

ACHIEVEMENT GOALS, LEARNING STRATEGIES AND LANGUAGE ACHIEVEMENT AMONG PERUVIAN HIGH SCHOOL STUDENTS

Lennia MATOS, Willy LENS, & Maarten VANSTEENKISTE
*University of Lima & University San Martin de Porres, Lima, Peru,
Katholieke Universiteit Leuven, & Ghent University*

We used an achievement goal framework to study the role of motivation in the academic context of a Peruvian sample of 8th to 10th grade high school students (N = 1505). The purpose of this cross-sectional study was to examine the relationship between students' achievement goals, their use of learning strategies and their academic achievement. Multiple Hierarchical Regressions Analyses identified, as predicted, positive effects of mastery goals, including more use of learning strategies and higher academic achievement, and negative effects of performance avoidance goals, including lower academic achievement. Mixed results were found for pursuing performance approach goals, which predicted a greater use of learning strategies, but were unrelated to academic achievement. The present findings support the external validity of achievement goal theory in a sample of students from a culture that is understudied in the achievement goal literature in particular and the motivational literature in general.

Introduction

Education is of tremendous importance, more than ever before in history (Maehr & Midgley, 1996). To succeed in education, students not only need to dispose of the necessary cognitive skills, they also need to have the will or motivation to learn (Pintrich & De Groot, 1990). This is why teachers, educational psychologists and researchers recognised the usefulness of identifying effective pathways to promote students' adaptive motivation and achievement goals in classrooms.

Within the realm of educational and motivation psychology, achievement goal theory represents one of the most important frameworks to conceptualise students' motivation and to study their effects on engagement, learning and performance in academic settings (Patrick, Anderman, Ryan, Edelin, &

Lennia Matos is professor of Psychology at the University of Lima and the University of San Martin de Porres, Lima, Peru. Willy Lens is Professor of Psychology at the Katholieke Universiteit Leuven. Maarten Vansteenkiste is now Professor of Psychology at Ghent University.

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Correspondence regarding this article can be sent to Lennia Matos, Mayor Arce de la Oliva 340-346, Aurora-Miraflores, Lima 18, Peru. E-Mail: lenniamatos@gmail.com

Midgley, 2001; Pintrich, Conley, & Kempler, 2003; Pintrich & Schunk, 2002). In this respect, Pintrich (2000a, p. 94) pointed out that the central achievement goal constructs, that is mastery and performance goals, reflect “an organised system, theory, or schema for approaching, engaging and evaluating one’s performance in an achievement context”.

These qualitatively different types of achievement goals were expected to yield differential effects on students’ learning and performance and various studies within Western cultures have provided evidence for these claims (see Brophy, 2005 for an overview). The present study goes beyond this past work by examining the usefulness of achievement goals to predict the learning and performance in a sample of Peruvian high school students, which have been understudied in the achievement goal literature in particular and motivation literature in general.

Mastery and performance achievement goals

Achievement goals refer to the purposes or reasons for engaging in achievement behaviour and the ways in which a person responds to these achievement situations (Ames, 1992; Linnenbrink & Pintrich, 2000; Pintrich & Schunk, 1996). It includes different beliefs about purposes, competence, success, ability, effort, errors, and standards (Pintrich, 2000a). These goals can guide and direct achievement behaviour of students (Linnenbrink & Pintrich, 2000) and they can influence how students approach learning and perform in their classroom settings (Elliot, McGregor, & Gable, 1999; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000).

The two most extensively studied achievement goals within achievement goal theory are mastery and performance goals. When students pursue mastery goals they are concerned with increasing and enhancing their competence, with understanding and mastering the learning material, gaining knowledge, or with developing a new skill (Covington, 2000; Dweck, 1986; Heyman & Dweck, 1992; Zimmerman, 1994). The value is placed on the process of learning itself and students spend more time in learning activities (Ames & Archer, 1988). The intrinsic and personal meaning of a task is very important (Maehr, 2000; Maehr & Midgley, 1996). Mastery-oriented students will perceive themselves as successful when they try hard, improve their skills, or gain comprehension. Thus, such students define competence on the basis of a self-referenced or task-based standard, implying that they evaluate their progress and competencies compared to how they well did in the past or compared to the requirements of the task itself (Elliot & McGregor, 2001; Pintrich, 2000b).

When students pursue performance goals, their concern is to be judged

capable, to compare favourably to others, to prove ability by outperforming others, to establish one's place in a hierarchy, to obtain good judgments about their competence, or to avoid negative ones (Covington, 2000; Dweck, 1986; Maehr & Midgley, 1996; Zimmerman, 1994). Social comparison and public recognition when one has outperformed others are then very important (Ames, 1992; Ames & Archer, 1988; Maehr & Midgley, 1996). When holding a performance goal, individuals will judge their competence with respect to an interpersonal standard, that is, by comparing themselves to others. In doing so, individuals will either be focused on performing better than others or trying to avoid doing more poorly than others.¹

It is interesting to note that the work on these two achievement goals grew out of the theory of achievement motivation (Atkinson & Feather, 1966) in which such a differentiation was lacking. Instead, individuals with a high motive to achieve were individuals who either used a task-based, intra-personal or interpersonal standard when evaluating their competencies. Thus, highly achievement oriented individuals just try to improve their achievements, either by doing well compared to the requirements of the task, by scoring better than before, or by outperforming others. The recognition that individuals can adopt different standards to evaluate their competencies led to the distinction between mastery and performance achievement goals in the early 1980s (see Elliot, 1999, 2005).

Performance approach and performance avoidance achievement goals

In the 1990s, Elliot and Harackiewicz (1996) transformed dichotomous achievement goal theory into a trichotomous model by breaking the traditional performance goals into two different subtypes, namely performance approach and performance avoidance goals. This conceptual differentiation was deemed necessary and illuminating as Elliot and Harackiewicz (1996) had found that these two different types of performance goals led to different outcomes, with performance avoidance goals predicting more negative

¹ It is important to mention that most recently Elliot (2005) has argued that self-worth concerns do not form an integral part of the definition of performance goals. He suggested that performance goals only need to be defined on the basis of the type of standard (i.e., a normative standard) that is used to define competence. In Elliot's (2005) view, the willingness to prove one's self-worth through attaining normative standards represents a reason behind pursuing performance goals rather than an inherent element of the definition of performance goals. This more narrow definition of performance goals stands in contrast to the one originally introduced by Maehr (1984), Nicholls (1984) and others, who considered the tendency to pursue ego-enhancement and to prove one's self-worth as an integral element of the conceptualization of performance goals.

outcomes relative to performance approach goals (Elliot & McGregor, 2001; Pintrich, 2000b).

Whereas both performance approach and performance avoidance oriented individuals use a similar standard (i.e., an interpersonal norm) to evaluate their competencies, they ascribe a different value to competence. In the case of performance approach goals, competence is positively valued, that is, it is something individuals try to pursue. Specifically, a performance approach oriented person tries to look competent compared to others and tries to be the best in the classroom or at least to be better than someone else. In the case of a performance avoidance goal, competence is negatively valued, that is, incompetence is an outcome that needs to be avoided. Therefore, a person with a performance avoidance goal will try to avoid bad judgments and protects himself (herself) from being the worst of the classroom or to look dumb when compared to others.

Following this conceptual advancement, various studies have examined the differential effects of mastery goals and the two types of performance goals. Current evidence suggests that pursuing mastery goals is more adaptive and that pursuing performance avoidance goals is more detrimental for learners' learning and self-regulation. Specifically, researchers seem to agree that a mastery goal is related to "an adaptive pattern of attributions and positive affect that will help a student try hard, persisting, and ultimately doing better on academic tasks" (Pintrich & Schunk, 1996, p. 239). For instance, it has been documented that mastery oriented students process the learning information at a deep level (Ames & Archer, 1988; Pintrich, 2000b), that they are more cognitively engaged in a task (Pintrich & Schrauben, 1992), use more metacognitive and self-regulating strategies (Meece, Blumenfeld, & Hoyle, 1988), enjoy their learning more (Elliot & Church, 1997) and tend to obtain better academic grades (e.g., Botsas & Padelidu, 2003; Vansteenkiste, Simons, Lens, Soenens, Matos, & Lacante, 2004, Zusho & Pintrich, 2003). It must be noted though that some researchers have failed to replicate the latter finding (e.g., Harackiewicz, Barron, & Elliot, 1998) and instead showed that performance approach goals were most predictive of academic achievement.

In general, the pattern of correlates associated with performance approach goals has been more mixed and controversial. For instance, these goals have been related to the use of surface level learning strategies (Elliot et al., 1999), but also with deep level learning strategies (e.g., Al-Emadi, 2001, Pintrich, 2000b; Wolters, Yu, & Pintrich, 1996) while other researchers reported a null-effect (Elliot et al., 1999). With respect to academic achievement, some researchers reported a positive effect between performance approach goals and achievement in college students (e.g., Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997), but these findings were not always replicated among

younger students (e.g., Wolters, 2004). This mixed pattern of findings has even provoked an intense debate within the achievement goal literature (e.g., Harackiewicz, Barron, Pintrich, Elliot, & Trash, 2002; Kaplan & Maehr, 2002; Midgley, Kaplan, & Middleton, 2001; Vansteenkiste, Matos, Lens, & Soenens, in press). Some researchers suggest that its pursuit should not be encouraged, whereas others claim that performance approach goals are worthwhile to be pursued as they yield very few negative effects. Instead, performance approach goals have either positive effects, as in the case of performance, or null-effects, as in the case of intrinsic motivation (e.g., Elliot & Moller, 2003; Harackiewicz et al., 2000). Given this debate, there is a strong need for continued research on the effects of holding performance approach goals (Elliot & Moller, 2003; Pintrich, 2000a, 2000b). This is especially important for the current research because most of the studies in this field focused basically on white, middle class North American students (Kaplan, Middleton, Urdan, & Midgley, 2002) and our study involved a diversified sample of students coming from different ethnic, social and economic backgrounds.

The controversial findings of performance approach goals stand in strong contrast to the clear-cut negative pattern of findings that have been reported with respect to performance avoidance goals. Specifically, holding performance avoidance goals has been associated with making less use of deep level learning strategies (Elliot et al., 1999), higher levels of test-anxiety (Middleton & Midgley, 1997), lower academic achievement and lower intrinsic motivation (Elliot & Church, 1997), and more use of self-handicapping strategies (Midgley & Urdan, 2001).

Present research

The present study aimed to test the usefulness of achievement goal theory in a culture that has not been examined before, that is, Peru. The application of achievement goal theory to non western countries is of particular importance as it helps to establish evidence for the external validity of the theory.

We assessed two important outcomes, that is, learning strategies and academic achievement. Learning strategies consisted of five subscales (i.e., rehearsal, elaboration, organisation, critical thinking, and meta-cognitive strategies) that tap various aspects of how the learning material can be processed. In general, we expected to replicate most of the previous findings that have been reported in the literature. Specifically, mastery goals were expected to be positively related to the use of learning strategies and with higher academic achievement. Performance avoidance goals were expected

to be negatively related to the use of learning strategies and with lower levels of academic achievement. Due to the inconsistent evidence regarding performance approach goals and the fact that this represents the first attempt to apply achievement goal theory in a Peruvian context, we preferred not to formulate specific hypotheses instead examining its effects in a rather explorative fashion.

Method

Participants and procedure

The sample included 1505 high school students from three public schools ($N = 945$ students; male = 474; female = 470; 1 student failed to report his/her gender) and six private schools ($N = 560$ students; male = 313, female = 247) in Lima (Peru). There were 538 students from eighth grade (336 from public schools and 202 from private schools), 565 from ninth grade (320 from public schools and 245 from private schools) and 402 from tenth grade (289 from public schools and 113 from private schools). The mean age of our total sample was 14.55 years ($SD = 1.20$).

We established contacts with these schools by sending letters to their principals. We applied the questionnaires during the last quarter of the academic year. The questionnaires were applied for Spanish Language course as the students' native tongue. Whenever possible, we collected the information during the regular time for Language classes. We also asked for the students' final grades for Spanish.

Following Midgley, Kaplan, Middleton, Maehr, Urdan, Anderman, Anderman, and Roeser's (1998) recommendations, we explained the purpose of the study for all the applications and the instructions were read aloud with the students. The instructions included telling students that the questionnaire was not a test with good or bad answers and that we were really interested in their personal opinion. We explained that the research was very important for a better understanding of the assessed variables. There was an example item to teach students how to answer each item using a Likert-scale. Students were told that if they had any question, they were free to ask it at any time. In each classroom there was always a person present who was familiar with the research. Students were told that their participation in the research was voluntarily, but at the same time, highly appreciated.

Measures

The original instruments used for the present research were in English. We translated the questionnaires from English to Spanish and then we asked an expert in English (Spanish speaking) to do the back-translation from Spanish into English as recommended by Hambleton (1994).

Students' achievement goals

Achievement goals refer to purposes or reasons to engage in academic achievement behaviours. Three types of students' achievement goals were assessed that is mastery, performance approach and performance avoidance achievement goals. These goals were assessed with the Patterns of Adaptive Learning Survey (Midgley, Maehr, Hicks, Roeser, Urdan, Anderman, Kaplan, Arunkumar, & Middleton, 1997; Midgley, Maehr, Huda, Anderman, Anderman, Freeman, Gheen, Kaplan, Kumar, Middleton, Nelson, Roeser, & Urdan, 2000), which is a self-report instrument with a Likert-type scale ranging from 1 (*Not at all true*) to 5 (*Very true*). Mastery goals measure the students' purpose of developing competence and skills, gaining knowledge and understanding. The focus is on the task itself (e.g., "In this class, it's important to me that I improve my skills this year"; 7 items). Performance approach goals assess the students' purpose of comparing favourably to others, to demonstrate their competence and superiority, and to outperform others (e.g., "In this class, one of my goals is to show others that I'm good at my class work"; 8 items). Performance avoidance goal refer to the students' purpose of avoiding negative judgments about their competence and avoiding demonstration of incompetence (e.g., "One of my goals in class is to avoid looking like I have trouble doing the work"; 6 items).

Learning strategies

These strategies can be defined as useful skills for effective learning, for storage and retrieval of information (Weinstein, 1985 in Beltrán, 1996). To measure students' learning strategies, the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991) was used. The MSLQ is a self-report instrument with a Likert-type scale that goes from 1 (*Not at all true*) to 5 (*Very true*). Five different types of learning strategies were assessed. First, rehearsal strategies are used in basic memory activities, for example, reciting or naming items to be learned. They are used for simple tasks and to activate information in working memory (e.g., "When I study for this class, I practice saying the material to myself over and over"; 4 items). Second, elaboration strategies are used for the storage of information in long-term memory, for creating connections between the aspects needed to be learned and they help to integrate new information with the

knowledge that the student already has. These strategies are useful to have a deep understanding of what students are studying or reading. Examples are: paraphrasing, summarizing, etc. (e.g., “When reading for this class, I try to relate the material to what I already know”; 6 items). Third, organisation strategies are used to select information and to build associations between the aspects which need to be learned. They help to connect information with prior knowledge. The learner is engaged in the task. Examples: outlining the material, selecting main ideas, etc. (e.g., “When I study for this course, I go over my class notes and make an outline of important concepts”; 4 items). Fourth, critical thinking measures the extent to which a student is able to apply previous knowledge to new situations, to reflect upon facts, to look for evidence and/or evaluate alternatives. In other words, it refers to the skill of taking a critical position (e.g., “I try to play around with ideas of my own related to what I am learning in this course”; 5 items). Finally, metacognitive strategies refer to the controlling and self-regulating aspects of metacognition. These aspects include: i) Planning activities which refer to aspects such as goal setting and task analysis; ii) Monitoring strategies which refer to regulate one’s attention while reading, self-testing or questioning, helping the student to gain understanding and comprehension; iii) Regulating activities which refer to adjusting the cognitive resources in order to fulfil the task, help to improve performance by checking and correcting one’s own performance while doing a task (e.g., “When reading for this course, I make up questions to help focus my reading”; 10 items). These five learning strategies can be grouped into surface and deep level learning strategies. Whereas rehearsal is considered as a surface level learning strategy, organisation, elaboration, critical thinking, and metacognitive strategies characterise deep level learning strategies.

Students’ academic achievement

We asked the school principals to give us the students’ final grade of Language according to the Peruvian school grade system that goes from zero to twenty (0-20). In Peru, there are no national (standardised) tests to evaluate the students’ achievement; therefore we collected the scores that each teacher had given to each student. Due to the fact that each teacher used different criteria, we standardised the scores within classrooms (Wolters, 2004). We performed all the analyses after the standardisation of the scores per class.

Results

Plan of analyses

We performed several preliminary analyses. First, we conducted Confirmatory Factor Analyses (CFA) to study the validity of our instruments. Then, we examined the reliability of our measures (Cronbach's alpha). Finally, we performed correlational analyses among the research variables. These zero-order correlations were calculated to explore the associations between the control variables gender, school type, and school, achievement goals, and the outcome variables that included learning strategies and academic achievement. Correlations with categorical variables (i.e., gender, school type and school year) were performed using point-biserial correlation (r_{pb}), which is an analysis similar to Pearson correlation that is used with categorical variables (Field, 2005).

As primary analyses, six sets of Hierarchical Multiple Regression Analyses were performed to test the effects of the achievement goals on learning strategies and academic achievement. The same procedure was followed for all regression analyses. Control variables that were found to be significantly correlated with the outcome variables in the correlational analyses were entered in the first step. Students' achievement goals were entered as a block of variables the second step and several sets of interactions were created and entered in the third and last step. A total of nine interactions were created by multiplying each of the control variables by each of the achievement goals (variables were centred around their mean prior to the multiplication). Analyses were performed using SPSS 12th version (SPSS Inc., 2003).

Preliminary analyses

Validity and reliability of our instruments

The validity of our instruments was investigated performing Confirmatory Factor Analyses using LISREL 8.50 (Jöreskog & Sörbom, 2001). We used multiple fit indices to evaluate the goodness of fit of different models (Midgley et al., 1998). We considered the Chi-square (χ^2), the root mean square error of approximation (RMSEA) for which values lower than 0.05 represent a good fit (Raykov & Marcoulides, 2000) and values lower than 0.08 represent a reasonable good fit (Byrne, 1998), and the standardised root mean square residual (SRMR) which should be lower than .08 for an excellent fit and lower than 0.10 for an adequate fit (Simms, Watson, & Doebbeling, 2002). The use of these indices (i.e., RMSEA and SRMR) is suggested by Hu and Bentler (1999). As a rule of thumb they indicate that together, values closer to 0.06 in the RMSEA with an SRMR value close to

0.08 show an excellent fit (Hu & Bentler, 1999). Two Confirmatory Factor Analyses (CFA) were performed, one for students' achievement goals and another for learning strategies. Item loadings equal to or higher than 0.35 were maintained.

We tested a model in which three different types of achievement goals were expected (mastery goals, performance approach and performance avoidance goals). The model obtained an excellent fit χ^2 (186, N = 1290) = 981.02, $p < .001$ (RMSEA = 0.058; SRMR = 0.051). All loadings were 0.36 or higher. For learning strategies we expected a five-factor model (i.e., rehearsal, elaboration, organisation, critical thinking, and metacognitive strategies). The fit indices indicated a very good fit, χ^2 (367, N = 1294) = 1485.10, $p < .001$ (RMSEA = 0.049; SRMR = 0.037). All loadings were between 0.35 to 0.73. Two item loadings were extremely low in the metacognitive scale therefore we removed these items from this subscale.

In a next step, we examined the reliability of our questionnaires. Table 1 shows the internal consistency coefficients (Cronbach's alpha) for the questionnaires as well as means and standard deviations of all measured variables. All internal consistency coefficients were between .66 and .82.

Table 1.
Means, Standard Deviations, and Cronbach's alpha coefficients
for measured variables (Spanish language).

Students' achievement goals	Means	SD	Alpha
Mastery	4.28	.57	.81
Performance approach	3.46	.77	.84
Performance avoidance	3.16	.79	.72
Learning strategies			
Rehearsal	3.58	.80	.66
Elaboration	3.65	.71	.74
Organization	3.53	.90	.77
Critical thinking	3.75	.65	.70
Metacognitive strategies	3.80	.63	.82
Academic achievement	12.6	1.97	-

The results from the confirmatory factor analyses and from the reliability analyses provided evidence for the internal validity and reliability of the adapted instruments in a Peruvian sample of high school students. These results allow us to use the different subscales in further analyses.

Correlational analyses

Table 2 shows the results from the correlational analyses of all measured variables. Results from the correlational analyses showed that school type

Table 2.
Correlation analysis between control variables, achievement goals, learning strategies and academic achievement (N = 803 – 1505).

Background variables	1	2	3	4	5	6	7	8	9	10	11
1. School type	-										
2. Gender	-.06*	-									
3. Grade	-.07*	-.02	-								
Students' achievement goals											
4. Mastery	-.27***	.10**	-.03	-							
5. Performance-Approach	-.43***	-.06*	.03	.41***	-						
6. Performance-Avoidance	-.40***	.01	-.04	.27***	.67***	-					
Self-reported outcome variables											
7. Rehearsal	-.29***	.01	.04	.33***	.42***	.34***	-				
8. Elaboration	-.30***	-.01	.02	.46***	.39***	.29***	.59***	-			
9. Organization	-.26***	.05	.00	.38***	.35***	.24***	.59***	.66***	-		
10. Critical Thinking	-.29***	.02	-.02	.51***	.39***	.29***	.53***	.71***	.56***	-	
11. Metacognitive	-.30***	.04	.03	.56***	.41***	.29***	.62***	.75***	.66***	.73***	-
Behavioral outcome											
12. Academic achievement (N = 803)	.00	.25**	.00	.16***	-.03	-.09**	.04	.09*	.04	.08*	.13***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, SD = Standard Deviation.

was negatively correlated to all students' achievement goals (ranging from $r_{pb} = -.27$ to $r_{pb} = -.43$, $p < 0.01$) and to all learning strategies (ranging from $r_{pb} = -.26$ to $r_{pb} = -.30$), however it did not correlate significantly with academic achievement ($r_{pb} = .00$, *n.s.*). These results evidenced that students from public schools reported significantly higher means on all achievement goals and learning strategies in comparison to those students from private schools. However no correlation was found in relation to academic achievement.

Gender correlated positively ($r_{pb} = .10$, $p < .01$) with mastery goals, and negatively ($r_{pb} = -.06$, $p < .05$) with performance approach goals. It did not correlate significantly with the outcome variables with the exception of academic achievement ($r_{pb} = .25$, $p < .001$). Results showed that females reported higher means of mastery goals and obtained higher grades in comparison to males, while male students reported a higher mean on performance approach goals in comparison to female students. Grade did not correlate significantly with any type of achievement goals or with the outcome variables (see Table 2).

Students' achievement goals were positively correlated among each other (ranging from $r = .27$ to $r = .67$, $p < .001$) and they correlated significantly with the different learning strategies (ranging from $r = .29$ to $r = .51$, $p < .001$). Mastery goals correlated positively with academic achievement ($r = .16$, $p < .01$), while performance avoidance goals were negatively correlated to it ($r = -.09$, $p < .05$). Performance approach goals were unrelated to academic achievement. All outcome variables (learning strategies and academic achievement) were positively correlated with each other (ranging from $r = .08$ to $r = .75$, $p < .05$ and $p < .001$ respectively) with the exception of academic achievement that did not correlate significantly with rehearsal nor with organisation learning strategies.

Primary analyses

Results from the hierarchical regression analyses are shown in Table 3. Based on the previous correlation analyses, school type and gender were considered as control variables (although gender correlated significantly with few outcome variables, excluding it from the further analyses did not change the results, therefore gender was retained and included in all analyses).

Table 3.
Beta coefficients, R², and R² change resulting from the hierarchical multiple regression analysis (N = 738 – 1258).

Variables	Surface level learning			Deep level learning			Achievement
	Rehearsal	Elaboration	Organization	Critical Thinking	Metacognitive Strategy Use		
Step 1							
School type	-.32***	-.32***	-.29***	-.31***	-.32***		.01
Gender	-.01	-.03	.02	.01	.04		.24***
R ²	.10	.11	.08	.10	.10		.06
Step 2							
Mastery goals	.18***	.35***	.26***	.42***	.45***		.17***
Performance approach goals	.22***	.18***	.19***	.16***	.18***		-.04
Performance avoidance goals	.09*	.01	-.01	.02	.01		-.09*
R ² change	.13***	.18***	.12***	.22***	.26***		.03***
R ²	.23	.28	.20	.32	.36		.09

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 shows that in the first step, school type accounted between 8% and 11% of variance for the learning strategies, and gender accounted for 6% of variance on academic achievement. These results showed that school type was significantly associated with all learning strategies but not with academic achievement. Gender was only associated with academic achievement and not with the other outcome variables.

Including students' achievement goals in the second step explained an additional 3% to 26% of variance in the outcome variables. Mastery goals were significantly associated with all outcome variables; performance approach goals were significantly associated with all learning strategies but not with academic achievement and performance avoidance goals were positively associated with rehearsal strategies and negatively with academic achievement.

Finally, in the third step only one interaction term explained a significant amount of variance in the outcome variables. More concretely, the interaction "school type x performance approach" explained an additional 1.8% of variance in organisation strategies (given the lack of significant interactions in the third step, these were not reported in Table 3). Follow up analysis indicated that performance approach goals were significantly associated with organisation in public schools ($\beta = .26, p < .01$) but not in private schools ($\beta = .02, n.s.$).

Discussion

The present research examined the relationship between students' achievement goals (mastery, performance approach and performance avoidance achievement goals), their use of learning strategies (surface and deep level learning) and academic achievement for Language in a Latin-American (i.e., Peruvian) culture. We focused on this understudied culture to examine the generalisation of achievement goal theory in understanding motivational processes in non western cultures.

Our results showed that our hypotheses were mostly supported. As hypothesised, mastery goals were positive and significantly associated with making more use of learning strategies (surface and deep level), and also with higher levels of academic achievement for a Language course. These results are more noteworthy when considering that we have controlled for effects of school type and gender. Having included school type in a Peruvian sample is a way to incorporate different socio-economic levels into the study. Matos (2005) pointed out that there are several differences between students from public and private schools. For example, parents of students attending public schools have lower educational levels and with this, lower income

when compared with parents of students attending private schools. Also, parents from students attending public schools do not pay any monthly fee for the education of their children while parents of students attending private schools could pay monthly fees of 200-500 US dollars.

Our results are consistent with previous studies that demonstrated that mastery achievement goals are related to more adaptive educational outcomes. Particularly interesting is the fact that irrespectively of the type of school they attend (and their socio-economic levels), their gender and grade, students can benefit from the positive consequences of pursuing mastery goals.

Regarding performance avoidance achievement goals our results showed that after controlling for the effects of school type and gender (and grade) it was positive and significantly associated only with the use of rehearsal strategies (surface level learning). It is possible that in their attempts to avoid being the worst of the classroom or to be judged as incompetent, students make use of this surface level strategy as a means to show that they know something without considering if they really understand or fully grasp the material. It could be the case that they just repeat what they read without deeply processing the learning material. We have to comment that we do not think that rehearsal strategies are not unnecessary during the learning process. We think that this type of learning strategy might especially be needed and useful once students have comprehended and deeply understood the learning material. If, however, rehearsal is used in isolation from more deep level learning strategies, this strategy is unlikely to yield achievement benefits (unless the exams tap rote learning) and is unlikely to yield long term retention of the learning material. Furthermore, in accord with our expectations performance avoidance was negatively associated with academic achievement. This means that as previously reported, performance avoidance goals are related to less adaptive outcomes (e.g., Elliot & Church, 1997).

Regarding performance approach goals, our results showed that these goals were positively related to the use of learning strategies (i.e., both surface and deep level) and this has also been found by other researchers (Wolters et al., 1996) studying secondary school students as we did. It is noteworthy to mention that even though mastery goals and performance approach goals positively predicted the frequent use of learning strategies, mastery goals were by far the strongest predictor than performance approach goals. Regarding academic achievement and performance-approach goals, some investigations showed a positive relation in college students but this was not always the case for younger students. It might be as Harackiewicz and colleagues (2002) have suggested, that these goals are related to academic achievement when the group of students in a classroom is highly competitive as is often the case in a college environment.

It is interesting to comment that in our research most of the expected results have been found. Therefore using an achievement goal framework in a different cultural group (i.e., Peruvian samples with different socio-economic backgrounds) than the ones previously studied in the literature seems to work in a similar way. Our study helps in expanding the spectrum of goal theory because most of the studies in this field focused basically on white, middle class North American students (Kaplan et al., 2002).

Limitations

Despite the interesting results that go in line with our expectations, this research has to be seen through the light of some limitations. We have to remember the cross-sectional nature of this study precludes us from drawing any conclusions about cause and effect relationships (Meece, Herman, & McCombs, 2003). Further research, will have to include longitudinal designs to study the role of achievement goals over time to see, for example, if mastery goals evaluated at the beginning of the academic year could in fact predict a higher academic achievement at the end of the academic year.

Another limitation of this study concerns the fact that our results are limited to the Spanish Language course. Although Language is an important course in Peruvian education, further studies on other courses such as mathematics or science need to be conducted in order to see if the results are the same across courses.

Conclusion

Despite these limitations our research gives support to achievement goal theory in a Peruvian sample. This highlights the fact that there are similarities in the relationships of achievement goal constructs and outcomes among different cultures (Kaplan et al., 2002, p. 32). Moreover, achievement goal theory and constructs are proved and validated in a Latin-American sample of students, showing again that relationships hold not only inside within the same culture but also across cultures.

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