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Intrinsic motivation and perceived utility as predictors of student homework engagement[☆]

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ABSTRACT

The value students place on tasks, including utility, underlies their choices and the extent of their engagement, effort and persistence in learning activities, and ultimately explains academic achievement. This study attempts to verify how far the value students place on homework and their perceptions of its utility can be significant predictors of their behavioral engagement. With a sample of 730 secondary school students, via path analysis, the results generally confirm the hypothesis underlying the model. Intrinsic motivation and the perceived utility of homework were significantly and positively associated with student engagement with them, and this engagement was also positively related to academic achievement. The amount of variance in academic achievement that is explained by the five homework-related variables was only 8.6%. The main contribution of the study is that, when students are interested in working on homework and believe that it is useful for their learning, they are more involved in the homework. The purpose of learning and the perception of utility become explanatory factors for the level of students' engagement with homework.

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Motivación intrínseca y utilidad percibida como predictores del compromiso del estudiante con los deberes escolares

RESUMEN

El valor que se asigna a las tareas, incluido el valor de utilidad, está detrás de las elecciones de los estudiantes y de su grado de compromiso, esfuerzo y persistencia con las actividades de aprendizaje y, acaba explicando, finalmente, el rendimiento académico. Con el presente estudio se trata de comprobar en qué medida el valor y la percepción de utilidad atribuidos a los deberes podría ser un predictor relevante del compromiso ejecutivo del estudiante con sus deberes. Con una muestra de 730 estudiantes de Educación Secundaria y a través del análisis de senderos (path model) los resultados obtenidos, en términos generales, confirman la hipótesis general en base a la que se construyó el modelo. Así, la motivación intrínseca y la utilidad percibida de los deberes se encuentran significativa y positivamente asociados con el compromiso del estudiante con los mismos y este compromiso se relaciona también positivamente con el rendimiento académico. Se constata que la cantidad de varianza que se explica del rendimiento académico por parte de las cinco variables relacionadas con los deberes es sólo de un 8.6%. La aportación principal del estudio es que cuando el estudiante se encuentra interesado en trabajar sobre los deberes y confía en que éstos sean útiles a tal fin su implicación con los deberes será más alta. El propósito de aprender y la percepción de utilidad se convierten en factores explicativos de la calidad del compromiso del estudiante con los deberes.

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Introduction

Homework, defined as academic tasks assigned by teachers to be done by the student outside of classroom hours (Cooper, Steenbergen-Hu, & Dent, 2012), is a common general educational activity for many students (Núñez, Suárez, Cerezo et al., 2015; Núñez, Suárez, Rosário et al., 2015; Regueiro et al., 2018), and has been noted as a teaching strategy aimed at improving students' learning and educational achievement (Cooper, Robinson, & Patall, 2006). The aim of this study is to examine the explanatory potential of intrinsic motivation and the perception of utility in homework engagement, in terms of time, use of time, and the quantity of homework set that students do.

Behavioral engagement with homework and academic achievement

The findings from empirical research into the relationship between homework and achievement have not always been consistent. Many studies have found homework to be significantly and positively related to academic achievement (Su, Huang, Yang, Ding, & Hsieh, 2015) while others have shown that homework does not always affect achievement (Murillo & Martínez-Garrido, 2014).

Students' behavioral homework engagement has usually been specified through three variables: the time students spend doing homework, how they use this time, and the amount of homework that they do out of the homework their teachers set (Valle et al., 2016). The relationship between time spent on homework and academic achievement has traditionally been the most commonly researched variable (Cooper et al., 2006; Fan, Xu, Cai, He, & Fan, 2017). Although at first glance it would seem that spending more time on homework would bring with it better academic results, hierarchical linear models seem to suggest that academic achievement depends more on the amount of homework students do (Trautwein and Koller, 2003). In this area, multilevel research suggests that the time students spend doing homework does not significantly explain academic results (Dettmers, Lüdtke, Trautwein, Kunter, & Baumert, 2010) and that when links are occasionally found between time spent on homework and academic achievement the effect could be negative (Trautwein, 2007).

On this point, it is important to understand that the amount of homework done out of what teachers set has become a more explanatory measure of student behavioral engagement than time spent (Dettmers et al., 2010; Fernández-Alonso, Suárez-Álvarez, & Muñiz, 2015). Much research seems to suggest that the amount of homework does positively, significantly predict academic achievement: the more homework that is done from what is set, the better the academic achievement (e.g., Núñez et al., 2015; Trautwein, Schnyder, Niggli, Neumann, & Lüdtke, 2009). These findings can clarify that the potential of time spent may be conditioned by the extent to which it contributes to doing set homework. So, time spent on homework may positively contribute to the amount of homework that a student does while it could negatively explain their academic achievement (Núñez et al., 2015).

In short, the relationship between the three classical measures of behavioral engagement and academic achievement should be understood as the amount of time spent on homework together with how this time is used only having a positive impact on academic achievement to the extent to which they contribute to completing the homework that is set (Núñez et al., 2015).

Motivation and behavioral engagement with homework

Various studies have reported the predictive validity of motivation when it comes to explaining students' behavioral engagement with homework and academic achievement (Suárez et al., 2019).

In terms of the motivation and time spent on homework it seems clear that highly motivated students tend to waste less time while doing homework and manage their time better than less motivated students (Xu, Yuan, Xu, & Xu, 2014). Motivation could be a significant factor that may affect academic achievement by affecting how students make use of and manage their time doing homework.

Two motivational aspects that are considered in doing homework which stand out are intrinsic motivation and the perception of utility. Research suggests that, for example, secondary school students who recognize the value or sense of homework manage their homework better and exhibit more intrinsic motivation for doing it (Xu & Yuan, 2003). Perceived utility, which is the perception of how much doing homework will contribute to current or future goals, has a positive influence on the amount and quality of time students spend on homework (Trautwein & Koller, 2003). Even when students do not exhibit intrinsic motivation towards their homework, understanding it to be a necessary requirement for better academic achievement can be associated with better engagement with it (Trautwein, Lüdtke, Schnyder, & Niggli, 2006). The value ascribed to homework in terms of enjoyment and satisfaction, perception of utility and positive attitude will significantly explain students' dedication and engagement with it (Suárez et al., 2019).

This current study aims to provide information about the hypothesized significance of motivation and the perceived utility of homework on students' academic engagement. In order to do that, a theoretical model was formulated (see Figure 1) based on prior research, specifically into changes in homework and academic motivation. We assume that, firstly intrinsic motivation (Trautwein et al., 2006; Xu et al., 2014) and the perception of utility (Trautwein & Koller, 2003; Trautwein et al., 2006) will positively affect students' homework engagement in terms of amount of homework done, time spent and how this time is made use of.

Considering the results from various studies (e.g., Dettmers et al., 2010; Núñez et al., 2015; Núñez, Tuero, Vallejo, Rosário, & Valle, 2014; Trautwein et al., 2009), we formulated a model establishing the following specific hypotheses: (1) intrinsic motivation and perceived utility of homework are significantly and positively associated with the three indicator variables of student homework engagement, such that students who have higher intrinsic motivation and greater perceived utility will be more involved in doing their homework (spend more time, make better use of time, and do more of the homework set by their teachers); (2) time spent on doing homework and how that time is used are positively and significantly associated with the amount of homework that students do; and (3) the amount of homework done and academic achievement are significantly and positively related (the more homework that is done out of what is set, the better the academic achievement). In short, in our proposed model, the three indicator variables of student homework engagement work as mediators in some way between motivation and academic achievement.

Method

Participants

A total of 730 students participated in this study (aged between 12 and 16 years old; $M = 13.5$, $SD = 1.15$). They were from 11 schools, 10 of which were publicly run, and one of which was an independent school. Most of the schools were in urban locations, with two being in either rural or semi-urban areas. The socioeconomic profiles of the pupils at the schools and their families was average. Most of the students came from families with annual incomes between 25,000 and 30,000 euros, which puts them around the median annual income (26,730) for Spanish households (INE, 2016). A little

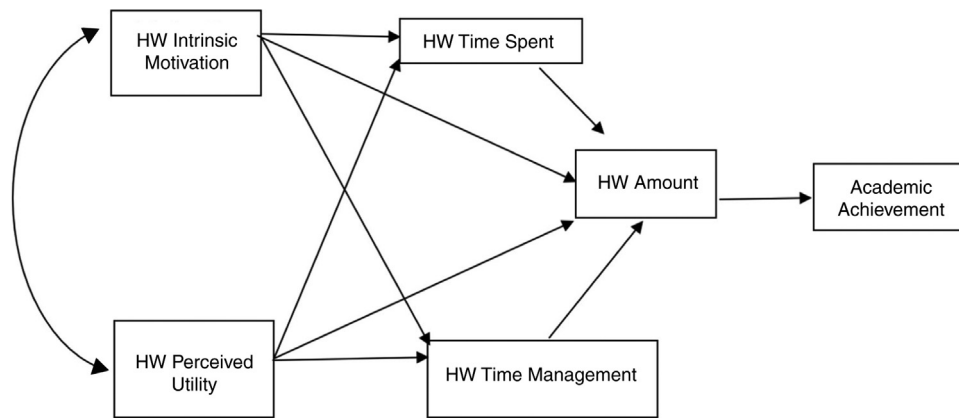


Figure 1. Hypothesized model.

less than half (43.6%) were boys, 56.4% were girls. They were studying compulsory secondary education (ESO in Spain), with 26.6% ($n = 194$) in the first year, 20.8% ($n = 152$) in the second year, 24.9% ($n = 182$) in the third year, and 27.7% ($n = 202$) in the fourth year.

Participants spent an average of 75 min per day (Monday to Friday) doing homework, which is in line with international reports (e.g. OECD, 2014) indicating that 15-year-old Spanish students spend a mean of 6.5 h a week on homework, compared to a mean of 4.9 h for OECD countries.

Instruments

We used the Homework Questionnaire (EDE) (Núñez et al., 2015; Pan et al., 2013) to evaluate motivational variables (*intrinsic motivation, perceived utility*) and variables related to behavioral engagement (*amount of set homework completed, time spent on homework, management of homework time*).

- *Intrinsic motivation* was measured using eight items related to reasons linked to enjoyment, satisfaction and learning that encourages student involvement in homework tasks (e.g., I enjoy doing homework that allows me to learn more and more). The response is on a scale from 1 = completely false to 5 = completely true. The scale demonstrates appropriate psychometric characteristics ($\alpha = .85$; $\omega = .85$; composite reliability = .85; average variance extracted = .51). The results suggest a unidimensional structure, $\chi^2(14) = 22.932, p > .05$, TLI = .988, CFI = .995, RMSEA = .030, 90% CI (.000, .051), $p > .05$). As intrinsic motivation was the only variable in the model with more than one item, and because the scale is unidimensional, we constructed a single observed measure.
- *Perceived utility* of homework was measured using an item asking students to respond to a statement about how useful they thought the homework their teachers set them was. The response scale was from 1 = completely false to 5 = completely true.
- *Behavioral engagement* was measured using three homework variables. The *amount of homework done* was measured using the item “How much of the homework set by your teachers do you usually do?” with the responses: 1 = none, 2 = a little of it, 3 = half of it, 4 = most of it, 5 = all of it. *Time spent on homework* was measured using “How much time do you usually spend on doing your homework?” with responses of: 1 = less than 30 min, 2 = between 30 min and one hour, 3 = between an hour and an hour-and-a-half, 4 = between an hour-and-a-half and two hours, and 5 = more than two hours”. Finally, *use of time* doing homework was measured by asking students to indicate the level of how well they used their time doing homework. The response was on

a five-point scale from 1 = I waste it completely to 5 = I take full advantage of it.

- *Academic achievement* was evaluated via the mean final marks of the participating students (1 = poor, 2 = satisfactory, 3 = good, 4 = very good, 5 = outstanding). The subjects used to calculate the mean were social sciences, Spanish and one foreign language (English), as they are the most important in the curriculum.

Procedure

The data were collected during school hours by personnel external to the school. The aims of the research and informed consent forms were distributed to parents and teachers. The dates were selected by school administrators in cooperation with the researchers to ensure that there were no significant school events or exams immediately before or after the data collection. In each classroom the objectives of the study were explained and students were assured of the anonymous, voluntary nature of the study and the confidentiality of their data. The procedure followed in this study complied with the ethical standards of the Ethics Committee of the University of A Coruña as well as those set out in the Helsinki Declaration.

Data analysis

Data analysis was performed in several stages. Firstly, we calculated and analyzed the correlation matrix and usual descriptive statistics for each of the variables in the study (mean, standard deviation, asymmetry, kurtosis). Eleven students were eliminated for having large amounts of missing data and in some cases, atypical values. We did not find a significant number of missing values in any of the variables. Missing values were dealt with using the multiple imputation procedure. We used the AMOS 22 (Arbuckle, 2013) statistics package for studying the path model. Given that the variables in the model exhibited a normal univariate distribution (see Table 1), and also at the multivariate level (kurtosis = 1.183, $t = 1.632, p > .05$), the fit of the data to the hypothesized model was done via robust maximum likelihood (RML). The theoretical model was analyzed at the level of the individual (student), giving particular importance to the personal variables for homework done at home outside school hours. To evaluate the fit of the model, in addition to chi-squared (χ^2), we used (a) two absolute indexes, the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI); (b) relative indices, the Tucker-Lewis index (TLI) and the comparative fit index (CFI); and (c) a measure of the parsimony of fit, the root mean square error of approximation (RMSEA), and the 90% confidence intervals (Hu & Bentler, 1999). The model has a good fit when: GFI, AGFI and TLI > .90, CFI > .95 and RMSEA \leq .05.

Table 1
Pearson correlation matrix, means, standard deviations, asymmetry and kurtosis for the variables in the model

	1	2	3	4	5	6
1. Academic achievement	–					
2. Amount of homework done	.295**	–				
3. Time spent doing homework	.137**	.397**	–			
4. Use of homework time	.136**	.396**	.193**	–		
5. Intrinsic homework motivation	.172**	.448**	.276**	.378**	–	
6. Perceived utility of homework	.099*	.389**	.265**	.331**	.608**	–
M	2.084	3.971	3.032	3.232	3.519	3.493
SD	0.784	1.119	1.151	1.066	1.119	1.072
Asymmetry	–0.148	–0.922	0.014	–0.247	–0.525	–0.518
Kurtosis	–1.358	–0.229	–0.821	–0.495	0.012	–0.282

** $p < .01$; * $p < .05$.

The magnitudes of the associations between the variables in the model were evaluated using the criteria in Cohen's classic work ($d < 0.20$ = non-significant effect; $d \geq 0.20$ and $d < 0.50$ = small effect; $d \geq 0.50$ and $d < 0.80$ = moderate effect; $d \geq 0.80$ = large effect size) as well as using the coefficient of determination (R^2). Calculations of effect size were performed using the software created by [Lenhard and Lenhard \(2016\)](#), assuming that the distribution of the Z statistic was similar to the distribution of the Student t statistic.

Results

Preliminary analysis

Table 1 shows the Pearson correlation matrix, and the descriptive statistics for the six variables included in the homework model. The correlation analysis indicates positive correlations between *achievement* and *amount of homework done* ($r = .29$, $p < .01$), *time spent* ($r = .137$, $p < .01$) and *use of time* ($r = .136$, $p < .01$). Significant positive correlations were also noted between this set of behavioral variables, *intrinsic motivation* and *perceived utility* with values between $r = .448$, $p < .01$ and $r = .265$, $p < .01$. The values for asymmetry and kurtosis suggest the responses follow a sufficiently normal distribution (see **Table 1**).

The results of the Student t test demonstrate significant differences in all of the variables studied between boys and girls, except for *use of time* (see **Table 2**).

Girls reported higher *intrinsic motivation* for homework and greater *perceived utility* than the boys, $t_{(672)} = -4.520$, $p < .001$, $d = 0.35$ and $t_{(673)} = -4.406$, $p < .001$, $d = 0.34$, respectively, and they also seemed to do a greater *amount of homework* and spend more time on homework, $t_{(675)} = -4.166$, $p < .001$, $d = 0.32$ and $t_{(675)} = -4.265$, $p < .001$, $d = 0.33$, respectively. Girls also had higher marks in school than their male classmates, $t_{(674)} = -5.214$, $p < .001$, $d = 0.40$.

The model was evaluated by considering the overall fit of the model in order to assess the extent to which it correctly reproduced the matrix of empirical data. Following that, and once the model was adjusted, the variables constituting it were analyzed.

Model fit

The overall fit of the proposed model was adequate. There did not seem to be significant differences between the proposed model and the matrix of empirical data, $\chi^2_{(5)} = 9.091$, $\chi^2/df = 1.81$, $p = .105$, leading us to accept the model. As might be expected, the remaining indexes of fit pointed in the same direction (GFI = .996, AGFI = .983, TLI = .986, CFI = .995, RMSEA = .034, 90% CI [.000, .023], $p > .05$). This leads us to understand that it is a parsimonious model, with a good fit to the empirical data, with a high probability of being replicated in other independent samples [ECVI (default model) = .073; ECVI (saturated model) = .074; ECVI (Independence model) = 1.277].

Analysis of relationships

Table 3 and **Figure 2** show the correlations between the independent variables, standardized regression coefficients, and their statistical significance.

The fit of the model in this study supports the underlying hypotheses in so far as, while effect sizes are small, both *intrinsic motivation* and *perceived utility* affect the behavioral engagement measured as *time spent*, *use of time*, and *amount of homework done* (see **Table 3** and **Figure 2**). *Intrinsic motivation* is the most important variable when it comes to explain both the quality of *use of time* spent on homework ($d = 0.50$) and the *amount of homework done* ($d = 0.43$); and it has a smaller effect on *time spent* ($d = 0.31$). In addition to its direct effects, we see indirect effects of *intrinsic motivation* on *amount of homework* (.16) and on *academic achievement* (.09). *Perceived utility* could also contribute positively to *time spent* ($d = 0.26$) and *use of time* ($d = 0.28$), as well as residually to *amount of homework done*, directly ($d = 0.21$) and indirectly (.08).

The *amount of homework done* by the students, explained by the *time spent* ($d = 0.65$) and the *use of time* ($d = 0.52$) has a direct effect on *academic achievement* (see **Figure 2**). Finally, the *amount of homework done* has a direct, positive effect on the marks students in secondary education achieve with a moderate effect size according to [Cohen \(1988\)](#) ($d = 0.65$). Taken as a whole, the proposed model can explain only 8.6% of the variance in academic achievement. Nonetheless, the set of variables included together account for 33% of the variance in the variable *amount of homework done*, and also explains 15% of the variance in use of time.

Discussion

With this study, we have attempted to assess the extent to which the perceived value and utility students place on homework can be significant predictors of student executive engagement with homework. The results seem to confirm that intrinsic motivation ([Suárez et al., 2019](#); [Trautwein et al., 2006](#); [Xu et al., 2014](#); [Xu, Du, & Fan, 2017](#)) and the perception of utility ([Cooper et al., 2006](#); [Fan et al., 2017](#); [Trautwein & Koller, 2003](#); [Trautwein et al., 2006](#)) affect student behavioral engagement, and that this should be understood as the impact of motivational and behavioral factors on academic achievement.

If we consider the first of our hypotheses, student interest and intrinsic motivation contribute to achievement, as they generally increase behavioral engagement, dedication, management of the student's own learning process and the attentional resources put into play ([Trautwein et al., 2015](#)). If involvement due to interest and with the goal of learning and improving has a significant, positive impact on the quality of student engagement with homework, then that homework should be designed to allow the development

Table 2
Differences in means between boys and girls

	Boys N = 295		Girls N = 382		t	p	d
	M	SD	M	SD			
1. Academic achievement	2.64	1.17	3.14	1.29	-5.214	.000	0.40
2. Amount of homework done	3.82	1.15	4.17	1.01	-4.166	.000	0.32
3. Time spent doing homework	2.84	1.12	3.21	1.14	-4.264	.000	0.33
4. Use of homework time	3.24	1.08	3.28	1.05	-.510	.610	0.04
5. Intrinsic homework motivation	3.38	.87	3.66	.70	-4.520	.000	0.35
6. Perceived utility of homework	3.31	1.14	3.67	.99	-4.406	.000	0.34

Table 3
Evaluation of the hypothesized model

	SRW	SE	CR	p	d
<i>Structural Model</i>					
Intrinsic HW motivation → Time spent on HW	.182	.065	4.097	<.000	0.31
Intrinsic HW motivation → Use of HW time	.281	.058	6.561	<.000	0.50
Intrinsic HW motivation → Amount of HW done	.226	.056	5.681	<.000	0.43
Perceived utility of HW → Homework time	.154	.048	3.470	<.000	0.26
Perceived utility of HW → Use of HW time	.160	.043	3.743	<.000	0.28
Perceived utility of HW → Amount of HW done	.109	.040	2.791	<.01	0.21
Time spent on HW → Amount of HW done	.264	.031	8.302	<.000	0.65
Use of HW time → Amount of HW done	.225	.035	6.808	<.000	0.52
Amount of HW done → Academic achievement	.294	.025	8.300	<.000	0.65
Intrinsic HW motivation ↔ Perceived utility of HW	.515	.037	14.033	<.000	1.22

SRW = Standardized regression coefficients; SE = Standard Error; CR = Critical Ratio; p = Probability; d = Effect Size.

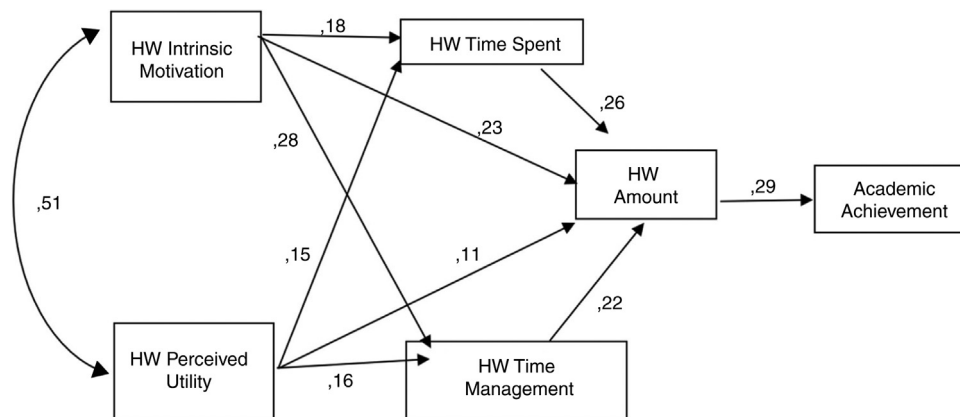


Figure 2. Correlations and standardized regression coefficients for the final model. All of the coefficients were statistically significant at $p < .001$, except for perceived utility related to amount of homework done ($p < .01$).

of skills and abilities, it should be an achievable challenge, and it should, as far as possible, be within the range of students' interests and needs.

Similarly, the results seem to confirm our second main hypothesis, students who perceive more utility from doing homework spend more time doing it, do more of it, and spend their time better, performing better academically than those who have a worse perception of the utility of homework (Trautwein & Koller, 2003; Trautwein et al., 2006). Preventing the worrying decline in perceived utility of homework during students' schooling, and particularly in secondary education (Regueiro, Suárez, Valle, Núñez, & Rosário, 2015), must become a challenge for teachers to take up. If we want to achieve quality commitment from our students, then homework should be set with clear, specific outcomes in terms of progression in the syllabus, marks –or other ways its impact may be evaluated–, as well as being clearly applicable to the students' experience and future professional contexts. The educational implications of this seem unarguable, and add another voice to current thinking that places a lower value on homework.

Another of our objectives with this study was to examine the impact of student behavioral engagement in homework on aca-

ademic achievement. We used three variables: time students spent on homework, the use of time doing homework, and the amount of homework done compared to what was set by teachers. The significance of the results seems to support theoretical development that suggest that school engagement, and more specifically behavioral engagement in terms of dedication, participation and persistence (Christenson et al., 2012) is a good predictor of different educational results (Ladd & Dinella, 2009) and specifically academic achievement (Ladd & Dinella, 2009). Nonetheless, we should not lose sight of the fact that the variance in achievement explained by the variables related to homework that we used here was small (8.6%), which brings us back to the need for homework to be set linked to the requirements of student achievement. One might hope that homework would contribute to the consolidation and reinforcement of core curriculum learning that would be more clearly reflected in academic success and that teacher feedback about homework would be modified with the aim of having an impact on progress in academic achievement.

In addition to confirming the relationship between the amount of homework done and academic achievement, already suggested by previous research in secondary school samples (e.g., Núñez et al.,

2015; Trautwein et al., 2009), the results suggest that the time spent and how that time is spent have a direct impact on the amount of homework that students finally do (Xu, 2010). The structure of the relationships between measures of behavioral engagement and academic achievement we report here could help in the interpretation of some rather variable, even contradictory results about the time-achievement relationship (see for example, Trautwein, 2007) as well as in the differences in explanatory potential of the amount of homework done compared to what was set by teachers and the time spent doing it (Dettmers et al., 2010; Fernández-Alonso et al., 2015).

In effect, the amount of homework done could be a behavioral measure with a clearer impact on academic achievement (Cooper et al., 2006) than time spent (Dettmers et al., 2010; Fernández-Alonso et al., 2015). Everything seems to indicate that time spent on homework, just like how that time is used, has a positive impact on students' academic achievement, fundamentally to the extent that they contribute to the amount of homework done. As previous research has suggested (e.g., Núñez et al., 2015; Trautwein et al., 2009), the amount of homework done positively and significantly predicts academic achievement, but one should clarify between the time spent which really contributes to completing academic tasks and the absolute time spent on homework. Our results also reinforce the conclusions made by Núñez et al. (2015) and Xu (2010) emphasizing the importance of managing and making use of time with respect to the amount of homework completed when it comes to explaining academic achievement. In short, when we consider the relationship between homework and academic achievement, time spent, together with how this time is used are potentially explanatory variables as they are linked to doing a greater amount of homework.

In conclusion, while it is true that the relationship between the time spent on homework and academic achievement has traditionally been the most commonly studied variable (Cooper et al., 2006; Fan et al., 2017), in light of our results, it is possible that the amount rather than the time is the ultimate catalyst for improving academic achievement. The principal finding from our study is that when students are interested in working on homework in order to learn, and also when they trust that it will be useful for their learning, this results in greater engagement, and fundamentally better quality involvement. Homework should not be set solely as an obligation, as the only thing that would earn is a loss of passion (interest and engagement).

Limitations and future research

Our study was transversal, which means that one cannot make causal inferences from it. Although we used a powerful data analysis strategy (path analysis), it is not possible to make causal interpretations. In addition, the results of this study would have been more powerful if, rather than path analysis, the relationship between motivation, behavioral engagement and achievement had been analyzed using a structural equation model. Although there were observed measures from which a latent variable (intrinsic motivation) could have been constructed, the other variables in the model were estimated by a single measure for each variable. For that reason, it was appropriate to reduce intrinsic motivation to a single observed measure and estimate the model without the factorial part. Future research might include the modification of this same model in their objectives, but with latent variables.

In addition, and complementary to the above, it would clearly be interesting to develop experimental designs that would allow assessment of the impact of behavioral engagement on students' learning and achievement (Xu et al., 2017) as well as longitudinal follow-up studies to observe the effects of interest and perceived utility on student behavioral engagement with homework through-

out their schooling. On this point, given that the explanatory power of the variables we considered was relatively low, we cannot deny that we are not dealing with the expectation component of motivation which, as various theoretical frameworks assert, should be a predictor of behavioral engagement, at least in terms of effort and persistence (Trautwein et al., 2006).

Another limitation of this study has to do with sample selection, as this was a convenience sample and does not completely represent the population it comes from. Nonetheless, we trust that the procedure we used was sufficiently sensitive considering the variables examined and that strengthens the reliability of our results. Finally, the data about homework was collected through self-reports. This should be remembered when interpreting the data and drawing conclusions as self-reported information may be subjective to a greater or lesser extent.

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