

## Why students of Secondary Education complete more homework?

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Homework is one of the most controversial educational activities nowadays. Although, there is scientific evidence of their potential on the academic performance and learning of students, it is still necessary to study some variables, which are part of the process of carrying out homework, with more precision. Most of the relationships between motivational variables involved in learning and performance have been studied taking into account the tasks carried out by the student within the walls of the school. However, there is a certain lack of knowledge of the relationships that occur between these variables in the process of completing homework; Homework, by definition, are prescribed by the teacher to be carried out after school. For this reason, the main goal of the present paper is to analyze the predictive capacity of each variable related to motivation and homework involvement on the amount of them which are done by students. Participants were 899 students from Spanish compulsory secondary education. Results from the regression analysis indicate that the more time students spend on homework, the more intrinsically motivated they are, the more effective time management is, the better motivation management is and the less anxiety they show, then the more amount of homework they complete.

*Keywords:* Homework, homework involvement, homework motivation, amount of homework completed, Spanish compulsory secondary education.

*¿Por qué los alumnos de Educación Secundaria realizan más deberes?* Los deberes escolares son una de las actividades educativas que más controversias ha generado en los últimos tiempos. Aunque existen evidencias científicas de sus potencialidades sobre el rendimiento académico y aprendizaje de los estudiantes, todavía es necesario estudiar algunas variables, que forman parte del proceso de realización de los deberes escolares, con más precisión. Sin embargo, existe un cierto desconocimiento de las relaciones que se producen entre estas variables en el proceso de realización de los deberes escolares. Es por ello, que el presente trabajo tiene como objetivo fundamental comprobar la capacidad predictiva que tiene cada una de las variables vinculadas con la motivación e implicación en las tareas para casa sobre la cantidad de las mismas realizadas por los alumnos. La muestra está integrada por 899 estudiantes de Educación Secundaria Obligatoria y los resultados del análisis de regresión indican que cuanto más tiempo pasan los alumnos en la realización de las tareas escolares, cuanto más motivados intrínsecamente están hacia ellas, cuanto más aprovechan el tiempo que dedican a esas tareas, cuanto mejor gestionan su motivación y cuanto menos ansiedad muestran ante ellas, más cantidad de las mismas realizan.

*Palabra clave:* Tareas para casa, implicación en las tareas para casa, motivación hacia las tareas para casa, cantidad de tareas realizadas, Educación Secundaria.

Homework has been a topic of public interest throughout the twentieth century. Although the debate about them can not be closed at present, during the last three decades there seems to be some consensus about their favorable effects on student learning and performance. The research suggests that this influence can be considered important especially when we talk about secondary school students, but, regardless of the educational stage, there is evidence that the benefits of the task may not be seen immediately, with areas not routinely evaluated in the investigation.

Homework is one of the educational activities that has generated the most controversy in recent times in different educational sectors. Despite the existence of numerous researches on homework and its potential benefits for learning and school performance, there is still no clear answer today about the degree of utility and its effects on student learning and performance. In the complex process of carrying out homework, there are a multitude of contextual and personal variables. Among the personal variables are the degree of involvement of the students in the accomplishment of homework (number of tasks, time spent and time taken) and motivation towards them, among others.

According to several studies, of all the variables related to the involvement in homework, the number of tasks that students do (of those prescribed by the teacher) seems to be one of the variables that most predicts academic performance (Regueiro et al., 2017; Valle et al., 2015). Trautwein, Köller, Schmitz, and Baumert (2002) also indicate that the assignment and realization of homework is positively associated with student performance, hence it is necessary to know exactly what the reasons are for students to do, or not, homework; but without erroneously considering that the more tasks students are required to do, the better their academic performance will be. It is not a question, therefore, of looking for the way in which the students do more amount of homework as such, but to know the elements of the process of accomplishing those tasks. Thus, knowing what are the variables that can influence whether or not students do their homework, we will confirm to what extent the quality of the homework assignment process is important in the final outcome.

Therefore, the focus of interest in the present study is in line with research focused on variables that influence student engagement with dedication to learning activities (Kolic-Vehovec, Roncevic, & Bajanski, 2008; Rosário et al., 2012; Valle et al., 2009), as well as the perception of utility and interest. According to the Expectation-Value model (Eccles & Wigfield, 2002), the importance and usefulness given by the student to homework directly influences the choice of tasks, persistence and performance, and, therefore, it also affects the amount of tasks they do.

The main objective of this study is to verify the relationship between these variables by studying the predictive capacity of each of the variables related to motivation and involvement in homework assignments on the number of homework assignments.

## METHOD

### *Participants*

The sample is made up of 899 students from Compulsory Secondary Education (ESO) belonging to 14 schools in three provinces in northern Spain. 51.7% were boys ( $n=465$ ) and 48.3% were girls ( $n=434$ ).

### *Instruments*

To measure the variables associated with motivation and involvement in homework, we used the Survey on Homework (SH), a self-reporting survey that uses 61 items to evaluate different dimensions related to the effectiveness of homework in students' learning and academic achievement (e.g., Núñez et al., 2015; Pan et al., 2013; Rosário et al., 2009).

In order to get information on the motivational and affective variables related to homework, we chose the information contained in the SH on: 1) *intrinsic motivation towards homework*; b) *perception of usefulness of homework*; c) *management of motivation* and d) *anxiety regarding homework*. All of them with responses on a five-point Likert scale ranging from "1–totally false" to "5–totally true".

To ascertain the students' degree of involvement in homework, we also gathered information via the SH on the following variables: a) *amount of homework students usually do*; b) *amount of time spent on homework*; and c) *use of the time spent on homework (time management)*. The estimate of the amount of homework students do was gotten via the responses to an item on the amount of homework they usually do, using a five-point Likert scale (from 1=none to 5=all). Regarding the amount of time spent on homework ( $\alpha=.70$ ), the students responded to two items with the following statements: a) *How much time do you usually spend on homework every day from Monday to Friday?* and b) *How much time do you usually spend on homework on the weekends?*. The response options in both items were the following: 1=less than 30 minutes, 2=from 30 minutes to one hour, 3=from one hour to an hour and a half, 4=from an hour and a half to two hours, 5=more than two hours.

Finally, the usefulness of the time they spent on homework was evaluated via the responses to three items: a) *when it's time to do homework, I find an excuse to leave it for later*; b) *when I'm doing my homework, I get distracted by anything around me*; and c) *when I begin to do homework, I concentrate and only think about finishing it*. The responses to these items were given on the following scale: 1=always, 2=almost always, 3=sometimes, 4=rarely and 5=never.

The evaluation of *academic achievement* was obtained by the final qualifications obtained by the participating students in Spanish language, English

Language, and Mathematics. And the average performance was calculated from the average of their grades in the mentioned subjects.

### *Procedure*

Data were collected during school hours by researchers, with the consent of the school board and students' teachers. Written consent was requested from the participating students' parents.

### *Data analysis*

Taking into account the main of the study, a regression analysis (successive step method) was carried out in order to determine the predictive value of some affective-motivational variables and motivational management and the time spent on homework.

## RESULTS

As can be seen in table 1, the amount of homework done by students is significantly and positively related to the time spent doing homework ( $r=.42$ ,  $p<.001$ ), with intrinsic motivation towards homework ( $r=.40$ ,  $p<.001$ ), with time management ( $r=.33$ ,  $p<.001$ ), with perception of usefulness of homework ( $r=.31$ ,  $p<.001$ ) and with management of motivation ( $r=.30$ ,  $p<.001$ ). However, amount of homework students usually do has a significant but negative relationship with anxiety regarding homework.

*Table 1. Mean, standard deviations and correlation matrix*

	1	2	3	4	5	6	7
1. AMOU.	–						
2. INT. M.	.40**	–					
3. UTILITY	.31**	.65**	–				
4. MOT.M.	.30**	.47**	.31**	–			
5. ANX.	-.10**	-.05	-.09	.03	–		
6. TIME	.42**	.24**	.24**	.15**	.05	–	
7. TIME.M.	.33**	.34**	.24**	.26**	-.13**	.15**	–
<i>M</i>	4.09	3.38	3.32	2.72	1.60	3.19	3.17
<i>SD</i>	0.99	0.79	1.03	0.98	0.77	1.17	1.07

Note. 1. AMOU (*amount of homework students usually do*), 2. INT.M. (*intrinsic motivation towards homework*), 3. UTILITY. (*perception of usefulness of homework*), 4. MOT.M. (*motivation management*), 5. ANX. (*anxiety regarding homework*), 6. TIME (*amount of time spent on homework*), 7. TIME.M. (*time management*)\* $p<.05$ ; \*\* $p<.01$ .

The results of the regression analysis (see table 2) show that the amount of homework students usually do is "directly" explained by five variables of the total variables included in the study: model 5 [*amount of time spent on homework* ( $\beta=.337$ ;  $t=11.61$ ;  $p<.001$ ;  $R^2=.184$ ); *intrinsic motivation towards homework* ( $\beta=.217$ ;  $t=6.49$ ;  $p<.001$ ;  $R^2=.097$ ); *time management* ( $\beta=.163$ ;  $t=5.38$ ;  $p<.001$ ;  $R^2=.030$ ); *motivation management* ( $\beta=.104$ ;  $t=3.23$ ;  $p<.01$ ;  $R^2=.007$ ); *anxiety regarding homework* ( $\beta=-.074$ ;

$t=-2.61$ ;  $p<.01$ ;  $R^2=.005$ ). The amount of explained variance of the amount of homework students usually do by the five variables is 32.4% (adjusted  $R^2=.324$ ).

Table 2. Results of the regression analysis by taking the amount of homework students usually do as a criterion variable and the affective-motivational and management variables as predictor variables

Model	R	Adjusted R <sup>2</sup>	F(gl)	p<	Δ R <sup>2</sup>	Change in F (gl)	p<
Model 1a	.429	.184	196.801(1)	.001	.184	196.801(1)	.001
Model 2b	.530	.281	170.262(2)	.001	.097	117.433(1)	.001
Model 3c	.558	.311	130.930(3)	.001	.030	37.857(1)	.001
Model 4d	.564	.318	101.431(4)	.001	.007	9.222(1)	.01
Model 5e	.569	.324	83.050(5)	.001	.005	6.812(1)	.01

Note. 1a. Amount of time spent on homework. 2b. Amount of time spent on homework; Intrinsic motivation towards homework. 3c. Amount of time spent on homework; Intrinsic motivation towards homework; Time management. 4d. Amount of time spent on homework; Intrinsic motivation towards homework; Time management; Motivation management. 5e. Amount of time spent on homework; Intrinsic motivation towards homework; Time management; Motivation management; Anxiety regarding homework.

Taking into account these results, it can be affirmed that the amount of homework done by students increases when: (i) they spend more time doing homework ( $\beta=.337$ ); (ii) they are more intrinsically motivated for homework ( $\beta=.217$ ); (iii) when they better manage the time they dedicate to homework ( $\beta=.163$ ); (iv) when they better manage their motivation for homework ( $\beta=.104$ ); and (v) when they are less anxious ( $\beta=-.074$ ).

## DISCUSSION

This study indicates that the variable that most influences the amount of homework is the time. Therefore, according to the results of this work, devoting more time to the accomplishment of homework leads to more tasks, and consequently to a better academic performance. This result undoubtedly supports the opinion of those who advocate homework as a useful and fundamental tool for learning (Epstein & Van Voorhis, 2001; Trautwein, Lüdtke, Kastens, & Köller, 2006; Cooper, Robinson, & Patall, 2006).

Another important aspect of this research is that intrinsic motivation is relevant to explain the amount of homework that students do. This finding follows the line of research that suggests that the type of motivation that students adopt for a task is related to the quality of their commitments (Ryan & Deci, 2000).

Also, the results of the present study are in line with the literature indicating that the time management is positively associated with the completion of the task (Xu, 2010). The completion of homework tasks can be a good way for the student to learn to manage their time, build or strengthen the sense of responsibility or also discover the sense of appreciation of effort and perseverance in achieving goals (Epstein & Van Voorhis, 2001).

Finally, motivation management also has a positive impact on the number of tasks performed. In the same way, but in the negative direction, anxiety also incurs the amount of homework done. The negative sign in the explanation of the amount of homework done is not surprising because mismatches in homework assignments and student preparation may lead to frustration and negative attitudes toward school, such as stress or anxiety, and vice versa.

Therefore, the results indicate that the longer students spend in school tasks, the more intrinsically motivated they are to them, the more they take advantage of the time they devote to these tasks, the better they manage their motivation and the less anxiety they show before them, the more they perform.

Thus, it is important to note that, although many studies provide evidence of the benefits of homework, this effectiveness only occurs when the homework application is correct (Epstein & Van Voorhis, 2001; Grootenboer, 2009).

Therefore, as educational implications, it might be interesting to help students learn to improve or maintain their motivation in homework and also teach them to have greater autonomy. Like any other aspect of education, students have to understand why they are learning something and how it will benefit them in the real world. Otherwise, it is almost impossible for them to be motivated. The purpose of homework must be clearly defined and defined as well as taking into account students' perceptions and understandings of the task. Thus, if students understand how the task can affect their performance, their attitude toward it and time management skills will improve. On the other hand, the choice of activities can also be another option to increase motivation and performance results (Deci & Ryan, 1985).

Despite these strengths, a limitation of our study lies in the use of only self-report questionnaires, since questionnaires may be subject to response biases and do not accurately reflect actual behaviours.

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