

Academic engagement and its impact on undergraduate student performance at the University of La Laguna

El engagement académico y su incidencia en el rendimiento del alumnado de grado de la Universidad de La Laguna

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Abstract

The attitude and involvement with which undergraduate university students approach their training process can have a significant impact on the academic results they obtain. The relationship that can occur between low involvement and the possibility of failing or dropping out of studies has led us to propose this research, where the relationship between engagement and academic performance is deepened. The engagement refers to the feeling of well-being of the students with respect to a challenge related to their training process. Students who are studying at university are exposed to living situations that make them more or less committed to their learning process, which can lead to obtain better or worse academic results. This ex-post-facto quantitative study, which was carried out with a sample of 564 first and second year students from the three degrees of the Faculty of Education of the University of La Laguna (Spain), aimed to analyze the relationship between academic commitment and performance in studies. The results reveal that students with higher scores in the different structural dimensions of academic commitment (vigor, dedication and absorption) have higher grades in the subjects they take. The discussion of the study focuses on the need to plan strategies to promote academic commitment in order to strengthen both the trajectories of adaptation and permanence in the degree and the achievement of better academic results in university students.

Keywords: Academic engagement; University students; Academic performance; Formative trajectories; Involvement in work.

Resumen

La actitud y la implicación con la que los estudiantes universitarios de grado afrontan su proceso formativo puede incidir de manera significativa en los resultados académicos que obtengan. La relación que puede darse entre una baja implicación y la posibilidad de fracasar o abandonar los estudios ha llevado a plantear esta investigación, donde se profundiza en la relación entre el *engagement* y el rendimiento académico. El *engagement* hace referencia a la sensación de bienestar del alumnado respecto a un desafío relacionado con su proceso formativo. El alumnado que cursa estudios universitarios está expuesto a vivir situaciones que les hacen estar más o menos comprometidos con su proceso de aprendizaje, pudiéndoles llevar a obtener mejores o peores resultados académicos. Este estudio de corte cuantitativo ex-post-facto, que se llevó a cabo con una muestra de 564 estudiantes de primer y segundo curso de los tres grados de la Facultad de Educación de la Universidad de La Laguna (España), tiene como objetivo analizar la relación entre el *engagement* académico y el rendimiento en los estudios. Los resultados revelan que el alumnado con mayores puntuaciones en las distintas dimensiones estructurales del *engagement* académico (vigor, dedicación y absorción) presenta mayores calificaciones en las asignaturas que cursa. La discusión del estudio se centra en la necesidad de planificar estrategias promotoras del *engagement* académico para fortalecer tanto las trayectorias de adaptación y permanencia en la titulación como la obtención de mejores resultados académicos en el alumnado universitario.

Palabras clave: *Engagement* académico; Estudiantes universitarios; Rendimiento académico; Trayectorias formativas; Implicación en el trabajo

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Concern at all educational levels due to high failure and dropout rates has led to examination of the factors associated with this multi-causal issue and the proposal of solutions for improvement. (Bethencourt *et al.*, 2008; Esteban, *et al.*, 2016; Freixa *et al.*, 2017; Truta, *et al.*, 2018). Despite all the efforts and initiatives carried out to reduce their impact (Álvarez, 2014; Moreno, *et al.*, 2011; Solaguren & Moreno, 2018), high dropout rates continue to persist year on year. This justifies the need to study, in depth, the variables involved in appropriate adaptation, persistence and academic success.

Engagement is one of the factors closely associated with the achievement of good adaptation and continuation higher education. As stated by some authors (Salanova & Schaufeli, 2009; Schaufeli *et al.*, 2002), the term *engagement* is used to describe the behaviour of being productively involved in tasks. An important line of research has been developed around this construct. This has focused on examination of the relationship of engagement and satisfaction with performed tasks, intrinsic motivation, self-efficacy expectations and institutional involvement, amongst other factors. (Nerstad *et al.*, 2010; Xanthopoulou *et al.*, 2008). Although the study of engagement was first applied to work settings, its relevance has now been transferred to educational contexts (Brigman *et al.*, 2015; Casuso *et al.*, 2013; Gutiérrez *et al.*, 2018). Further, the relationship between academic engagement and academic performance has also begun to be assessed (Christenson *et al.*, 2012; Jang *et al.*, 2010; Marks, 2000).

In general terms, academic engagement is defined as the degree to which students are connected to and actively involved in their study process in order to learn and achieve optimal results (Bresó *et al.*, 2011; Coates & McCormick, 2014; Wang & Fredricks, 2014). Engagement is not associated with or focused on the development of a specific or circumstantial activity but is, instead, considered to be a persistent state. For this reason, engagement is valued as an important predictor of student performance in educational activities (Sandoval *et al.*, 2018; Weiss *et al.*,

2010). It refers to a positive attitude towards involvement in academic tasks which entails directing energy towards actions being performed and positively connecting the individual with the activity. For this reason, the field talks about a state of psychological satisfaction (Carmona-Halty *et al.*, 2017; Martínez & Salanova, 2003) which is comprised of three fundamental factors. The first of these is vigour which describes energy and mental stamina at the time of performing a task, alongside persistence in performing the task in spite of drawbacks. The second, dedication, refers to having a high degree of motivation and involvement in the task and exhibiting attitudes towards active participation during the completion of work. Finally, the third aspect is absorption, which corresponds to being fully concentrated and deeply engrossed in academic work. When this occurs, time passes quickly and there is little difficulty in keeping up with a task. It encompasses feelings such as enthusiasm, pride, desire for work challenges and inspiration, amongst others.

Student engagement not only comprises behavioural elements but, also, affective elements as it reflects an individual's interest in the task they are performing. It also includes cognitive aspects since it implies the use of strategies and the mastery of knowledge and skills to tackle different situations and activities. High levels of academic engagement induce positive states of well-being with regards to academic performance (Bresó & Gracia, 2007). As stated by Salanova *et al.* (2010), this multidimensional construct is related to good academic outcomes and is, therefore, also associated with the quality of university education. This is in line with Manzano (2002) who stated that, for university students, engagement and effort dedicated to learning are important factors for adaptation to their studies and for achieving good learning outcomes. Highly engaged students are more proactive, take the initiative, seek new challenges, able to cope with new demands of the learning process and maintain an effective connection with their academic work. This is in contrast to what is experienced during *burnout*, which is a negative state of mind and loss of interest in an activity (Maslach *et al.*, 2001;

Salanova *et al.*, 2000). A student who does not show engagement is very likely to fail and drop out of the studies they embark upon. (Fonseca & García, 2016).

In terms of academic performance, Forteza (1975) describes this as students' disposition towards academic activities, productivity or the outcome of their academic work. Students who are high achievers are characterised by being more autonomous, having a positive self-perception of their own academic abilities, keeping extensive control over the learning process, having clear goals and being able to manage the stressful situations that arise from their scholarly obligations (Broc, 2011; González *et al.*, 2008; Moreira, *et al.*, 2013). Different indicators have been used to operationalise this factor such as outcome expectations, difficulties during training processes, satisfaction with the learning process and average performance or the grades obtained for different subjects on the curriculum, etc. (García *et al.*, 2000).

In relation to the aforementioned factors, the question guiding this research is as follows: Does academic engagement influence the academic grades of university degree students? It is assumed that students with high levels of engagement will achieve better academic outcomes. Thus, examined students are expected to present a high level of participation in the training process and achieve good learning outcomes. The aim of the present study, therefore, is to analyse the impact of academic engagement on the average scores obtained by participating students during the first semester of the 2019/2020 academic year.

Method

In order to address the proposed objective, a quantitative ex-post-facto study was carried out given that no variable manipulation procedures were performed. The work was therefore approached from an empirical-analytical standpoint.

Objectives and hypothesis

The aim of the present study was to analyse the potential impact of academic engagement on the performance of first- and second-year students undertaking courses at the Faculty of Education of the ULL. Based on this general objective, the null hypothesis (H0) was that undergraduate students at the Faculty of Education of the ULL with low levels of academic engagement and involvement would have poorer study outcomes. The alternative hypothesis (H1) was that undergraduate students at the Faculty of Education of the ULL with a high level of academic engagement would achieve good study outcomes.

Population and sample

The study population pertained to all first- and second-year students of the Faculty of Education at the University of La Laguna (ULL). According to official data from this educational institution, 2216 students with these characteristics were enrolled at the time of data collection. Thus, a final sample of 564 was required to achieve a confidence level of 96.75% and a margin of error of $\pm 3.89\%$. Table 1 presents the sample characteristics.

Table 1. Sample characteristics

Age	Minimum: 18; Maximum: 47; Average: 20.02 Standard deviation: 3.48
Gender	Women: 21.8% (n=123) Men: 78.2% (n=441)
Degree	Early childhood education: 26.4% (n=149) Primary teaching: 43.6% (n=246) General education: 30.0% (n=169)
Course	Year one: 44.7% (n=252) Year two: 55.3% (n=312)

Instruments and techniques

An *ad hoc* questionnaire was designed for data collection. This was constructed from two previously validated scales of academic engagement: *Utrecht Work Engagement Scale for Students* (Carmona-Halty *et al.*, 2017) and *Utrecht Work Engagement Scale* (Schaufeli *et al.*, 2002). According to data presented by Carmona-Halty *et al.* (2017) and Schaufeli *et al.* (2002), these scales produce outcomes which exceed the critical values proposed in the literature to demonstrate reliability as estimated by the Cronbach's alpha coefficient (α). In addition, RMSEA, GFI, AGFI, NFI, NNFI, TLI and CFI values were adjusted in line with indicators suggested by the scientific community.

The developed questionnaire was adapted from the original scales described by Carmona-Halty *et al.* (2017) and Schaufeli *et al.* (2002). Specifically, it contained 17 Likert-type items which assess the degree of involvement and engagement of university students with their studies. These questions were rated on a 7-point scale running from 0 to 6. Items pertained to three variables: vigour, dedication and absorption (Table 2). As an additional measure of academic performance, the average grades obtained by students during the first semester of the 2019/2020 academic year were employed. Finally, questions were included to collect relevant sociodemographic data.

Table 2. Academic engagement scale

Dimension	Variables	Items	Code
Academic engagement	Vigour	When doing classwork, I feel strong and full of energy.	v1
		I feel energised and encouraged when doing classroom activities.	v2
		When I wake up in the morning, I feel like going to class, studying or doing classwork	v3
		I can study continuously for long periods of time (without getting bored).	v4
		In spite of the difficulties I encounter, I consider myself a person who persists and perseveres when it comes to tackling classwork.	v5
		Even if I'm not feeling well, I don't stop doing my classwork.	v6
	Dedication	I believe that the studies I am pursuing make sense to me.	d1
		I am enthusiastic about the university studies I am taking.	d2
		The studies I am taking motivate me to do new things related with the academic path I am pursuing.	d3
		I am proud to be studying for this university degree.	d4
		Taking this university course is an important challenge for me.	d5
	Absorption	Time flies when I'm doing classwork.	a1
		I forget everything that is going on around me when I am concentrating on my studies.	a2
		I feel happy when I'm doing classwork.	a3
		I am involved and immersed in the studies I am pursuing.	a4
		I am so involved when I do class assignments that I lose track of time.	a5
		I find it difficult to stop doing my class assignments.	a6

Before administration of the developed instrument, procedures established by McMillan and Schumacher (2005) for the design of data collection procedures were followed. Specifically:

- A pilot test was carried out with first- and second-year university students. Eighteen students (n=18) with similar characteristics

to those of the study population took part in this test. The trial was conducted by two researchers who collected information on the time taken to complete the questionnaire, understanding of the items, etc.

- Form testing was carried out by two specialists (n=2) in research methodology who provided their views on the suitability

of the questions for the objectives of the work, the possible analyses to be performed, etc.

- Two experts (n=2) on the content examined in this study also collaborated by analysing questions related to integration of the basic and fundamental elements of academic engagement.

With regards to form and content testing, an instrument was designed in which the participating experts and specialists evaluated

the relevance, clarity and suitability of each of the items which were to be proposed on a Likert-type scale ranging from 0 to 6, where 0 was the lowest score and 6 the highest. In addition, a comments section was included for test evaluators to discuss aspects they considered to be relevant. A questionnaire assessment tool was provided to experts and specialists who indicated, for each of the proposed items, the relevance, clarity and appropriateness of the questionnaire. Obtained outcomes are shown in Table 3.

Table 3. Outcomes of form and content testing

Variables		Items	Relevance \bar{x}	Clarity \bar{x}	Suitability \bar{x}
Sociodemographic variables	Age		5.75	5.75	5
	Gender		5	5.75	5.25
	Degree		5.5	5.25	5.5
	Course		5.25	5.25	5.75
Academic performance	Indicate the average grade you achieved in the first semester of the current academic year.		5.5	4.5	5.5
	When doing classwork, I feel strong and full of energy.		5.75	5.25	5.5
Vigour	I feel energised and encouraged when doing classroom activities.		6	5.5	6
	When I wake up in the morning, I feel like going to class, studying or doing classwork.		5	5.25	5.25
	I can study continuously for long periods of time (without getting bored).		5.25	5	5.75
	In spite of the difficulties I encounter, I consider myself a person who persists and perseveres when it comes to tackling classwork.		6	5.75	5.5
	Even if I'm not feeling well, I don't stop doing my classwork.		5.5	5.25	5.75
	I believe that the studies I am pursuing make sense to me.		5.5	5.5	5.75
Dedication	I am enthusiastic about the university studies I am taking.		5.5	5.75	5.75
	The studies I am taking motivate me to do new things related with the academic path I am pursuing.		5.5	5.5	5.75
	I am proud to be studying for this university degree.		5.75	5.5	5.25
	Taking this university course is an important challenge for me.		5.25	5.75	5.25
Absorption	Time flies when I'm doing classwork.		5.5	5.5	5.5
	I forget everything that is going on around me when I am concentrating on my studies.		5.5	5.25	5.5
	I feel happy when I'm doing classwork.		5.25	6	5.5
	I am involved and immersed in the studies I am pursuing.		5.5	5.5	5.75
	I am so involved when I do class assignments that I lose track of time.		5.5	5.5	5.75
	I find it difficult to stop doing my class assignments.		5.5	6	5.5

This procedure made it possible to identify specific improvements to be made to the final version of the questionnaire. Specifically, the following changes were introduced in the final instrument:

- Wording of three of the items included in the engagement measurement scale were revised in order to refine the writing style and, in this way, improve comprehension of study participants.
- The question on “academic performance” was transformed so that students could choose from the following response options: failed [D], satisfactory [C], good [B] and very good [A].
- Finally, reliability of the employed scale was conducted. Specifically, Cronbach alpha coefficients were calculated in line with basic assumptions of tau-equivalence, unidimensionality and continuous measurement scales (Cho & Kim, 2015; Raykov & Marcoulides, 2017). In addition, it was considered appropriate to perform the MacDonald’s Omega test as this is a more robust statistic and more appropriate for studies related with social sciences (Peters, 2014, Viladrich *et al.*, 2017). According to the information presented in Table 4, Cronbach’s alpha and MacDonald’s omega values were excellent (Oviedo & Campo-Arias, 2005).

Table 4. Reliability analysis

Variables	Cronbach’s Alpha	MacDonald’s Omega
Vigour	0.86	0.91
Dedication	0.91	0.92
Absorption	0.88	0.92
Total	0.95	0.97

Data collection and analysis procedure

Data collection was carried out at the end of the first semester of the 2019-2020 academic year. Teachers working in the Faculty of Education and involved on the first two courses of this course administered questionnaires, in-person, to students. In order to ensure that ethical standards were met, participants were given detailed instructions about how to complete the questionnaire. They

were also informed about the purpose of the study and provided informed consent. Informed consents explicitly outlined the voluntary nature of study participation and explained that all collected data would be treated in accordance with principles of confidentiality and anonymity.

Once the data collection process was completed, a database was created using *Microsoft Excel* and saved as a *Comma-Separated-Values* (CSV) file for subsequent processing with R-Studio software (version 1.2.5001). Specifically, this statistical support software was used to identify possible missing data, eliminate multivariate outliers, perform central tendency analysis, analyse the normality of data distribution, check the internal consistency and reliability of the scale and, finally, perform comparative analyses. The α value for all analyses was set at .05.

Moreover, Gephi software version 0.9.2 (Bastian, Heymann & Jacomy, 2009) was used to facilitate visual interpretation of differences found between examined variables.

In addition, effect sizes pertaining to observed differences were calculated using *Microsoft Excel*, via the squared epsilon coefficient (ϵ^2), calculated using the following mathematical expression (where H is the score obtained in the Kruskal-Wallis test and n is the number of observations made):

$$E_R^2 = \frac{H}{(n^2 - 1)/(n + 1)}$$

Produced coefficients were interpreted according to the critical values proposed by Faul *et al.* (2007) and Tomczak and Tomczak (2014).

Results

Data cleansing

Prior to performing comparative analyses, we checked that the observations imputed for each of the items of the academic engagement scale were within the expected range. In this case, all scores were between 0 and 6. It was

also confirmed that there were no missing cases in the database. Had this not been the case, missing data substitution procedures proposed by Muñoz and Álvarez (2009) would have been applied.

Multivariate outliers were reviewed according to Mahalanobis distance calculations. This statistical test identifies the distance between the data and the centre of mass. When the value found in the Mahalanobis distance is equal to 0, the scores obtained by a given participant are deemed to be located in the centre of mass. As scores

move further away from this value, the more participants responses are deemed to be distanced from the centre of mass. Extreme distances could be considered outliers (Muñoz & Amón, 2013). Specifically, the Mahalanobis distance value was 28.86. This led to the removal of a total of 45 students from the database because they were considered extreme cases. Thus, the final sample was composed of 519 participants. Table 5 presents a synthesis of the central tendency measures obtained for each item.

Table 5. Central tendency measures

Variables	Items	Average	Mode	Median	Standard deviation
Vigour	V1	4.13	4	4	1.76
	V2	4.15	5	4	1.98
	V3	3.40	5	3	2.64
	V4	3.80	5	4	2.67
	V5	5.20	6	6	2.20
	V6	4.38	7	4	3.51
Dedication	D1	5.44	7	6	2.23
	D2	5.24	6	6	2.46
	D3	4.91	6	5	2.36
	D4	5.68	7	6	2.37
	D5	5.28	7	6	2.55
Absorption	A1	3.94	4	4	2.40
	A2	4.03	4	4	2.43
	A3	3.73	4	4	2.17
	A4	5.10	6	5	2.27
	A5	3.97	5	4	2.38
	A6	4.35	5	4	3.25

After verifying the validity of imputed data according to the ranges recorded for each item and eliminating any outliers, multicollinearity was checked to identify variables that were highly correlated and could, therefore, be redundant. To this end, a bivariate correlation was performed between all items of the data collection instrument. In all cases, the R-value was found to be equal to or less than .85 (Cupani, 2012).

In order to identify the most appropriate analytical approach and meet the study objectives, the distribution of data was analysed to examine whether or not normality could be confirmed. Specifically, the distribution of data was assessed using the Shapiro Wilks test and the Kolmogorov

Smirnov test. In all cases, outcomes achieved a significance level of $p < .001$, suggesting that data did not follow a normal distribution (George & Mallery, 2001).

Comparative analysis and effect sizes

Vigour variable

Comparative analysis using the Kruskal-Wallis H-test identified significant differences in relation to the variable describing vigour according to student grades. Thus, students who obtained “A” grades showed the highest level of vigour ($R=377.92$; $H=36.332$; $p > .001$; $\eta^2=.070$). The magnitude of the difference was found to be medium in accordance with the critical values proposed by Faul *et al.* (2007) and Tomczak and Tomczak (2014).

The figure below is a visual representation of identified differences. In this figure, the closer the nodes pertaining to grades are to the analysed variable, the higher the score reported by students. Thus, Figure 1 shows that the group of students who obtained “A”

grades was closer to the vigour node. This indicates that this group of students has the highest score for this variable. In contrast, students with a passing “C” grade reported less vigorous academic performance.

Figure 1. Differences between student groups and vigour



With regards to the items that make up the variable describing vigour, significant differences ($p \leq .05$) were observed in the scores obtained for all items except for v2 (*I feel energised and encouraged when doing classroom activities*; $p = .099$) (Table 6). Identified differences favoured students who obtained “A” grades who, in turn, highly rated all questions pertaining to vigour. Upon further analysis of vigour, students achieving “A” grades were typically characterised by studying continuously for long periods of time ($H = 27.841$; $p > .001$; $E_R^2 = .053$), reporting that they were *persistent and persevering when approaching classwork* ($H = 44.095$; $p > .001$; $E_R^2 = .085$) and agreeing to *always doing class tasks* ($H = 32.033$; $p > .001$; $E_R^2 = .061$). With regards to the effect size of the differences detected, a medium effect was found for items 5 and 6 ($E_R^2 \geq .06$) and a small effect for all remaining items ($E_R^2 \geq .01$).

Dedication variable

Significant differences were also detected with respect to the variable describing dedication ($p > .001$). Specifically, these discrepancies were in favour of students who obtained “A” grades, finding this group of students to have a higher level of dedication ($R = 344.02$; $H = 22.398$; $p > .001$; $E_R^2 = .043$). The effect size pertaining to these differences was small ($E_R^2 \geq .01$).

Visually, identified differences followed a similar trend to that seen in relation to vigour (Fig. 2). In this case, students who achieved “A” grades again had more positive outcomes, reporting higher levels of dedication. In contrast, students who did not pass the subject (“D” / failed) showed the least dedication to their studies.

Table 6. Comparative analysis of items pertaining to vigour

	Groups	n	Average range	H	P	(E_R^2)
v1	Failed	32	226.98	16.624	.001	.032
	Sufficient	142	238.13			
	Good	313	264.31			
	Very good	32	347.88			
v2	Failed	32	241.58	6.264	.099	.012
	Sufficient	142	242.04			
	Good	313	265.26			
	Very good	32	306.66			
v3	Failed	32	251.22	18.642	.000	.035
	Sufficient	142	232.53			
	Good	313	263.59			
	Very good	32	355.59			
v4	Failed	32	224.48	27.841	.000	.053
	Sufficient	142	220.56			
	Good	313	271.55			
	Very good	32	357.59			
v5	Failed	32	197.92	44.095	.000	.085
	Sufficient	142	208.50			
	Good	313	279.33			
	Very good	32	361.55			
v6	Failed	32	235.08	32.033	.000	.061
	Sufficient	142	216.62			
	Good	313	271.13			
	Very good	32	368.56			

Figure 2. Differences between student groups and dedication



Following application of the Kruskal-Wallis H-test, statistically significant differences ($p \leq .05$) were detected in relation to some specific items on the dedication scale (table 7).

Similarly to that seen when examining vigour, students who obtained “A” grades gave more positive evaluations of certain aspects such as *feeling motivated when doing education - related activities* ($H=31.237$; $p > .001$; $E_R^2 = .040$)

and *making sense of university studies* ($H=25.088$; $p > .005$; $E_R^2 = .028$). The effect sizes calculated using epsilon squared (E_R^2) were found to be small in magnitude ($E_R^2 \geq .01$). It should be noted that no significant differences were identified between examined groups with regards to item d5 (*taking this university course is an important challenge for me*; $p = .107$).

Table 7. Comparative analysis of items pertaining to dedication

	Groups	n	Average range	H	p	(E_R^2)
d1	Failed	32	225.34	25.088	.002	.028
	Sufficient	142	240.21			
	Good	313	264.23			
	Very Good	32	341.11			
d2	Failed	32	193.95	21.583	.000	.042
	Sufficient	142	240.02			
	Good	313	266.53			
	Very Good	32	350.86			
d3	Failed	32	221.89	31.237	.000	.040
	Sufficient	142	222.86			
	Good	313	273.51			
	Very Good	32	330.73			
d4	Failed	32	221.19	16.682	.000	.051
	Sufficient	142	215.69			
	Good	313	278.17			
	Very Good	32	317.72			
d5	Failed	32	234.94	19.878	.107	.011
	Sufficient	142	241.14			
	Good	313	267.37			
	Very Good	32	296.66			

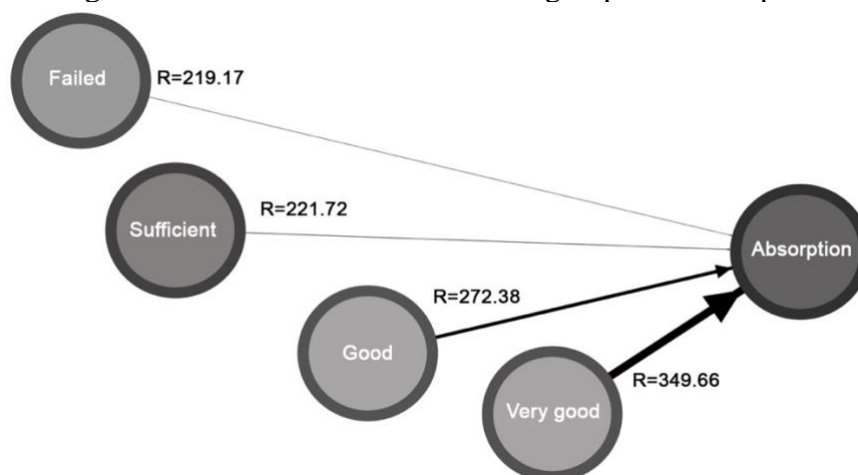
Absorption variable

Finally, significant differences ($p \leq .05$) were also found between groups with regards to absorption. In accordance with the trend discussed so far, students with “A” grades also presented higher levels of absorption on the academic engagement scale ($R=349.66$; $H=25.235$; $p > .001$; $E_R^2=.048$). Identified differences produced a small effect size ($E_R^2 < .06$) in accordance with critical values for the

interpretation of effect sizes (Faul *et al.*, 2007; Tomczak and Tomczak, 2014).

The figure presented below (Fig. 3) allows us to identify that students with the highest level of absorption achieved the best (“A”) grades. The most distant nodes were those linking absorption and students with an average failing grade. This suggests that this group of students had the lowest level of absorption.

Figure 3. Differences between student groups and absorption



Application of the Kruskal-Wallis H test to all items making up the absorption scale yielded significant differences ($p \leq .05$), with the exception of item a3 (*I feel happy when doing classwork*; $p = .220$) (Table 8). Specifically, identified differences indicated that students with “A” grades had the highest

absorption levels. Specifically, this group of students is characterised by being *involved in their studies* ($H = 53.205$; $p > .001$; $E_R^2 = .078$), *not finding classwork tasks complicated* ($H = 38.719$; $p > .001$; $E_R^2 = .033$) and *feeling happy when doing academic activities* ($H = 34.194$; $p > .001$; $E_R^2 = .008$).

Table 8. Comparative analysis between absorption and obtained grades

	Groups	n	Average range	H	p	(E_R^2)
a1	Failed	32	218.05	24.055	.001	.030
	Sufficient	142	231.65			
	Good	313	270.27			
	Very Good	32	327.31			
a2	Failed	32	218.45	25.447	.001	.031
	Sufficient	142	235.26			
	Good	313	267.61			
	Very Good	32	336.88			
a3	Failed	32	249.06	34.194	.220	.008
	Sufficient	142	244.63			
	Good	313	263.91			
	Very Good	32	300.84			
a4	Failed	32	199.17	53.205	.000	.078
	Sufficient	142	211.65			
	Good	313	277.82			
	Very Good	32	361.02			
a5	Failed	32	257.17	31.608	.000	.047
	Sufficient	142	219.27			
	Good	313	269.31			
	Very Good	32	352.45			
a6	Failed	32	222.28	38.719	.001	.033
	Sufficient	142	227.85			
	Good	313	271.44			
	Very Good	32	328.53			

Discussion and Conclusions

Students entering university face important changes that require them not only to master adaptation skills but, also, to have a positive attitude towards meeting academic demands. From this perspective, academic *engagement* takes on real relevance as it involves a positive connection between students and the educational process in general (teachers, classmates, institution, etc.). An engaged student strives to show persistence, alongside enduring interest and involvement in the completion of academic assignments. Thus, student *engagement* is associated with high

degrees of involvement in learning with implications not only emerging at a cognitive level but, also, at a behavioural and emotional level (Fredricks *et al.* 2004). This means that *engagement* can be conceptualised from a broad and holistic viewpoint, encompassing both personal and contextual factors. Further, student involvement occurs within a determined context which presents certain conditions (Kahu and Nelson, 2017). Several studies have found the state of enthusiasm shown by students for learning to be significantly and directly associated with other variables such as academic satisfaction (Pena

and Extremera, 2012) and adaptability to the course being study (Merino and Boada, 2016).

Students who are more highly involved in their learning experience greater satisfaction and better well-being when tackling formative processes with this, consequently favouring the achievement of educational goals (Carmona-Halty *et al.*, 2017). Such positive thinking, which is also associated with engagement, provides the energy and willingness needed to be effective and face the learning process in an appropriate way, therefore, reducing the risk of academic disengagement and school dropout (Fonseca & García, 2016).

As indicated by Salanova and Schaufeli (2009), this state of engagement is demonstrated when people have high energy levels and strongly identify with the work and the tasks they are performing. For this reason, student *engagement* is associated with proactive behaviour (Rodríguez *et al.*, 2020) and appropriate management of skills such as information management, problem solving, decision making and teamwork. Academic engagement is also linked with active learning as involved students are better predisposed towards self-regulating their learning and are more capable of integrating new strategies throughout their learning process (Guerra *et al.*, 2019). In the educational field, this involvement and identification with the “responsible student profile” should be translated into the achievement of good academic outcomes. This relationship has been demonstrated in the present research, with outcomes revealing a significant relationship between the degree of engagement and academic performance measured via actual academic grades. These findings are consistent with those reported by Parra (2010) who found vigour, dedication and absorption to be significantly correlated with study satisfaction and, resultantly, good academic performance.

The most relevant conclusions of the present study are that students reaching higher levels of engagement also achieved higher academic

grades. The comparative analyses conducted to examine the relationship between academic engagement variables (vigour, dedication and absorption) and student performance (fail, pass, good, very good) produced significant findings. Specifically, differences were found which indicated that students with a greater sense of psychological well-being achieved better academic performance following learning. In this sense, undergraduate students with better results (‘very good’/‘A’) presented higher levels of academic engagement and vice versa. (Christenson *et al.*, 2012).

Data regarding vigour, dedication and absorption also revealed similar trends. However, stronger outcomes emerged pertaining to vigour with a medium effect size being obtained (Faul *et al.*, 2007; Tomczak & Tomczak, 2014). Present findings highlighted that students who are more involved in learning tasks have a better psychological predisposition to academic challenges and exert more effort to achieve better outcomes or grades. Thus, according to Manzano (2002), both the achievement of high grades and the correct adaptation of students to university education depend to a large extent on effort and academic engagement.

In light of findings reported in previous studies (Álvarez-Pérez, López-Aguilar and Valladares-Hernández, 2021), it can be stated that students’ level of academic engagement has an impact on them achieving better grades in their degree studies. The development of programmes that provide good guidance and stimulate mental flexibility in order to develop an active learning style, skills to adapt to the rigours of academic life and problem-solving, and the ability to organise oneself, think and define training itineraries, etc. could contribute to the development of better student engagement. All of this will lead to good academic performance.

With regards to the limitations of the present study, the characteristics and size of the sample should first be highlighted. Present findings cannot be extrapolated to university students as a whole, making it necessary to

develop further studies, based on outcomes reported here, which continue to analyse the impact of academic engagement on study performance. Such studies should employ broader samples in order to allow generalisation of outcomes. In a similar sense, it would be interesting to work with students undertaking university degree courses pertaining to various branches of knowledge. This would enable verification of the relationship found in the present study between engagement and performance to conform whether it emerges in other types of students, regardless of the degree being studied. It is also important to further develop indicators capable of assessing academic performance. Although the obtained outcomes provide a valid criterion, it is advised for future research to consider other parameters in order to provide more complete and accurate information.

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