

Personal, family, and academic factors  
affecting low achievement in secondary school

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## **ABSTRACT**

**Introduction.** Understanding different parameters which contribute directly to low achievement is a frequent topic, especially when international surveys such as the one carried out by the OECD show that 26% of secondary students in Spain (6% above the average of the all other countries surveyed) do not attain the corresponding diploma. The present study aims to establish relationships between personal, family and academic factors that account for school failure, as well as determine how these factors influence each other.

**Method.** The sample was composed of a total of 1178 students from four secondary schools in Almeria city (Spain), including the four years of Mandatory Secondary Education. In order to collect the data two measuring instruments were used: an adaptaion of the TAMAI questionnaire and a measurement of school failure.

**Results.** The results of this survey make clear the direct influence of variables such as parents' academic level, gender, motivation, relationships between peers, and others.

**Discussion.** The hypotheses were fulfilled differentially, showing the selective predictive power of the different contextual variables (family and school related) in accounting for school failure in students of Secondary Education. Such results offer us very relevant information for better understanding and for decision-making with an aim towards prevention of school failure during this educational stage.

**KEYWORDS:** school failure, secondary education, academic motivation, academic environment

## INTRODUCTION

Numerous studies, such as those carried out by Fullana Noel (1995) and Montero Marcos (1990) have sought to understand the factors which account for low achievement. Studies seeking to identify what determines academic failure frequently appear as a reaction to conditions of change, such as plans for educational reform, or in response to critical situations: the OECD study (2001) states that 26% of Spanish students in ESO (mandatory secondary education) fail to obtain the corresponding diploma.

The very concept of academic failure varies in its definition. Rodríguez Castellanos (1986) considers academic failure as the situation in which the subject does not attain the expected achievement according to his or her abilities, resulting in an altered personality which affects all other aspects of life. Similarly, Tapia (2002) notes that, while the current Educational System perceives that the student fails if he or she does not pass, more appropriate for determining academic failure is whether the student performs below his or her potential.

In general, the various studies which attempt to explain academic failure do so beginning with the three elements that intervene in education: parents (family causal factors), teachers (academic causal factors), and students (personal causal factors). Among personal variables most studied are motivation and self-concept. Motivation is considered to be the element that initiates the subject's own involvement in learning: when a student is strongly motivated, all his effort and personality are directed toward the achievement of a specific goal, thus bringing to bear all his or her resources. According to González (1997), a consensus exists among the diverse motivational theories and approaches inasmuch as they conceptualize motivation in terms of conscious beliefs and values. In the arena of motivation there exist all kind of opinions and results, some research claims that motivation maintains a circular relationship with the level of information processing and this in turn with performance (Núñez, González-Pienda, García, González-Pumariega, Roces, Álvarez & González, 1998). In other research motivation is found to be one of the elements that most distinguishes those required to repeat a schoolyear from those being promoted (Burgaleta, Valverde & Fernández Garrido, 1988), the repeaters being those who are most bored in class (Campuzano, 2001). Other authors have found that subjects themselves attribute low performance to low ability and to luck (Valle Arias et al, 1999), and an improvement in

performance to motivation (task goal orientation), to self-regulating behaviors, and to competence as a function of task characteristics (Slater, 2002). In recent research positive correlations were found between the value given to the task and the perceptions of auto-efficacy and performance (Yi Chia, 2002). However, in a recent theoretical review, De la Fuente (2002) shows how there has been a branching off toward the study of academic goals, to the detriment of those of a social nature, even though these have been shown to be especially important in the most disadvantaged social contexts.

Self-concept results from the subject's internalization of his social image. It is developed from different interactions with the social context and agents, great importance assigned to acceptance or rejection from others, especially significant others. Marsh, Parker and Smith (1983) propose a hierarchical and multifaceted model of self-concept, in which there exists one general factor and several specific ones, the latter including academic self-concept. For Sánchez (2000), academic self-concept is at the base of future school success or failure, having been formed starting in Early Childhood Education from peer contact and teacher attitude and expectations. One interesting study indicates positive self-concept as one risk-reducing factor against academic failure in the case of unfavorable family situations (Fullana Noel, 1995). Studies such as that by Castejón and Pérez (1998), using a causal-explicative model, emphasize that academic self-concept directly influences the global performance of the pupil. Other research finds that the greater the pupil's self-concept, more learning strategies will he use, facilitating deep information processing (Núñez Pérez et al., 1998). In other studies self-concept was found to better predict performance than variables such as age or student gender (Edwards, 2002). Zsolnai (2002) informed that self-concept influences performance indirectly by means of its influence on intrinsic motivation. In other research it was shown, by means of an analysis of structural equations, how self-concept related causally to performance, but not vice-versa (González Pienda et al., 2002).

Another group of performance-determining factors are the social/family factors. The educational condition attributed to the family is beyond all doubt or discussion, as there is an ever-increasing awareness of the importance of the parents' role in the progress and educational development of their children. Schiefelbaum and Simmons (cited by Adell, 2002, p. 91) consider family background the most important and most weighty factor in determining the academic performance attained by the student. Among family factors of greatest influence are social class variables and the educational and family environment.

With regard to social class, relevant research tells us that one's results and expectations for the future are better the higher one belongs on the social ladder. One of the latest studies carried out on performance in secondary school in Spain (Marchesi and Martín, 2002), informed that upper-class students show a better use of metacognitive strategies than those of a lower social class. The influence of social class is mediated by cultural level, which in turn determines family expectations, values and attitudes regarding education. In other words, motivation to achieve depends more on the parents' level of learning than on their level of income (Llorente Guardione, 1990). Castejón and Pérez (1998) find that the child's perception of family support directly affects performance, while the mother's level of studies does so indirectly. Other research indicates that the most influential family components on performance are not socio-cultural or economic, but rather those pertaining to the affective or psychological dimension; that is, although good academic preparation in the parents, especially the mother, and a positive cultural environment, favor scholastic performance, it is affective and relational variables which most stand out as factors in performance.

The influence of the family educational climate is defined by the amount and the style of help that children receive from the family; this is determined by elements of the family context, like the dynamic of communication and affective relationships, attitudes towards values, expectations, etc. Along these same lines, Marchesi and Martín (2002) tell us that parental expectations have a notable influence on academic results, even when controlling for initial knowledge and socio-economic context. Castejón and Pérez (1998) find indirect relationships with performance from the student's perception of how much importance his or her parents assign to study at home. Other studies show that the level of family cohesion (Caplan et al, 2002) and family relationships (Buote, 2001) prove themselves capable of predicting performance. The parenting style (democratic, authoritarian, etc) is also influential both in the students' educational process as well as in family-school relations; research such as that by Rodríguez Castellano (1986) demonstrate that a positive family climate favors the development of well-adapted, mature, stable and integrated subjects, and an unfavorable family climate promotes non-adaptation, immaturity, lack of balance and insecurity.

The last group of determining factors is made up of school variables, principally the student's teacher and his peers. Marchesi and Martín (2002) propose that the pupil's sociocultural level and his previous aptitudes indirectly influence the results of learning since they delimit classroom procedures. As for characteristics of the teacher-tutor, this is

considered a key element for the pupil's personal and academic development, the value given from teacher to pupil and vice-versa are usually reciprocal, highlighting additionally the personal relationship (Marchesi and Martín, 2002). These same authors find that teacher expectations significantly influence student results. The teachers' assessment is mediated by two variables: (1) the student's intelligence, that is, the greater the intelligence, the better the academic results and the better reciprocal appreciation between teacher and student; (2) family support for study also makes the student value his teacher more highly (Castejón and Pérez, 1998). Other studies find positive relationships between the teacher's motivation and that of the student (Atkinson, 2000). Teacher-pupil relations are also mediated by the teacher's attribution of poor performance to the student (Georgiou et al., 2002). Peer influence on the child's development occurs by similar mechanisms as those used by adults: reinforcement, modeling, and direct teaching and skills. Interaction with peers also promotes acquisition of social competencies such as controlling aggressive impulses and the expression of prosocial behaviors. In relation to academic performance, the sociometric status of the student influences performance both directly and indirectly, since it is influenced by intelligence (Castejón & Pérez, 1998). Other research also shows that positive correlations exist between performance and peer relationships (Buote, 2002), demonstrating in another study that students failing in school are those most rejected by their group-class (Montero, 1990).

### **Objectives**

The general objective of our own research was to find evidence of the influence of a set of diverse variables on school failure. We believe that the results allow us to more sharply focus data obtained in other studies regarding school failure which only take into account one of the different variables involved (Burgaleta et al, 1988; Valle Arias et al, 1999; Sánchez, 2000; Buote, 2001; Caplan et al, 2002, among others), this is especially important if we wish to have a more complete view of the multiple causes that, interactively, produce results of school failure and/or low performance. For more specific objectives, we proposed the following: (1) see to what extent the different variables are interrelated and influence and explain scholastic failures; (2) try to establish the differential incidence that each variable may present on scholastic failure.

### **Hypotheses**

H<sub>1</sub>: personal variables (age), academic variables (grade level) and family variables (parents' level of education) together with affective-motivational variables

(*questionnaire* variables), taken jointly, must be able to predict school failure to a greater extent than they can individually.

H<sub>2</sub>: personal variables (age), academic variables (grade level) and family variables (parents' level of education) must be able to predict the affective-motivational level of the student.

H<sub>3</sub>: personal variables (gender and age), family variables (mother and father's level of education) and academic variables (secondary school, group, and cycle) must affect the student's academic performance as well as his affective-motivational level.

H<sub>4</sub>: the affective-motivational variables should affect the level of student performance.

## **METHOD**

### **Subjects**

The sample was made up of a total of 1178 students from four secondary schools in Almeria city, representing in turn the four grade levels of Mandatory Secondary Education (E.S.O.). The students' distribution is as follows: 255 subjects from first year, 316 from second year, 296 from third year, and 259 from fourth. As for gender, 565 were girls, and 603 boys. The average age was 13.73 years (sd=1.41). Students were divided into groups as follows: group A, 403 students; group B, 364; group C, 310; group D, 84; group E, 17 students.

### **Instruments**

In order to perform data collection two measuring instruments were used: an adaptation of the TAMAI questionnaire, and a measure of scholastic failure.

#### 1) Measure of personal, family and personal adaptation.

The "Self-assessing Multifactorial Test of Childhood Adaptation" TAMAI (Hernández & Hernández, 1998), was used to evaluate the student's level of personal, social, academic and family adaptation, as well as parents' attitudes in childraising. It consists of a self-assessment containing 175 propositions to which one must respond affirmatively or negatively; the excessive number of items and the characteristics of the sample required an adaptation of the questionnaire. We selected a total of 34 items from the original test, which, when submitted to an Alpha of Cronbach reliability analysis produced a resulting index of .72, acceptable enough. Subsequently, we carried out an exploratory factorial analysis of 34

items in order to facilitate organization and comprehension of the information we were aiming to collect. In order to determine whether the factorial analysis was adequate or not, we previously carried out Bartlett's Test of Sphericity (in order to sustain that in effect there did exist significant intercorrelations between the items) and the Kaiser-Meyer-Olkin index (measure of sample adequacy). The values of both, which should be as high as possible, were as follows for each level of analysis; level 1 (12 factors) KMO= .761; Barlett= 3362; signif. = .000; level 2 (four dimensions) KMO= .744; Barlett= 929.598; signif.= .000; level 3 (one component) KMO= .609; Barlett= 211.07; signif.= .000.

The adapted questionnaire was named "Questionnaire on motivational, affective and social/family aspects in the academic environment". Its organization and structure is as follows:

Dimension 1. Academic environment.

Factor 2: Academic self-concept.

Factor 3: Relationships with parents and adults.

Factor 4: Social relationships in class.

Factor 6: Friendship relations.

Factor 12: Locus of control.

Dimension 2. Academic motivation.

Factor 1: Behavior in class.

Factor 8: Future expectations.

Dimension 3. Social support.

Factor 5: Family interest.

Factor 7: Perceived acceptance.

Factor 11: Relationship with teachers.

Dimension 4. Academic and affective assessment.

Factor 9: Academic assessment.

Factor 10: Affective assessment.

2) Measure of academic failure.

The number of schoolyears repeated was used as a criterion, classified thus: 0 schoolyears repeated, 1 schoolyear repeated, 2 schoolyears repeated.



## **Design**

The different sections of the questionnaire constitute what we will call *questionnaire variables*, and take in personal, family and academic variables. The remaining variables were considered *selection variables*, and also take in personal, family and academic variables: the number of years repeated, the grade level, the secondary school and the group (academic variables), age and gender (personal variables), mother and father's educational level (family variables). Thus we have two types of variables, *selection* and *questionnaire*, even though both allude to: *personal* variables (age, gender, academic self-concept, locus of control, classroom behavior, perceived acceptance, affective assessment), *family* variables (parents' educational level, relationships with parents and adults, family interest), and *academic* variables (number of schoolyears repeated, grade level, secondary school, group social relationships in class, friendship relations, future expectations, relationships with teachers, academic assessment).

## **Procedure**

Questionnaires were completed in the classroom, during normal class hours, administered by the guidance counselor at each secondary school, and in an entirely anonymous fashion for each student. In order to demonstrate the first two hypotheses, a multiple regression analysis was carried out, while for the remaining hypotheses a simple analysis of variance (ANOVA) and a multiple analysis of variance (MANOVA) were carried out.

## **RESULTS**

### **Predictive relationships**

In Tables 1, 2 we find the results of the regression analysis used for the purpose of satisfying this investigation's first objective. In Table 1, one can observe the power for predicting academic failure by means of the variables *grade level*, *age*, *father and mother's studies*; the indexes show that all variables except *mother's studies*, are able to rather significantly predict performance, although in a different way as shown by the beta index. Thus we find that the *grade level* and the *father's level of studies* negatively predict the number of schoolyears repeated, while *age* does so such that the greater the age, the greater the number of schoolyears repeated. In Table 1 we also ascertain (in another regression analysis independent from the earlier one) how affective-motivational aspects predict academic failure; only two of the four dimensions show predictive character, and that of a

negative sense, that is, the greater the number of grades repeated, the lower score is shown in *Academic* and *Academic motivation*

**TABLE 1**

Regression analysis between academic variables (grade level), personal variables (age) and family variables (father's and mother's studies) and the number of schoolyears repeated, and between the affective-motivational variables and the number of schoolyears repeated.

predictive variable	Criterion Variable	F	p<	Beta
Grade level				-1.082***
Age	Schoolyears	296.44*****		1.482***
Father's studies	repeated			-0.079**
Mother's studies				-0.013
D1. Academic environment				-0.150***
D2. Academic motivation	Schoolyears	11.098**		-0.105**
D3. Social support	repeated			0.000
D3. Academic and affective assessment				0.009

\*p<.05      \*\*p<.01      \*\*\*p<.001      \*\*\*\*p<.0001

In Table 2 we show the results of the regression analysis taken with the variables that in the two earlier regression analyses show predictive ability for performance. In this case we have eliminated the dimension of *Academic motivacion* since, even though in interaction with the other variables it presented a significant level and *Academic environment* did not, the important thing is to increase  $R^2$  (variance explained by the regressors) and this index is less than when using *Academic motivation* ( $R^2=0.53$ ) than when using *Academic environment* ( $R^2=0.58$ ). This way we intend to establish a simple explicative model which stems from the variables involved in the differences in performance. We find thus that 34% ( $0.58^2$ ) of the variation in performance in our sample of 1178 students is due to personal variables such as *age*, *academic self-concept* (factor 2) and the *locus of control* (factor 12); academic variables such as *grade level*, *Social relationships in class* (factor 4) and *Friendship relations* (factor 6); and family variables such as *father's level of studies* and *Relationships with parents and adults* (factor 3).

**TABLE 2**

Joint regression analysis between personal variables (age), academic variables (grade level), family variables (father's level of studies) and affective-motivational variables and schoolyears repeated.

predicting variable	Criterion variable	F	p<	Beta	p<	R corrected square
	Schoolyears repeated	333.67****		-1.100*** 1.506*** -0.062** -0.060**		0.58 <sup>2</sup> =34%
*p<.05	**p<.01	***p<.001	****p<.0001			

Later, in order to meet the second research objective, we analyzed the level in which the variables of *age*, *grade level*, *father's studies* and *mother's studies* were able to predict the affective-motivational level of the student, results are shown in Table 3.

**TABLE 3**

Regression analysis between personal, academic and family variables and affective-motivational variables.

Predicting variable	Criterion Variable	F	p<	Beta	p<
Grade level	D1.Academic environment	11.49**		0.389**	
Age				-0.405**	
Father's studies				0.094*	
Mother's studies				-0.028	
Grade level	D2.Academic motivation	5.75*		0.012	
Age				-0.155*	
Father's studies				0.069	
Mother's studies				-0.049	
Grade level	D3. Social support	4.306*		-0.155*	
Age				0.027	
Father's studies				0.035	
Mother's studies				0.009	
Grade level	D4. Academic and affective Assessment	8.16**		0.199**	
Age				-0.100	
Father's studies				0.009	
Mother's studies				0,118**	
*p<.05	**p<.01	***p<.001	****p<.0001		

*Academic environment* is best explained, according to the F index, from the regressors considered: as *grade level* and the *father's level of studies* increase, the higher the score for *Academic environment*, and lower as the student's *age* increases. *Academic motivation* presents a lower F, being explained uniquely by the variable *age*, such that as age increases, the level of *Academic motivation* decreases. The Social support dimension presents the lowest F; however, the higher the *grade level*, the less students claim to receive *Social support* (composed of the factors *Family interest*, *Perceived acceptance*, and *Relationship with teachers*). Finally, *Academic and Affective Assessment* also presents a high F due to *grade level*, a higher score as *grade level* increases and also the level of the mother's studies (the higher the mother's level of studies, the higher the score for this variable).

### **Inferential analyses**

In order to confirm results found in the regression analysis, and to further explore interactions and influences between the variables and academic failure, we performed two types of analysis: ANOVA with each factor (age, grade level, father's studies, etc.), considering the different levels of each, the dependent variable being the number of schoolyears repeated; MANOVA with the same factor and considering as dependent variables the questionnaire variables (*Academic environment*, *Academic motivation*, *Social support*, *Academic and affective assessment*).

#### *Age and gender.*

The factor *age* (Table 4), as one would expect, proved to be important in explaining performance,  $F(1.122)=263.05$ ,  $p<.0001$ , showing the expected effect that among older students there are more repeaters. With regard to the Manova, once again *age* appears as an explaining variable in the affective-motivational aspects: as students get older, the scores observed for *Academic environment*, *Academic motivation* and *Social support* perceived by the student decrease.

*Gender* also explains part of the variation in performance,  $F(1.122)=14.89$ ,  $p<.001$ , the girls showing better performance. On the other hand, in the manova, this variable did not appear as able to discriminate between different questionnaire variables, the same occurred with the combination *age x gender* both in relation to performance and in relation to the questionnaire variables (thus they are not included in the table).

**TABLE 4**

Simple analysis of variance (anova) and multiple analysis of variance (manova) between age and gender and schoolyears repeated and the affective-motivational variables.

Factor	indexes	F	p<	dependent variable	F	p<
<b>AGE:</b>	<b>ANOVA:</b>	Schoolyears repeated				
		1) 11-14 M=0,13 (sd= 0.38)	263.05****			
	2) 15-18 M=0,65 (sd= 0.71)	( 2>1 )				
	<b>MANOVA:</b>					
	Pillais	3.12***		Academic environment	2.44**	
				Academic motivation	3.89****	
				Social support	4.91****	
				Academic and affective assessment	1.98	
<b>GENDER</b>	<b>ANOVA:</b>	Schoolyears repeated				
		1) Male M= 0.34 (sd=0.63)	14.89****			
		2) Female M= 0.23 (sd=0.48)	( 1>2 )			
		*p<.05	**p<.01	***p<.001	****p<.0001	

*Father's studies and mother's studies*

In relation to the father's and mother's level of studies, Table 5, the only factor with explicative ability of academic failure is *father's studies*,  $F(1.019)=3.454$ ,  $p<.05$ ; just as is shown by the averages of schoolyears repeated, students whose father has higher-level studies are those who least fail, and so on. The *manova* shows the level of *father's studies* with a modulating role in performance, appearing again with ability to explain variation, this time in *Academic motivation* (both variables significantly influenced student performance).

The level of *mother's studies* does not show sufficient explicative ability for the number of schoolyears repeated, but it does explain, with an F index greater than that of the father, the variation in *Academic motivation*. The combination *father's studies x mother's studies* only showed explicative ability for the variation in *Academic motivation*.

**TABLE 5**

Simple analysis of variance (anova) and multiple analysis of variance (manova) between the father's and mother's level of studies and schoolyears repeated and the affective-motivational level.

<b>factor</b>	<b>indices</b>	<b>F</b> <b>p&lt;</b>	<b>dependent variable</b>	<b>F</b>	<b>p&lt;</b>	
<b>FATHER'S STUDIES:</b>	<b>ANOVA:</b>		Schoolyears repeated	3.454*		
			1) Does not read/write M= 0.72	(1>2>3, 4 )		
			2) Primary Studies M= 0.30			
			3) Secondary Studies M= 0.13			
			4) Higher Education M= 0.13			
	<b>MANOVA:</b>	Pillais	1.52	Academic environment	2.28	
				Academic motivation	3.98**	
				Social support	0.29	
				Academic and affective assessment	0.67	
<b>MOTHER'S STUDIES:</b>	<b>MANOVA:</b>	Pillais	1.87*	Academic environment	0.69	
				Academic motivation	4.80**	
				Social support	0.60	
				Academic and affective assessment	1.02	
<b>FATHER'S STUDIES x MOTHER'S STUDIES:</b>	<b>MANOVA:</b>	Pillais	1.23	Academic environment	0.87	
				Academic motivation	1.95*	
				Social support	1.38	
				Academic and affective assessment	0.95	

\*p<.05

\*\*p<.01

\*\*\*p<.001

\*\*\*\*p<.0001

*Secondary school, group, and cycle*

In Table 6 (only significant data are shown), we see the results of the simple and multiple analyses of variance with factors *Secondary school, group and cycle*. In regards to *Secondary school* it can be seen that at one School (No. 4) there exists to a significant degree,  $F(1.149)=4.883$ ,  $p<.01$ , worse performance than in the others. It is also the only secondary school that yields significant variations (per the manova) in the dimension of Academic and affective assessment, that is, they are the pupils most concerned with displeasing people who appreciate them, who consider that their future does not depend on their studies, and who most blame themselves for their poor results. The factor *group* also revealed explicative

ability for variation in performance,  $F(1,149)=19.261, p<.001$ , students show a level a academic failure per the formula  $D>C>B>A$ . Once again we find that for diverse reasons (choice of electives is the most usual) students are grouped according to their performance; it does not show, however, significant differences in the manova for any of the four affective-motivational dimensions. The factor *cycle*, just as one might expect, yields differences in the anova,  $F(1,149)=24.875, p<.0001$ , since in the second cycle it is normal that there be more repeaters; considering this factor, there were no differences in the manova for affective-motivational variables.

The combination of variables *Secondary School x group*,  $F(1,149)=5.081, p<.001$ , made apparent that the students of Secondary School 3 are those with the least index of academic failure in all their groups (though we only include group A so as not to further complicate the tables); significant differences in the manova did not appear, thus these data are not included.

For the combination *Secondary school x cycle*, significant differences appeared in both the anova and the manova. Thus we find that in the anova,  $F(1,149)=3.996, p<.01$ , that students from Secondary School No. 1 are those with greatest variation in their performance during cycles 1 and 2. With regard to the manova, it is in Academic and Affective Assessment where significant differences are produced according to *Secondary school x cycle*, in this case the students from Secondary School No. 3 are those who present a noteworthy increase in assessment (greater in the second cycle) for this questionnaire variable.

Finally, the crossing of factors *Secondary school x group x cycle*,  $F(1,149)=4.614, p<.001$ , presents results in the anova such as were discussed earlier: the students in *group A* from the first *cycle* perform best, and those from group C or D (according to the size of the Secondary School) from the second cycle are those who most fail. The manova carried out with these three factors and the affective-motivational variables shows that variations in the Academic environment variable are due to two Secondary Schools (1 and 2) in which there also exist differences as to both *cycle* and *group*; the significant variation in Academic and Affective Assessment is produced in Secondary School number 3, although the highest score was reached by Secondary School number 4.

**TABLE 6**

Simple analysis of variance (anova) and multiple analysis of variance (manova) between academic factors and schoolyears repeated and the affective-motivational level.

Factor	indices	F	p<	dependent variable	F	p<	
<b>Secondary School:</b>	<b>ANOVA:</b>			<b>Schoolyears repeated</b>	4.883**		
				School 1 M=0.27 (sd=0.55)	( 4>2>1>3 )		
				School 2 M=0.29 (sd=0.57)			
				School 3 M=0.22 (sd=0.47)			
				School 4 M=0.37(sd=0.64)			
	<b>MANOVA:</b>	Pillais	2,72**		Academic environment	0.53	
					Academic motivation	1.27	
					Social support	2.41	
					Academic and affective assessment	5.23**	
<b>Group:</b>	<b>ANOVA:</b>			<b>Schoolyears repeated</b>	19.261****		
				Group A M= 0.16 (sd=0.44)			
				Group B M= 0.26 (sd=0.52)	( D>C>B>A)		
				Group C M= 0.36 (sd=0,62)			
				Group D M= 0.67 (sd=0,71)			
<b>Cycle:</b>	<b>ANOVA:</b>			<b>Schoolyears repeated</b>	24.875****		
				Cycle 1 M= 0.18 (sd= 0.47)			
				Cycle 2 M= 0.39 (sd= 0.62)			
<b>School x Group</b>	<b>ANOVA</b>			<b>Schoolyears repeated</b>	5.081***		
				School 1, Gr. A M=0.26 (sd=0.12)			
				School 2, Gr. A M=0.21 (sd=0.52)	( 4>1>2>3)		
				School 3, Gr. A M=0.08 (sd=0.33)			
				School 4, Gr. A M=0.38 (sd=0.61)			
<b>School x Cycle</b>	<b>ANOVA</b>			<b>Schoolyears repeated</b>	3.996**		
				School 1	Cycle 1 M=0.15 (sd=0.41)		
					Cycle 2 M=0.4 (sd=0.6)		
				School 2	Cycle 1 M=0.21 (0.49)		
					Cycle 2 M=0.38 (0.63)	( 1>4>2>3)	
				School 3	Cycle 1 M=0.17 (0.39)		
					Cycle 2 M=0.28 (0.53)		
				School 4	Cycle 1 M=0.22 (0.62)		
					Cycle 2 M=0.49 (0.62)		
	<b>MANOVA</b>	1.98*		Academic environment	0.69		
	Pillais			Academic motivation	0.77		
				Social support	2.52		
				Academic and affective assessment	3.93**		



<b>School Group x ANOVA: Cycle</b>	<b>Schoolyears repeated</b>		4.883***
	<b>School 1</b>		
	Gr. A	Cycle 1 M= 0.00 (sd=0.00)	
		Cycle 2 M= 0.03 (sd = 0.18)	
	Gr. D	Cycle 1 M= 0.62 (sd = 0.63)	
		Cycle 2 M= 1.33 (sd = 0.81)	
	<b>School 2</b>		
	Gr. A	Cycle 1 M= 0.17 (sd = 0.49)	
		Cycle 2 M= 0.24 (sd = 0.54)	
	Gr. C	Cycle 1 M= 0.27 (sd = 0.49)	
		Cycle 2 M= 0.20 (sd = 0.41)	
	<b>School 3</b>		
	Gr. A	Cycle 1 M= 0.06 (sd = 0.31)	
		Cycle 2 M= 0.10 (sd = 0.36)	
	Gr. C	Cycle 1 M= 0.25 (sd = 0.43)	
	Cycle 2 M= 0.35 (sd = 0.62)		
<b>School 4</b>			
Gr. A	Cycle 1 M= 0.16 (dt= 0.48)		
	Cycle 2 M= 0.58 (dt= 0.65)		
Gr. C	Cycle 1 M= 0.46 (dt= 1.06)		
	Cycle 2 M= 0.50 (dt= 0.60)		
<b>MANOVA:</b>	2.57***	Academic environment	3.87***
Pillais	2.57***	Academic motivation	1.59
Wilks	2.57***	Social support	1.08
Hotelling		Academic and affective assessment	4.07***

\*p<.05    \*\*p<.01    \*\*\*p<.001    \*\*\*\*p<.0001

Finally, and in order to address our second research objective, we carried out an anova to find out the influence of affective-motivational variables on performance in our sample of students. The variable *Academic environment* shows explicative ability,  $F(1,077)=1.54$ ,  $p<.001$ , for the variation in performance, scores for this dimension decreasing as the number of schoolyears repeated increases. All factors which are components are this variable show explicative ability in the variance, though the most powerfully explicative are the factors *Friendship relations*, *Relationships with parents and adults* and *Social relationships in class*. The next and final variable with explicative ability for performance is *Academic motivation*; it is the variable which shows greater significance,  $F(1,079)=5.650$ ,  $p<.001$ , and similarly to the previous variable, its level decreases as the student's performance decreases. The factor (belonging to the Academic motivation variable) with most explicative ability in the variance is that of *Behavior in class*: the students who show the worst classroom behavior are also

those with most academic failure. The variables of *Social support* and *Academic and affective assessment* do not present enough explicative ability for the variation in performance.

**TABLE 7**  
Simple analysis of variance (anova) between affective-motivational aspects and schoolyears repeated.

<b>Dependent variable</b>	<b>F</b>	<b>p&lt;</b>	<b>independent variable</b>
<b>D1. ACADEMIC ENVIRONMENT</b>	1.54***		<b>Schoolyears repeated</b>
			<b>0 years</b> M= 1.79 (sd= 0.15) (0>1>2)
			<b>1 year</b> M= 1.71 (sd = 0.16)
			<b>2 years</b> M= 1.65 (sd = 0.10)
<b>D2. ACADEMIC MOTIVATION</b>	5.65***		<b>Schoolyears repeated</b>
			<b>0 years</b> M= 1.76 (sd = 0.22) (0>1,2)
			<b>1 year</b> M= 1.67 (sd = 0.27)
			<b>2 years</b> M= 1.67 (sd = 0.23)
<b>D3. SOCIAL SUPPORT</b>	0.90		<b>Schoolyears repeated</b>
			<b>0 years</b> M= 1.76 (sd = 0.17) (0>1,2)
			<b>1 year</b> M= 1.73 (sd = 0.61)
			<b>2 years</b> M= 1.73 (sd = 0.14)
<b>D4. ACADEMIC AND AFFECTIVE ASSESSMENT</b>	0.52		<b>Schoolyears repeated</b>
			<b>0 years</b> M= 1.83 (sd = 0.23) (0>2>1)
			<b>1 year</b> M= 1.80 (sd = 0.21)
			<b>2 years</b> M= 1.82 (sd = 0.20)

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\*p<.05      \*\*p<.01      \*\*\*p<.001      \*\*\*\*p<.0001

## DISCUSSION

Results obtained endorse, although differentially, the earlier hypotheses established in this paper. The first hypothesis was seen partially fulfilled since the level of *mother's studies* did not show predictive ability for performance; as we will see further on, this factor influences indirectly in performance by means of its direct influence on *Academic motivation*. The second hypothesis was also seen as fulfilled in part, since only from the dimensions *Academic environment* and *Academic motivation* is performance significantly predicted. In this way, beginning with the different regressors with predictive ability for academic failure

we construct a model with the variables that, in an interactive fashion, are able to explain as much as 34% of the variance of performance: personal determinants such as *age*, *academic self-concept* (factor 2) and the *Locus of control* (factor 12); family determinants such as the level of *Father's studies* and the *Relationship with parents and adults* (factor 3) and academic determinants such as *grade level*, *Friendship relationships* (factor 6) and *Social relationships in class* (factor 4). These results concur with those found in diverse research efforts (Fullana, 1995; Llorente, 1990; Martínez, 1996; Montero, 1990; Valle Arias et al, 1999)

In order to finish addressing the first objective of our research, we inquired as to how the different variables interacted among themselves such as was proposed in the second hypothesis. The affective-motivational variable best explained by the regressors (considered as a whole, not individually) is *Academic environment*, which maintains a positive relationship with *father's studies* and *grade level* and a negative one with *age*, that is, it is the repeating students (who obviously are getting older) who maintain a low score in this dimension. *Academic motivation* is also explained negatively from *age* but not from *grade level*, implying again that this negative relationship is due to the students who show most failure (similar results found by Burgaleta et al, 1988). As students progress to higher *grade level* they also claim to perceive less *Social support*, this may be due to teachers and parents who withdraw once they see the student is getting on well, or it may be due to the student's being written off as "hopeless" given his bad performance. *Academic and affective assessment* is the second best explained dimension by two of the regressors, *grade level* and *mother's studies*: as these two variables increase, the students feel more concerned about not displeasing those who they appreciate, they blame themselves more for the negative aspects of their life, and feel that their future depends less on their studies.

The anova and manova carried out later allowed us to address our second research objective, as well as the third and fourth hypotheses. The anova with the factor *age* showed the expected effect that the older students show the highest failure index (there are more repeaters as age increases); the manova on affective-motivational aspects verifies the explicative ability of *age* in the variation of scores for *Academic environment*, *Academic motivation*, and *Social support*. With relation to *gender*, the fact is clear that women perform better than men, although this factor does not differentially influence the variance of affective-motivational factors.

The analysis of variance carried out with the level of *father's and mother's studies* sharpens the results obtained with the regression analysis. Again the level of *father's studies* is able to explain the variation in performance and in *Academic motivation*, while the level of *mother's studies* is only able to explain the variation in *Academic motivation* (although more significantly than the father's studies). This factor indirectly influences performance by means of *Academic motivation* that, as we recall, was the affective-motivation variable with the greatest predictive power for performance. In fact, the joint level of studies of the father and the mother does not directly explain performance, but they do so through the level of *Academic motivation* of their child, results concurring with those found by Llorente (1990).

The analysis of variance on the factors *Secondary school* and *group* and *cycle*, show different levels of interaction with performance and the affective-motivational aspects. With regard to *Secondary School* a significantly lower performance appears in one of the schools, which is, additionally, the only one that also presents significant variation in *Academic and affective assessment*. The fact that the school's students with lowest performance are those that score most highly in this affective-motivational dimension, leads one to think that such an assessment may be the result of academic failure. To begin with, this variable showed little explicative ability for performance.

The last anova carried out allowed us to partially confirm the paper's last hypothesis. The variable with the most explicative ability of the performance variance is *Academic motivation*, whose level decreases as performance decreases (similar results obtained by Rocés, Touron & González, 1995; Campuzano, 2001; Checa, 2000). Motivation also decreases with age, although more slowly if performance is good. *Academic environment*, as we have already seen, also shows explicative ability, in the same direction, for performance. The dimensions of *Academic and affective assessment* and *Social support* do not explain performance, rather they appear to be a consequence of low performance.

In spite of results and evidence found, this research also presents limitations which it is necessary to mention. One of the main limitations or lacks is the absence of greater contextualization for each of the schools, and above all, of the origin of its student body, making possible better information about socio-economic and cultural factors, of no small importance when it comes to better understanding the influence of the environment in academic failure. In addition to the outside context, it would be fundamental to have

information about the specific context of each school and class. Another important lack is seen in the absence of information from more qualitative techniques to triangulate the results found.

Keeping all this in mind, and in concordance with the limitations exposed and the results obtained, future lines of research should explore more deeply and more specifically the way in which variables like the type of goals pursued by the student, his or her personality characteristics, class organization, peer group pressure, teacher personality and style, etc. influence the evolution and type of affective-motivational characteristics that the students are acquiring throughout their journey through the Educational System, and the repercussions of all that in the student's final performance, and therefore in his or her potential academic failure.

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