

# Extra-curricular activities and academic performance in secondary students

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## Abstract

**Introduction.** In this paper we study the possible influence of extra-curricular activities (study-related and/or sports) on academic performance of first- and second-year pupils in *Educación Secundaria Obligatoria (ESO)* [N.T. seventh- and eighth-graders].

**Method.** We randomly selected 12 schools in the city (9 public and 3 private), and randomly chose participating pupils (222), assigning them to two groups as a function of whether they were involved in activities outside the schoolday. Thus, the first group was made up of pupils who participated in extra-curricular activities (43 males and 68 females) and the second group contained pupils who did not (35 males and 76 females). Afterward we used analysis of variance to verify whether there were significant differences in academic performance of the two groups.

**Results.** Results indicate that the group involved in activities outside the schoolday yielded better academic performance, especially those that participated in study-related activities, tutoring support or private classes, and those that participated in mixed activities (both sports and academic).

**Discussion.** Finally, we discuss the possible influence of extra-curricular activities on academic performance and whether such participation is advisable.

**Keywords:** academic performance, extra-curricular activities, secondary school.

## **Introduction**

Using terms like school failure or academic performance continues to be problematic since both concepts are controversial. The relationship established between the two has led to numerous criticisms and to adopting different approaches to address the issue. On one hand, an assessment of school failure, even its very name, has strong negative connotations and there are broad-based problems in drawing the borderline conceptually between failure and success (Marchesi & Hernández, 2003). Additionally, the tendency to stigmatize the “failed” student, and the absence of shared responsibility in factors such as family, the media, society itself, etc., make it really difficult to take on the study of this phenomenon. And so other types of terms or labels are adopted, such as “low performance pupils” or “lack of preparation”.

Many causes or agents have been studied as the etiological starting point for investigating the phenomena of school failure or success. Most notable among these are: the role of the family, family adaptability and cohesion (González, et al., 2003), parental expectations (Marchesi & Martín, 2002), social change and the media (Sánchez, 1997; Pereira, 2003), the educational system, reform and policies (Marchesi, 1995; Martínez & Miquel, 1998), and other psychological aspects such as intellectual capacity (Descals & Rivas, 2002), motivation (Navas, Sampascual & Santed, 2003; Broc, 2003), self-esteem and self-concept (Broc, 2000).

Nonetheless, there seems to be agreement among most authors to explain failure from a multicausal perspective where the phenomenon is analysed at several levels, and where multiple variables are involved. Along these lines, Orden and González (2005), in their review of variables that make the difference between low performance and sufficient performance, affirm that most of these variables are modifiable through formal education.

Undoubtedly, school performance has been one of the indicators or predictors most used and most related to failure. This has been assessed along traditional lines, and perhaps unfairly, from a basically quantitative viewpoint based on scores or marks obtained in different school subjects. In addition to performance, numerous variables have also been related as predictors of either failure or success as a function of the tendency or importance they have in the student’s marks or scores.

But there are controversies not only in delimiting and relating concepts of failure and performance or in studying variables supposedly related to both. Another relevant aspect

under investigation has been determining an adequate methodological system for studying school failure through the prediction drawn from academic performance. In this effort the most-used methods are discriminant analysis, multiple linear regression or logistic regression analysis, among others (García, Alvarado & Jiménez, 2000).

Different activities in which students participate, both inside and outside the school itself, are among the multiple situations or agents that can have an effect on these concepts. Extra-scholastic activities have been associated with an improved educational level, more interpersonal competencies, higher aspirations and a better attention level (Mahoney, Cairos & Farwer, 2003), increased critical thinking and personal and social maturity (Bauer & Liang, 2003), higher motivation (Hollway, 2002), and generally speaking, with great benefits that serve to bridge school activities with those performed outside the academic setting (Noam, Biancarosa & Dechausay, 2003).

This situation has given rise in our society to an almost massive involvement in after-school activities, activities for supporting, complementing and strengthening not only the student's school performance, but also his or her personal development and other aspects such as leisure, health, values, etc. These activities are often grouped into two well-differentiated types: extra-scholastic (activities outside the school program) and extra-curricular (complementary activities carried on within the school setting, and generally under school auspices). However, in popular speech the two concepts are often used as synonyms, despite that differences can be noteworthy, with the first type depending almost exclusively on parents, and the second type being planned and carried out through the schools themselves.

We currently are witnessing an increasing proliferation of activities, be they academic (private classes, foreign languages, music, etc.), sports-related or cultural. Teachers on occasion complain that some students are over-involved in after-school activities and that these are chosen by the parents or are not well planned, thus failing to coordinate with or complement the activities carried out at school. Along these lines, Marsh and Kleitman (2002), state that extra-curricular activities selected and planned at the school are more helpful than those that take place outside, since the latter often lack sufficient planning, order, and logical, coherent meaning.

For all these reasons, this paper seeks to study whether or not a relationship exists between involvement in such after-school activities and the student's academic performance.

### *Objectives and hypothesis*

Our main objective was to study whether there is a relationship between involvement in after-school activities (according to type) and school performance, in *ESO* [mandatory secondary education] students. Our starting hypothesis is to suggest that students involved in extra-curricular activities have higher academic performance than their classmates who do not.

## **Method**

### *Participants*

We randomly selected 12 schools from the city of Cordova, representative of the city's different districts and neighborhoods, 9 of them public schools and 3 private. A self-report was administered to students from first and second year of secondary education; their ages fall between 12 and 14 years. A sample of 222 participants was chosen (77 male students and 114 female), randomly assigned to two groups which were differentiated by involvement in after-school activities (43 males and 68 females) or non-involvement (34 males and 76 females). Within the group that performed activities, we divided students into three groups: those who carry out academic-type activities (foreign language classes, tutoring or private classes, computers, typing, etc.), sports-related (judo, basketball, football, tennis, handball,

swimming, etc.) and mixed (when they performed different types of activities belonging to both groups mentioned).

### *Instruments*

To begin, a self-reporting measure was taken to collect basic information about socio-demographic and family aspects, as well as information about their extra-curricular activities of a sports or academic nature, carried out in addition to regular school activities.

School performance was assessed by taking the average of their marks received for the last period in Language Arts, Mathematics and Foreign Language. Conversion of marks was assigned as follows: *suspense* [less than 50%] = 0; *aprobado* [50-70%] = 1; *notable* [70-85%] = 2; *sobresaliente* [85-100%] = 3. The final average score was obtained by summing the marks obtained and dividing by the number of subjects.

We also applied the *Cuestionario de Técnicas y Hábitos de Estudio* [Study Techniques and Habits Questionnaire] (Salas, 1993). In 100 Yes-No questions, this self-report collects environmental factors in studying, internal factors, and other aspects related to techniques, note-taking, memory, tests, schedules and mental hygiene. Salas (1993) underscores the questionnaire's usefulness for evaluating general study behavior and its main components, for the purpose of providing feedback to the student as to what aspects can be improved, and his or her possible weaknesses. Beginning with this information, the author designs a training procedure for study techniques and habits, to be applied per results obtained.

### *Design and analysis*

A retrospective *ex post facto* design was carried out with a control group, where the groups' academic results were assessed as a function of their participation or non-participation in extra-curricular activities. From the data gathered, we used analysis of variance to check the homogeneity of the groups and whether there were differences in their scholastic performance.

## **Results**

Before proceeding further, we performed homocedasticity tests to corroborate that there were no significant differences in the study's main sociodemographic variables (student age, parents' age and number of siblings). No significant results appeared for either the quantitative variables (Table 1) or for gender distribution of the participants (activity group: 43

males and 68 females; no-activity group: 35 males and 76 females ( $\chi^2 = 2,496$ ;  $df = 2$ ;  $p = 0.287$ ). These results indicate that both groups are equivalent in these measurements, therefore a comparison is feasible.

**Table 1. Homocedasticity analysis**

	<b>Activity</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>F</b>	<b>P</b>
<b>Age</b>	Yes	111	12.72	0.76	2.143	0.145
	No	111	12.85	0.74		
<b>Mother's age</b>	Yes	111	41.67	5.07	0.095	0.759
	No	111	41.53	5.06		
<b>Father's age</b>	Yes	111	44.13	5.56	1.801	0.181
	No	111	43.88	5.97		
<b>N° siblings</b>	Yes	111	2.05	0.99	1.083	0.299
	No	111	2.04	1.21		

(N= number; S.D.= standard deviation; S.S.= Sum of squares; d.f. = degrees of freedom; F = Snedecor's F;  $\alpha = 0.05$ )

Next we performed analysis of variance to determine whether there were significant differences in the students' average mark or in their study techniques, comparing the group that participates in extra-curricular activities with the one that does not. Results are summarized in Table 2, and indicate that students in the extra-curricular activity group obtained significantly better results. However, differences in study techniques were not observed between the two groups.

**Table 2. Results from the analysis of variance in comparison between groups (group with activities – group without activities)**

	<b>Activities</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>S.S.</b>	<b>d.f.</b>	<b>F</b>	<b>P</b>
<b>Average mark</b>	Yes	111	2.549	0.887	3.454	1	4.784	0.03
	No	111	2.300	0.910				
<b>Study techniques</b>	Yes	111	11.80	3.69	0.221	1	0.018	0.89
	No	111	11.74	3.22				

Once the differences between the two groups were verified, we observed that students participated in two well-differentiated types of activity: sports-related activities (football, basketball, judo, etc.) and academic-related activities (foreign language, conservatory, tutoring, computers, etc.). For this reason we performed analyses grouping the students as a function of whether they participated in academic-type activities, sports-related, or activities including both types (mixed-activity group). Homocedasticity analyses (Levene's test of homogeneity of variances) when grouping students by activity type did not indicate differences between the groups with respect to age (Levene's statistic = 1.194;  $df = 2$ ;  $p = 0.307$ ), average mark (Levene's statistic = 1.021;  $df = 2$ ;  $p = 0.364$ ) or study techniques (Levene's statistic = 0.007;  $df = 2$ ;  $p = 0.993$ ). When making this differentiation according to activity type, we obtain results as shown in Table 3, indicating significant differences between the two groups.

**Table 3. Results of analysis of variance in comparison between activities**

		<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>d.f.</b>	<b>F</b>	<b>P</b>
Average mark	Academic Activity	22	2.67	0.37	2	0.701	0.00
	Sports Activity	44	2.21	0.81			
	Mixed Activity	45	2.88	0.58			
Study techniques	Academic Activity	22	12.00	3.49	2	3.727	0.027
	Sports Activity	44	10.70	3.69			
	Mixed Activity	45	12.78	3.57			

Next we performed *a posteriori* comparisons between the groups, according to activity type, and comparing all possible combinations between the different groups (Table 4). These results indicate that students who are involved in mixed activities (of both types) obtain better academic results, when compared to those only involved in sports activities, but not when compared to those belonging to the academic activities group. In turn, students who are involved in academic activities obtain better results than those who pursue only sports activities. Finally, if we compare study techniques used, we find significant differences only when comparing the sports group with the mixed activity group.



**Table 4. Comparison between groups according to activity type**

	<b>Comparison between groups</b>	<b>Diff. in Means</b>	<b>S.D. Error</b>	<b>P</b>
Average Mark	Academic Acty. vs Sports	0.46	0.171	0.031
	Academic Acty. vs Mixed	-0.21	0.171	0.439
	Sports vs Mixed Acty.	-0.67	0.138	0.000
Study Techniques	Academic Acty. vs Sports	1.30	0.940	0.390
	Academic Acty. vs Mixed	-0.78	0.937	0.709
	Sports vs Mixed Acty.	-2.07	0764	0.028

## Discussion

The advisability of participation in after-school activities, what type of activities (sports, cultural, study support, etc.), number of activities, time duration, and so forth, forms part of an open debate within the academic setting as well as in the family and social setting. On occasion we find families that have their children involved in numerous activities, always meaning it for their benefit; however, these situations do not always lead of successful results. Sometimes we may even find children who suffer such consequences as fatigue, lack of concentration, saturation effect, stress, etc.

As explained in the introduction, many factors and activities have been studied as predictors of high or low school performance. This paper seeks to analyze the relationship between participation in after-school activities and students' performance. One of the data that most strikes us is that, although the group involved in extra-curricular activities shows better performance in terms of their average mark from the most recent evaluation, the same does not occur in study technique scores, where we see no difference. Having made this observation, we were interested in checking whether the type of activity influenced performance or not. It is evident that substantial differences exist for academic-type activities (largely related to school life: tutoring, foreign language, etc.) vs. sports or recreational activities, which were less related to the school environment.

Along these lines, we confirmed that there were considerably significant differences in performance in favor of the group involved in academic-type extra-curricular activities, and that such differences did not appear for those involved only in sports.

Finally, when we noticed that a large group of students are involved in both types of activities – academic and sports-related – we performed a final comparison where we confirmed that this type of student obtained better results than their classmates for both variables, although results were not significant when comparing them with those involved only in academic activities.

Taking these analyses into account, it seems reasonable to state that after-school activities benefit students in their performance, above all if there is a balance of academic and sports-related activities. However, in the process of gathering and summarizing data, several doubts and questions arose, to be addressed perhaps in our future research. These refer to the specific type of activity (obviously the large number of activities did not allow us to make these comparisons), the number of activities and the time devoted to them (since there are huge, quite significant variations). We even found students who reported their involvement in more than four activities, with activities every day of the week and with multiple activities on some days.

Future research could be aimed at analysis of activities by type and by time devoted to them, and at establishing a reasonable number of hours for participation, what activities are compatible and/or complementary to school activities, to determine limits beyond which the overload can produce stress in students, and not forgetting aspects of fun and recreation, so important at these ages, etc.

All these aspects can help educators and parents better plan the student's activities so that there is a developmental complement at each stage, adapted to the characteristics of each pupil. For this reason, one valuable proposal might be to establish advisory guidelines so that educators at the schools might offer appropriate guidance to parents in planning activities for individual cases.

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