.82 | 7.73 | 2.14 | 10.59 | .001 |

and the way they are related to achievement (Alonso-Tapia, 2005), Spanish students overcome Immigrant students in all cases in which this relation is positive. In the case of the *Desire to avoid school tasks: they are useless,* in which scoring low is positive, immigrants have lower scores. It seems that Immigrants have lower expectancies, are less resilient and more concerned to public success, what seems to imply less self-confidence. Nevertheless, they consider school-tasks more useful than Spanish students and reject them in lesser degree. Finally, According to MANOVA results, differences in specific expectancies were also significant (Wilks λ: .981; $F(3, 443) = 2.926$, $p < .034$). National students overcome Immigrant students in self-efficacy expectancies and in expectancies based on help from others, but not in control expectancies.

Table 6 shows means of both groups, SP and IM, in perception of Classroom Motivational Climate (CMC), in Context-Sensitive Motivational Variables, in satisfaction with teacher's work, in the degree of disruptive behavior and in achievement. According to MANOVA results, mean differences in this group of variables are significant (Wilks λ: .887; $F(8, 403) = 6.437$, $p < .0001$). There are no significant differences in the degree in which SP and IM perceive CMC as Learning Oriented, and in the degree of interest, perceived ability and effort based on teachers' support. However, Spanish students declare to have greater success expectancies due to teacher's work than immigrants, and in fact, their grades are significantly grater than immigrants' grades. Finally, disruptive behavior is significantly more frequent in IM than SP students.

Table 5
*ANOVA of differences between Spanish and Immigrant students in motivational goal orientations, in the specific motives underlying them, and in general success expectancies*

| | Spanish ($N$ = 294) | | Immigrant ($N$ = 191) | | | |
|---|---|---|---|---|---|---|
| Motivational variables[1] | Mean | *SD* | Mean | *SD* | $F(1,483)$ | Sig. |
| MASTERY APPROACH | 125.85 | 23.33 | 128.04 | 19.66 | 1.14 | .285 |
| Desire to learn | 51.11 | 9.12 | 51.53 | 7.69 | 0.28 | .592 |
| *Desire to be helpful* | 23.91 | 5.26 | 24.18 | 4.72 | 2.02 | .155 |
| *Desire to avoid school tasks: they are useless* (-)[2] | 22.23 | 6.68 | 20.87 | 5.99 | 5.17 | **.023** |
| *Disposition to effort* | 25.04 | 6.80 | 24.80 | 5.66 | 0.16 | .682 |
| PERFORMANCE APPROACH | 70.32 | 11.15 | 71.57 | 10.83 | 1.47 | .225 |
| *Desire to achieve positive marks* | 24.79 | 4.72 | 24.97 | 4.48 | 0.19 | .662 |
| *Desire of extrinsic rewards* | 20.35 | 4.38 | 19.90 | 4.17 | 1.27 | .259 |
| *Desire of public success* | 25.20 | 6.06 | 26.71 | 5.85 | 7.37 | **.007** |
| PERFORMANCE AVOIDANCE | 40.75 | 9.25 | 41.95 | 10.16 | 1.82 | .178 |
| Fear of failure | 21.28 | 5.59 | 21.36 | 6.48 | 0.20 | .887 |
| Resilience in front of negative teacher's attitudes (-) | 28.53 | 6.01 | 27.40 | 5.83 | 4.17 | **.042** |
| TOTAL SUCCESS EXPECTANCIES | 115.13 | 17.82 | 110.68 | 17.69 | 6.67 | **.010** |
| *Self-efficacy (ability) expectancies* | 35.29 | 7.21 | 33.59 | 6.61 | 6.22 | **.013** |
| *Self-control (effort) expectancies* | 40.11 | 6.41 | 38.97 | 6.48 | 3.35 | .068 |
| *Expectancies based on help from others* | 39.74 | 6.06 | 38.13 | 6.49 | 7.08 | **.008** |

[1] Names in capital letters refer to general variables –goal orientations or success expectancies– and names in lower-case letters refer to specific motives or expectancies

[2] (-) means that the scale load on the Goal Orientation is negative.

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Table 6
*ANOVA of differences between Spanish and Immigrant students in perception of Classroom Motivational Climate, in Context-Sensitive Motivational Variables in disruptive behavior and in achievement*

| | Spanish ($N$ = 294) | | Immigrant ($N$ = 191) | | | |
|---|---|---|---|---|---|---|
| | Mean | *SD* | Mean | *SD* | $F$(1,483) | Sig. |
| Classroom motivational climate | 7.07 | 1.30 | 7.03 | 1.14 | .16 | .690 |
| Interest in subject attributed to teacher's work | 10.73 | 3.55 | 10.67 | 3.05 | .03 | .858 |
| Effort favoured by teacher's work | 11.07 | 3.09 | 11.07 | 2.73 | *.00* | .976 |
| Perceived ability due to teacher's work | 11.03 | 3.02 | 11.13 | 2.96 | .11 | .739 |
| Success expectancies due to teacher's work | 10.93 | 3.29 | 10.30 | 2.71 | 4.46 | .035 |
| Satisfaction with teacher's work | 14.01 | 4.51 | 14.01 | 3.82 | .00 | .994 |
| Disruptive behavior | 12.02 | 5.28 | 13.09 | 5.45 | 4.63 | .032 |
| Final grade | 5.92 | 2.25 | 4.70 | 2.03 | 34.75 | .000 |

### *Multi-group confirmatory factor analysis of CMC-Q structures for Spanish and Immigrants*

Figure 2 shows the standardized estimates of the confirmatory model. All the estimated loadings (l) are significant ($p < .001$). The fit statistics of the proposed model show that the model is well estimated. *Chi-square* ($c^2 = 430.15$, $p < .001$) is significant, probably due to sample size, but the quotient $\chi^2/df$ as well as the remaining fit indexes are well inside the limits that allow the model to be accepted ($\chi^2/210 = 2.04 < 5$; *GFI (goodness of fit index)* = .90 = .90; *IFI (incremental fit index)* = .94 > .90; *CFI (comparative fit index)* = .94 > .90; and *RMSEA (root mean square error of approximation)* = .04 < .08. Nevertheless, the model comparison statistic Chi-square indicate that fit is reduced significantly when restrictions on regression weights are imposed ($\chi^2(15) = 29.79$, $p < .011$). This fact implies that the structure of relations between variables is not exactly the same for Spanish students than for Immigrant students. So, in order to determine which relations in the model differed in a significant way, the Z test proposed by Clogg, Petkova and Haritou (1995) was used.

Results are shown in Table 7. Four differences between regression coefficients are significant ($Z \geq 1.96$), *Teacher uses novelty, Teacher teaches to work step by step, Teacher uses many examples and Teacher assesses "for" learning,* and two more fell just short of the standard limits of significance, *Teacher relates different topics and Teacher induces public participation.* In all cases except in the last one, SP attribute greater motivational value for learning to the teaching pattern being assessed than IM, that is, the

Table 7
*Analysis of differences between regression weights in the structure of CMC-Q*

| | Spanish | Immigrant | |
|---|---|---|---|
| | R-weight | R-weight | Clogg-Z |
| *Teacher uses novelty* | 1.178 | .838 | **3.447** |
| *Teacher assesses previous knowledge* | 1.242 | 1.130 | 1.013 |
| *Teacher relates different topics* | .910 | .731 | 1.937 |
| *Teacher induces public participation* | –1.243 | –1.064 | –1.937 |
| *Teacher' messages orient to learning* | 1.446 | 1.324 | 1.259 |
| *Learning objectives are clearly stated* | 1.434 | 1.436 | –.022 |
| *Classroom activity is well organized* | 1.662 | 1.487 | 1.778 |
| *Teacher supports autonomy* | 1.344 | 1.292 | .534 |
| *Teacher teaches to work step by step* | 1.553 | 1.325 | **2.264** |
| *Teacher uses many examples* | 1.091 | .848 | **2.360** |
| *Classroom rhythm is adequate* | 1.502 | 1.385 | 1.142 |
| *Teacher uses feedback that help you to learn from errors* | 1.000 | 1.000 | .000 |
| *Teacher assesses "for" learning* | 1.301 | 1.075 | **2.221** |
| *Teacher praises student's progress* | 1.247 | 1.395 | –1.531 |
| *Teacher treats pupils with equity* | 1.558 | 1.593 | –.292 |
| *Teacher cares from each pupil* | 1.343 | 1.173 | 1.806 |

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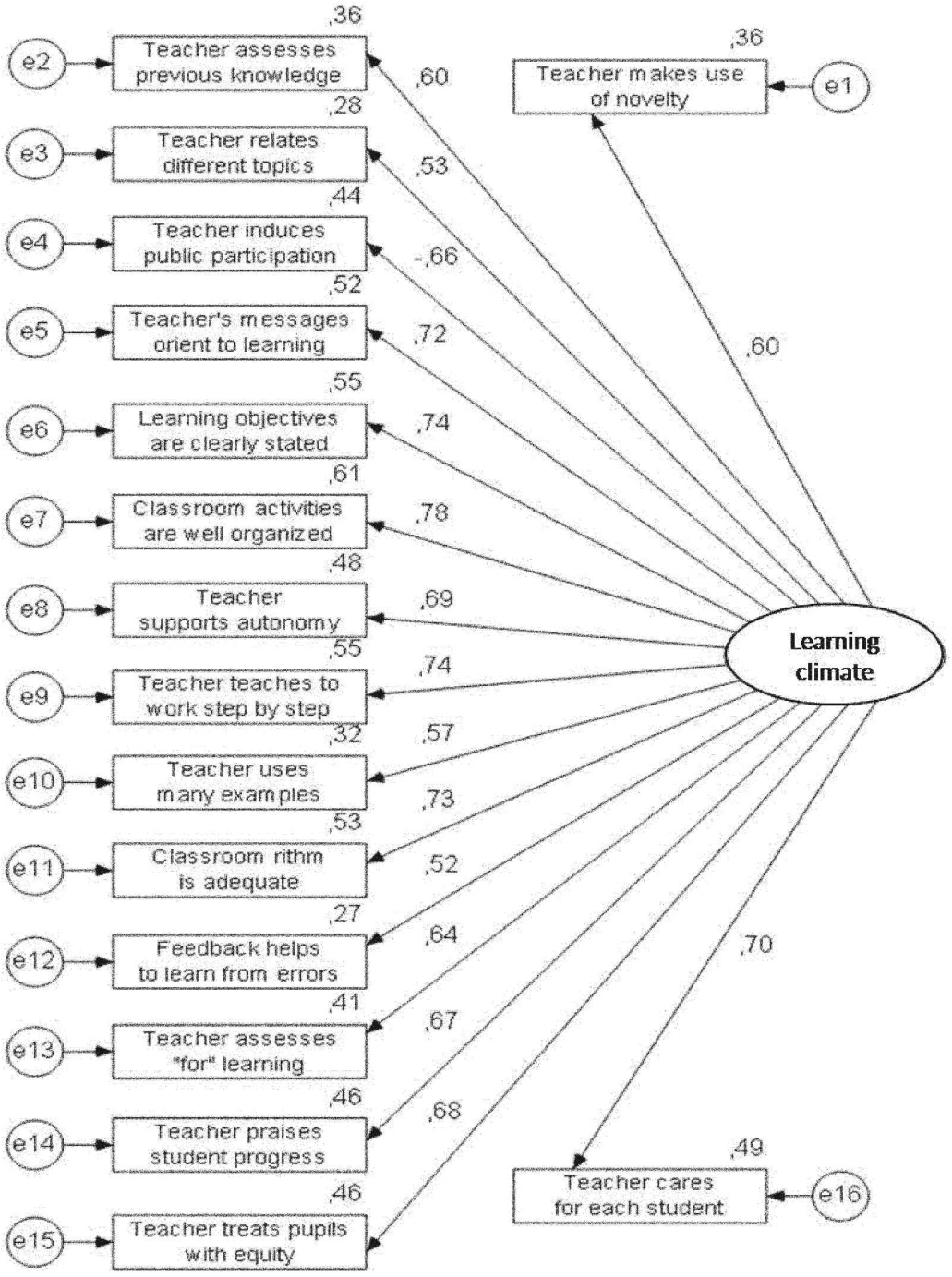


*Figure 1*. CMC-Q Multi-group analysis: Spanish and Immigrant students.

differences found are more indicative of a classroom climate oriented to learning for Spanish than for Immigrant students except in the case of *Teacher induces public participation*, that is more indicative of this climate for Immigrant students. Given the significant difference previously found in the motive "desire to achieve public success", it may be worth also pointing that Immigrants attribute more value to teacher's praise, though $Z = 1.513$ do not reach the standard level of significance.

### *Regression analyses*

Three groups of regression analyses were carried out. The first was realized to test the relative weight that family variables had as predictors of differences found between Sp and IM students in motivational variables. Results are shown in Table 8. As it can be seen, $R^2$ in all cases except one is highly significant. So, taking into account the meaning of dependent variables and the fact that in all predictors Spanish

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students score higher than Immigrants, it cannot be discarded the weight of values and, specially, expectancies at least on some aspects of academic motivation.

The second regression analysis was realized to test the relative weight that student's personal and family variables had as predictors of differences found in the motivational weight attributed to some teaching patterns included in the CMC-Q. Results are shown Table 9. As can be seen, family expectancies do not have a significant weight, probably because they are related significantly to the other predictors whose weight in predicting different CMC components was significant.

The third regression analysis was carried out to test the relative weight that student's personal and family variables had has predictors of final grade, satisfaction with teacher's work, and disruptive behavior. Only variables in which significant differences between Spanish and Immigrants had been found were used, as our interest was to discover whether these differences had practical significance, and not to test a general model of prediction including all the variables used. Results are shown in Table 10. As it can be seen, $R^2$ in all analyses is highly significant.

Predictors explain 37% of variance of *final grade*, but only predictors in which Spanish students overcome Immigrant students have a significant weight. Predictors with higher power are *family expectancies* and *success expectancies due to teacher's work,* though *intrinsic motivation, total success expectancies* and *resilience* contribute also to prediction. It seems that differences between Spanish and Immigrants in contextual variables –family expectancies and teacher's work– play a most important role than differences in personal variables.

In the case of *satisfaction with teacher's work,* only two variables have a significant weight, *success expectancies due to teacher's work,* that explain the 60% of criterion variance, and –with negative weight, as expected– *desire to avoid school task: they are useless.* It should be remembered that SP scored higher in the first variable, whereas IM score higher in the second.

Finally, predictors explain also 26% of variance in *disruptive behavior*. In this case, all predictors in which Spanish students overcame immigrants -that is, *total success expectancies, family expectancies, success expectancies due to teachers work and reliance-,* relate negatively to criterion variable, what seems logical. The only significant predictor that relates positively is *Desire of public success,* in which Immigrants scored higher than Spanish students.

Table 8

*Regression analyses. Predictors: Family Variables. Criteria: Specific motives in which Spanish and Immigrant students differ*

| Criteria | | Desire to avoid tasks | Desire of public success | Resilience | Efficacy expectancies | Expectancies on others |
|---|---|---|---|---|---|---|
| | $R^2$ | .090 | .000 | .122 | .211 | .144 |
| | $p$ | .000 | NS | .000 | .000 | .000 |
| Predictors | | Standardized regression coefficients | | | | |
| Family expectancies | | –.25*** | NS | .27*** | .46*** | .34*** |
| Interest of family | | –.08 | NS | .13** | NS | .08* |

Table 9

*Regression analyses. Predictors: Family Variables and specific motives in which SP and IM students differ. Criteria: teaching patterns of CMC whose motivational value is different for SP and IM*

| | | Novelty | Step by step | Examples | Assessment |
|---|---|---|---|---|---|
| | $R^2$ | .083 | .075 | .061 | .102 |
| | $p$ | .000 | .000 | .000 | .000 |
| Predictors | | Standardized regression coefficients | | | |
| Desire to avoid school tasks: they are useless | | –.288*** | –.143*** | NS | NS |
| Desire of public success | | NS | NS | NS | NS |
| Resilience in front of negative teacher's attitudes | | NS | .200*** | .247*** | .254*** |
| Self-efficacy expectancies | | NS | NS | NS | NS |
| Expectancies based on help from others | | NS | NS | NS | .154** |
| Family expectancies | | NS | NS | NS | NS |

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Table 10
*Regression analyses. Predictors: Variables in which Spanish and Immigrant students differ. Criteria: a) Grade; b) Satisfaction with teacher's work, and c) Disruptive behaviour*

| Criteria | | Final grade | Satisfaction | Disruptive behavior |
|---|---|---|---|---|
| | $R^2$ | .370 | .628 | .256 |
| | *p* | .000 | .000 | .000 |
| Predictors | | Standardized regression coefficients | | |
| Desire to avoid school tasks: they are useless | | NS | –.110** | NS |
| Desire of public success | | NS | NS | .162*** |
| Resilience in front of negative teacher's attitudes | | .136** | NS | –.158*** |
| Total success expectancies | | .175*** | NS | –.214*** |
| Intrinsic motivation | | .191*** | NS | NS |
| Family expectancies of student's success | | .354*** | NS | –.177*** |
| Interest of family in student learning | | NS | NS | NS |
| Success expectancies due to teacher's work | | .247*** | .751*** | –.125** |

## Discussion and conclusions

In classrooms with a high proportion of Immigrant students, the general question that teachers ask themselves –*What can I do to improve my students' interest and effort to learn?*– does not have an easy answer. According to literature studying effects of socio-cultural backgrounds on motivation and learning, the family and cultural characteristics of people coming from different countries might influence immigrant students' academic attitudes and work in a way different from Spanish families. This possibility aroused several specific questions: What are the differences between Spanish and Immigrant students in motivational profiles and family support than can affect academic work? How do these differences relate with grades, satisfaction with teacher's work and disruptive behavior? Are there differences in the motivational value that Spanish and Immigrant students attribute to the specific teaching patterns that configure a classroom motivational climate oriented to learning? So, *what kind of contributions has our study made to answer them*?

First of all, the family motivational background of Immigrant students in Spain seems to be less adequate than that of Spanish students. Parents´ academic success expectancies of IM are lower than those of SP. Adult success expectancies on students' achievement are associated to the interest showed in the time they devote to help their children when they do their academic work, thus exerting a great influence on their success or failure. So if expectancies are negative, their impact will be also negative. This finding coincides with findings of Benner and Mistry (2007). Moreover, the regression analyses have shown that differences in family characteristics, especially in expectancies- are related to differences found in students' specific motives and expectancies, a fact that give initial support to the idea of a possible dependence of motivation on socio-cultural characteristics.

Second, no significant differences in goal orientations (GO) have been found. This fact implies that teaching patterns found to be valid for arousing motivation of Spanish students are also valid "generally speaking" for immigrants. In fact, differences in CMC-Q scores have not been significant, what backs this conclusion. However, we said "generally speaking" because differences in three specific motives, one related to each GO, were significant: *Desire to avoid school tasks: they are useless*, *Desire of public success*, and *Resilience*. Differences in general success expectancies, usually associated to "Mastery GO", were also significant. The fact that IM scored lower than SP in "Resilience" and higher in "Desire of public success"– a factor whose correlations with achievement tend to be null or negative (Alonso-Tapia, 2005; Alonso-Tapia, Huertas, & Ruiz, 2010; Grant & Dweck, 2003)– suggests a motivational profile associated to low self-esteem and self-assertion. When this happens, IM students–in greater degree than SP students– need external support-from their families and teachers–that helps them to overcome thee lack of self-confidence. Certainly, they value school more than SP–they score lower in "Desire to avoid school tasks: they are useless"–, but it may be because they see knowledge as a way to compensate their difficulties.

Third, besides supporting the validity of the CMC-Q structure, the fact that the comparison between the degree in which IM and SP students value CMC as oriented to learning has shown no significant differences suggest that the original CMC model is adequate for enhancing motivation in both cases. However, the fact that IM and SP students differed in the motivational value attributed to some CMC components, and that these differences could be predicted by differences in some specific motives

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suggests the need of paying attention to the motivational differences with which SP and IM students come to classroom.

Forth, there have not been significant differences in three of the four motivational variables that, according to Alonso-Tapia and Fernández (2008, 2009a) are directly affected by teacher work manifest in classroom motivational climate: 1) interest in the specific subject the teacher teaches, 2) perceived ability, and 3) effort to learn. However, teacher's work seems no to be sufficient to rise specific success expectancies of IM up to the level of the SP. So it can be predicted that IM achievement will be lower than that of SP. It seems that IM not only have less self-confidence, but also less confidence in teacher's support, in spite of perceiving the CMC as positive as SP students, and of experiencing a similar degree of satisfaction with teacher's work. It may be that other aspects of CMC not assessed by CMC-Q as, for example, strategies configuring the teacher's style of managing discipline (Almog & Shechman, 2007; Furlong, Morrison, & Fisher, 2005; Infantino & Little, 2005) have to be taken into account, as teachers may use them in different degree when dealing with IM and SP. Nevertheless, this is a possibility to be explored.

The above predictions related to IM and SP differences in family and personal characteristics have received support from the last regression analyses. First, family and students' motivational variables in which SP overcome IM students are positively related to grades and explain most part of variance. In fact, immigrants' family interest correlation with grade is non-significant, a result opposed to the findings of Plunkett et al. (2009). Second, satisfaction with teacher's work is mainly predicted by differences in specific success expectancies attributed to teacher's work, though in this case the value attributed to school tasks–a value greater in IM students–contribute also to prediction. Third, disruptive behavior is negatively related to motivational and family variables in which IM score lower, and positively to the desire of public success, in which they score higher than SP students.

Fifth, our findings run counter those from some studies conducted in the U.S. in which immigrant students sometimes outperform native students on certain measures, but run parallel to other studies. This fact implies the need of studying the specific characteristics of immigrant students in each country before considering how to adjust the educational measures.

In face of the above picture, how can teachers adapt their teaching to help IM students given their differences with SP students? The analysis of differences in the structure of CMC-Q gives us some cues. Teaching patterns configuring Classroom Motivational Climate are valid for both, SP and IM students. However, teaching patterns objectively more important for promoting learning –for example, being taught how to work step by step- are considered less important as indicators of a learning climate by IM than by SP students. On the contrary, Immigrant students consider in greater degree than Spanish students that promoting public participation and being praised for personal achievement is more is more indicative of a CMC oriented to learning. This perception is consistent with the need of Immigrants of being recognized, a need probably related to low self-confidence and self-esteem.

Our results have also other theoretical, methodological and practical implications. First, multicultural psychology (Plaut & Markus, 2005; Saili & Hoosain, 2007) had enlightened the importance of taking into account cultural values in order to explain students' motivation and learning. We have not measured the specific cultural characteristics of each group of immigrants as well as their academic consequences due to their great diversity: This is a task for the research agenda. However, the mere consideration of IM and SP students as separated groups has been good enough to show that their families differed in important points. The success expectancies and interest in student's work of IM families are lower than those of SP families, a fact that seems to affect students' achievement and classroom disruptive behavior.

Second, the standard GO theory suggest the importance of paying attention to general GO in order to understand students' motivation (Meece, Anderman, & Anderman, 2006). However, our data support the multiple goal perspective recently advocated, for example, by Alonso-Tapia et al. (2009), Boekaerts, Koening, and Vedder (2006), and Valle et al. (2003): differences in motives related to specific goals have allowed us to detect some of the reasons that might explain why IM students' achievement is lower than achievement SP students', and why they behave in a more disruptive way. This fact underlines the importance of going beyond GO when trying to understand specific students' motivation in specific learning contexts.

Third, data gathered in this study on the structure of CMC-Q confirm results of previous studies about the validity of its structure (Alonso-Tapia & Fernández, 2008, 2009a). So, though CMC-Q does no include all teaching patterns that contribute to orient students to learn, developing similar questionnaires including teaching patterns and strategies of interest may be a good way to detecting powerful learning environments from the students' point of view. Moreover, when doing so, special attention should be paid to a methodological consideration. Habitually, confirmatory factor analysis (CFA) is used for testing whether the particular theoretical construct underlying the structure of an assessment instrument like the CMCQ is or not acceptable. However, when used in cross-validation multi-group analysis followed by the use of the Z-test of Clogg, Petkova and Haritou (1995), CFA may sometimes be a good way of approaching the study of individual differences. Its use in this study has allowed the identification of teaching patterns with different motivational value for enhancing strivings for learning in IM and SP students.

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Finally, our results point to important educational problems. If IM students perceive that their family expectancies and interest related to their academic success are low –at least lower than expectancies and interest of SP students–, and that teachers' work is not enough to sustain their success expectancies, what can be done to change such perception and its negative effects? Though our data provide some cues as to how teachers could act to improve CMC perception, they do not give a satisfactory answer to this question. So, we would like to suggest that parents and teachers should adopt the Dweck and Elliot theory on "incremental view of competence and intelligence" (Dweck & Elliot, 1983; Sternberg & Subotnik, 2006). It may be that parents and teachers of IM are right in recognizing that these students have poor or insufficient initial preparation–lower competencies–than SP students. However, if they adopted the "incremental view" of intelligence and competencies, their attention focus will change from predicting lower achievement and greater disruptive behavior to trying to find the student's personal resources and the kinds of help adequate for improving competence. However, the question for future research is how help parents and teachers to adopt the "incremental perspective on competence and intelligence".

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