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Original

Academic pathways: The role of engagement as a mediator in the decision to drop out or stay at university

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ABSTRACT

The study of university dropout has significantly advanced following the introduction of interactionist theoretical models. However, these models need to be updated based on the current context and new variables that have recently become more important, such as the use of self-regulation strategies (SRL) and academic engagement. Therefore, the aim of this study is to analyse the extent to which academic engagement mediates the relationship between social integration, academic satisfaction, expectations, and the use of SRL. From a sample of 1177 university students (*Mean age* = 19.26, *SD* = 2.97, 79.7% women) academic engagement was found to act as a total mediator in the relationship between independent variables and the use of SRL in models of the intention to drop out of the degree course and university. However, in the models of intention to remain, partial mediation was seen in the effect of social integration and satisfaction, with total mediation only for expectations through the vigour component of engagement. These findings contribute to a deeper understanding of the phenomenon of student persistence at university.

Trayectorias académicas: El papel del compromiso como mediador en la decisión de abandono o permanencia universitaria

RESUMEN

El estudio del abandono universitario ha avanzado sustancialmente tras la propuesta teórica de los modelos interaccionistas. Sin embargo, se torna necesario actualizar dichos modelos en función del contexto y las nuevas variables que han ganado relevancia recientemente, tales como el uso de estrategias de autorregulación (SRL) o el compromiso académico. Por ello, el objetivo de la presente investigación es analizar en qué medida el compromiso con los estudios media la relación entre la integración social, la satisfacción académica, las expectativas y el uso de estrategias SRL. A partir de una muestra de 1177 estudiantes universitarios (*M_{edad}* = 19.26, *DT* = 2.97, 79.7% mujeres) se observa que el compromiso académico actúa como mediador total en la relación entre las variables independientes y el uso de SRL en los modelos de Intention to drop out de la titulación y de la universidad. Sin embargo, para los modelos de intención de permanencia se observa una mediación parcial en el efecto de la integración social y la satisfacción, siendo total solo para las expectativas a través del componente vigor del compromiso. Estos resultados permiten seguir profundizando en el conocimiento del fenómeno de la permanencia en la universidad.

Introduction

The study of university drop-out has become more important in recent years and is a worldwide problem. Within the framework of the Organization for Economic Co-operation and Development (OECD, 2019), countries such as Canada, Ireland, and the United Kingdom are included in the group of countries with high rates of drop-out (over 15%), although some countries have much higher rates, such as Spain, at 33.2% (Ministerio de Universidades, 2023). In Europe, research into this phenomenon has grown following the implementation of the European Higher Education Area (EHEA), as once it came into force, students finishing their studies was considered a quality indicator within universities (Íñiguez et al., 2016).

Currently, there is a growing need to understand the main reasons that lead students to drop out in the first years of their university careers. This need is driven by two significant factors. Firstly, dropping out may have negative consequences for the students individually and for their families, including mental health problems such as depression and low self-esteem, family conflict, and the loss of both professional and personal opportunities (Sosu & Pheunpha, 2019). Secondly, dropping out is a significant cost to society, including lost occupational opportunities for qualified workers (Torrado & Figuera, 2019).

One recent approach, which has been particularly important in studying this phenomenon, is provided by interactionist models, which reject the idea that dropping out can be understood from a single dimension, and indicate the need to consider various variables with multi-causal origins, including in combination, in order to explain it (Bean & Eaton, 2001; Tinto, 1975). In fact, one recent systematic review that examined the published literature on drop out over the last five years reported that most studies concluded that dropping out is a process of decisions that goes through different phases and has a variety of different causes (Véliz-Palomino & Ortega, 2023). One of these models, from Bean and Eaton (2001), suggests a multi-stage approach to student retention. The first stage focuses on the students' characteristics when they begin, considering that each person starts at a university with prior psychological attributes resulting from previous experiences, abilities, and behaviors. Once at university, the student interacts in various contexts (bureaucratic, academic, and social) and maintains external relationships with parents, partners, employers, and friends. Within the institution, students become involved in self-assessments influenced by psychological processes. According to those authors, the emotional reactions in the university environment drive students to employ adaptive strategies to engage both academically and socially. These elements are fundamental to understanding how students respond emotionally to their surroundings and seek to adapt academically and socially. All of these components that interact in the university setting will result in their attitudes, defined as students' institutional engagement and adjustment, which will lead to a process of decision-making to ultimately decide whether to remain at university or not.

One of the most important individual variables within this multicausality in these models is students' engagement with the process of learning and personal development. According to Schaufeli and Bakker (2010), engagement is defined as a positive, satisfactory, lasting state of involvement in academic activities characterized by three dimensions: vigor (the energy and enthusiasm a student feels doing a task), dedication (students' involvement and commitment to a task), and absorption (the concentration and attention a student gives a task, even when it is difficult or demanding). In short, high levels of engagement mean that the students are actively involved in their learning, are committed to their tasks, and have a positive attitude towards learning. Students who feel more engaged with their studies and their university are less likely to drop out (Abreu-Alves et al., 2022; Marôco et al., 2020; Tight, 2019; Truta et al., 2018).

In addition, engagement can encompass different personal areas, with strong interactions, such as behavioral, cognitive, affective, and social areas (Fredricks et al., 2004). In each case, strong engagement is followed by actions, thoughts, and attitudes that facilitate significant learning. In this regard, Wang and Eccles (2013) found that engagement may be understood as a student's psychological investment in learning activities, including sustained action and self-regulated learning (SRL). SRL is a process consisting of self-generated thoughts, emotions, and actions that are planned and modified in cycles to achieve personal objectives (Panadero & Alonso-Tapia, 2014; Zimmerman, 2000). Self-regulated students recognize what they need to produce optimal learning experiences, and put strategies in place to improve their academic performance. Students who demonstrate more self-regulation when it comes to learning are those who have better academic performance (Mega et al., 2014; Sun et al., 2017). In turn, academic performance is a variable that has traditionally been related to the intention to remain, such that students who perform better are the ones who decide to stay on their courses (Ortiz-Lozano et al., 2018).

In addition, students with high levels of self-confidence are more likely to successfully complete their university courses (Ojeda et al., 2011), even if they face challenges during that time. Along with self-confidence, according to Truta et al. (2018), academic satisfaction at the beginning of university is a significant predictor of the intention to drop out. Similarly, the results reported by Abreu-Alves et al. (2022) and Marôco et al. (2020) have shown that engagement is a mediating variable between perceived social support and drop-out. It has also been found that social variables, such as getting on well with classmates and having good relationships with teachers, are important when it comes to deciding whether to continue with one's university studies (Gilardi & Guglielmetti, 2011; Tinto, 2005; Willcoxson, 2010). Hence, social integration is considered a protective factor against drop-out at university (Cervero et al., 2017; Viale, 2014).

The present study

The objective of the present study was to examine the extent to which engagement with chosen courses of study (in terms of vigor, absorption, and dedication) mediate the relationship between social integration, satisfaction with the course, and expectations on the one hand, and the use of SRL strategies on the other, in students both with and without the intention to drop out of their current university courses. Figure 1 outlines this objective. In terms of hypotheses, as Figure 1 indicates, student engagement (in terms of vigor, absorption, and dedication) fully mediates the relationship between the variables of social integration, satisfaction, and expectations, and the use of self-regulation (SRL) strategies. More specifically, we expect that the greater the social integration, satisfaction with the course, and expectations of self-efficacy, the greater the student engagement (greater vigor, absorption, and dedication). And the greater the engagement, the greater the use of SRL strategies.
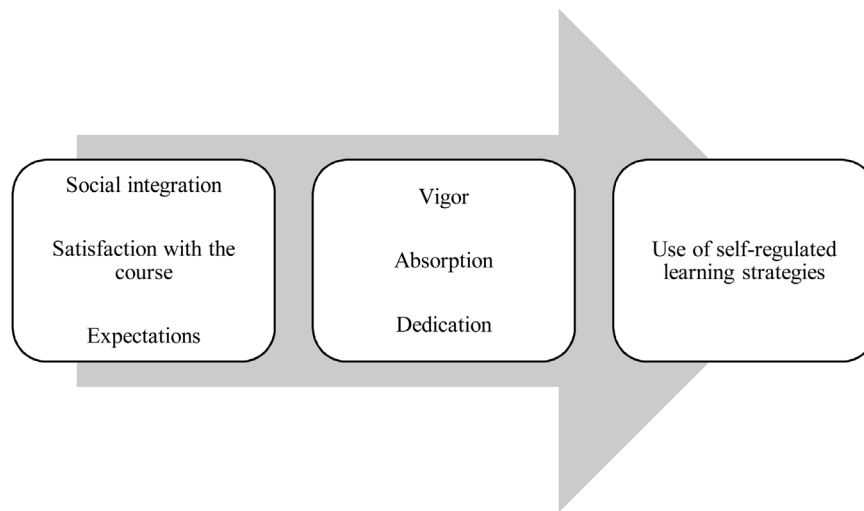
Figure 1. Outline of the study (mediation model for engagement with university course).

Method

Participants

A total of 1,177 university students participated in the study (79.7% women), mostly aged between 17 and 23 years old—96.5%—($M = 19.26$, $SD = 2.97$). They were mainly in the first or second year of bachelor's degree courses (64.7% in their 1st year, 28.3% in their 2nd). The participants were attending three Spanish universities (two in the north and one in the south). The degree courses were in Psychology, Infant Education Teaching, Primary Education Teaching, Speech Therapy, Social Work, Business Administration, Accounting and Finance, Economics, Pedagogy, English Studies, French Studies, Spanish Philology, Oriental Studies, Classical Philology, Italian Studies, German Studies, and English Philology. At the time of the study, 28.4% of the sample had thought about dropping out of university, while 29.3% had thought about dropping out of the course they were doing at that time.

Instruments

Social integration. This was measured using the *Early University Dropout Intentions Questionnaire* (EUDIQ-R; Bernardo et al., 2022), through three items each with a five-point Likert-type response (1 = completely disagree to 5 = completely agree). Example items include, "*I have a good relationship with my classmates,*" and "*I feel included with my classmates*". The statistics indicate acceptable reliability ($\alpha = .78$, $\omega = .80$, composite reliability = .84), acceptable extracted mean variance = .65, and acceptable construct validity (CFI = .99, SRMS = .001).

Satisfaction with the course. This was measured using the satisfaction factor in the Early University Dropout Intentions Questionnaire (EUDIQ-R; Bernardo et al., 2022), made up of two items with five-point Likert-type responses (1 = completely disagree to 5 = completely agree). An example item is, "*I'm satisfied with my course*". The statistics indicate acceptable reliability ($\alpha = .75$, $\omega = .75$, composite reliability = .77), acceptable extracted mean variance = .59, and acceptable construct validity (CFI = .99, SRMS = .03).

Student expectations. These were measured using the expectations factor in the *Early University Dropout Intentions Questionnaire* (EUDIQ-R; Bernardo et al., 2022), made up of two items with five-point Likert-type responses (1 = completely disagree to 5 = completely agree). An example item is, "*The course meets my expectations of it*". The statistics indicate acceptable reliability

($\alpha = .62$, $\omega = .78$, composite reliability = .78), acceptable extracted mean variance = .68, and acceptable construct validity (CFI = .98, SRMS = .03).

Engagement (vigor). The "vigor" dimension was measured using six items from the Utrecht Work Engagement Scale (UWES-S; Schaufeli & Bakker, 2003), adapted for Spanish university students (Parra & Pérez-Villalobos, 2010) using a six-point scale (1 = never to 6 = always). Example items include, "*In my student-related tasks I do not stop, even if I don't feel well*", "*I can keep studying for long periods of time*", and "*I feel strong and vigorous when I'm studying or when I go to class*". The statistics indicate acceptable reliability ($\alpha = .77$, $\omega = .79$, composite reliability = .82), acceptable extracted mean variance = .51, and acceptable construct validity (CFI = .94, SRMS = .06).

Engagement (absorption). This was measured using the "absorption" factor from the Utrecht Work Engagement Scale (UWES-S; Schaufeli & Bakker, 2003), adapted for Spanish university students (Parra & Pérez-Villalobos, 2010) using a six-point scale (1 = never to 6 = always). Example items include, "*I get 'carried away' when I do my study tasks*", "*It is hard for me to separate myself from my study*", and "*I am immersed in my study*". The statistics indicate acceptable reliability ($\alpha = .72$, $\omega = .76$, composite reliability = .81), acceptable extracted mean variance = .49, and acceptable construct validity (CFI = .94, SRMS = .05).

Engagement (dedication). This was measured using the "dedication" factor from the Utrecht Work Engagement Scale (UWES-S; Schaufeli & Bakker, 2003), adapted for Spanish university students (Parra & Pérez-Villalobos, 2010) using a six-point scale (1 = never to 6 = always). Example items include, "*My study inspire me with new things*", "*I think my course is meaningful*", and "*My course is challenging for me*". The statistics indicate acceptable reliability ($\alpha = .81$, $\omega = .84$, composite reliability = .86), acceptable extracted mean variance = .57, and acceptable construct validity (CFI = .99, SRMS = .02).

Self-regulated learning (SRL) strategies. Use of SRL strategies was assessed using the SRL factor in the *Early University Dropout Intentions Questionnaire* (EUDIQ-R; Bernardo et al., 2022), through six items each with a five-point Likert-type response (1 = completely disagree to 5 = completely agree). Example items include "*Before starting to study I think about goals*", and "*I organize my study sessions according to difficulty*". The statistics indicate acceptable reliability ($\alpha = .74$, $\omega = .76$, composite reliability = .82), acceptable extracted mean variance = .48, and acceptable construct validity (CFI = .96, SRMS = .04).

Intention to drop out. This was measured by asking participants if they had ever considered dropping out of university or dropping
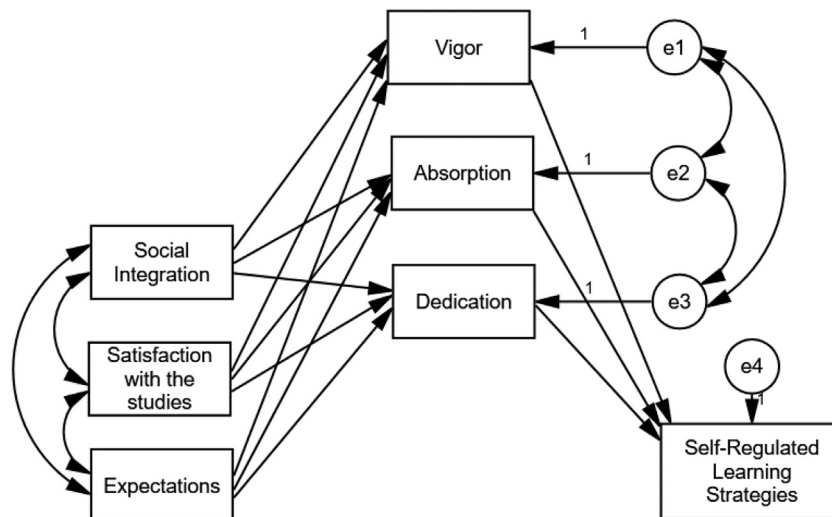
Figure 2. Complete mediation model for student engagement [e1 to e4 (errors of estimation)].
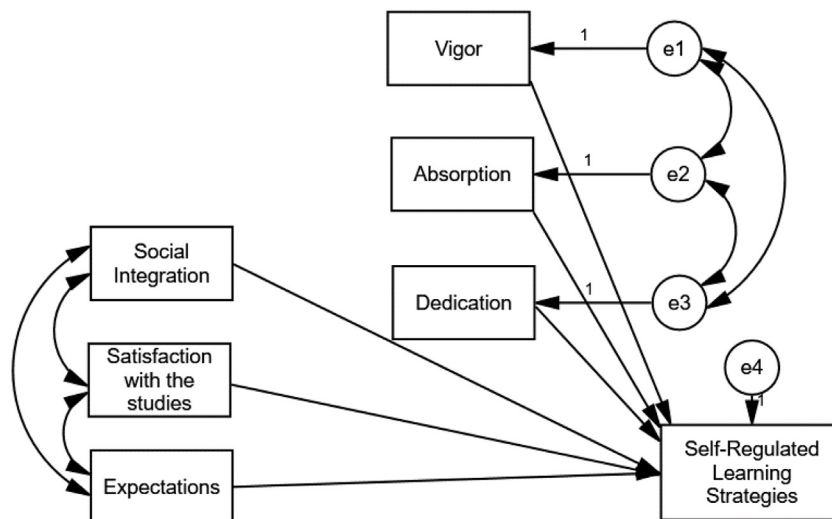

Figure 3. No-mediation model for student engagement [e1 to e4 (errors of estimation)].

out of the course they were doing, it consisted of two items with a yes/no response (1 = yes, 2 = no).

Procedure

The study was first approved by the Research and Innovation Subcommittee of the University of Oviedo Research Ethics Committee. The participants were selected by convenience sampling, with students participating who had consented. The students were invited to complete an online questionnaire during the first semester of the academic year. Before beginning to complete the questionnaire, participants were informed of the study objectives and assured of the confidentiality of their data during the collection process. They were asked to provide their informed consent to take part. This ensured compliance with the relevant data protection legislation and ethical standards.

Data analysis

The data in this study were analyzed in two stages. The first consisted of analyzing the statistical properties of the variables making up the model (means, standard deviations, asymmetry, and kurtosis) along with the correlation matrix and missing values. According to the criteria established by Gravetter and Wallnau (2014), the distribution of the variable scores can be considered normal (both asymmetry and kurtosis are within ± 1). As the percentage of missing values was low (3.47%), they were treated using the multiple imputation procedure. In the second stage, proposed path models were specified for the different conditions (complete mediation, see Figure 2; no mediation, see Figure 3) for both intention to drop out of the course and for intention to drop out of university altogether. Model fit was assessed using SPSS AMOS 22 (Arbuckle, 2013). The results were evaluated based on typically used criteria: Chi squared, RMR, GFI, AGFI, TLI, CFI, and RMSEA. There is evidence of good fit when χ^2 has $p > .05$, RMR < .05, GFI, AGFI and TLI $\geq .90$, CFI $\geq .95$, and RMSEA $\leq .06$. When the proposed model needed re-specification, selection of an improved model was based on the AIC and BIC statistics (the best model is that presenting lower values for AIC and BIC). The sizes of the effects of the regression coefficients corresponding to the second study objective were assessed using f^2 ($f^2 \geq 0.02$ small effect; $f^2 \geq 0.15$ medium effect; $f^2 \geq 0.35$ large effect).

Table 1
Pearson correlation matrix and descriptive statistics

	IAB_UN	IAB_TI	EXP	SAT	ISO	SRL	VIG	ABS	DED
IAB_UN	—								
IAB_TI	.75**	—							
EXP	-.40**	-.46**	—						
SAT	-.38**	-.49**	.70**	—					
ISO	-.15**	-.15**	.20**	.21**	—				
SRL	-.19**	-.18**	.34**	.38**	.19**	—			
VIG	-.31**	-.30**	.45**	.46**	.24**	.53**	—		
ABS	-.26**	-.29**	.46**	.50**	.17**	.49**	.76**	—	
DED	-.38**	-.44**	.68**	.73**	.20**	.43**	.58**	.63**	—
M			3.83	3.98	3.86	3.79	3.41	3.57	4.56
DT			0.77	0.70	0.76	0.57	0.83	0.80	0.87
SKW			-0.83	-0.79	-0.65	-0.58	0.02	-0.05	-0.77
KUR			0.92	0.86	0.45	0.60	-0.17	0.01	0.55

Note. IAB_UN = Intention to drop out of university: 1 = no, 2 = yes; IAB_TI = Intention to drop out of course: 1 = no, 2 = yes; EXP = Expectations; SAT = Satisfaction; ISO = Social integration; SRL = Self-regulation strategies; VIG = Vigor; ABS = Absorption; DED = Dedication; *M* = Mean; *SD* = Standard deviation; SKW = Asymmetry; KUR = Kurtosis.

Table 2
Data related to the fit of the mediation and no-mediation models of engagement for the intention to drop out of the course or the university

	IAT Model		IAU Model		NIAT Model		NIAU Model	
	ME	*NME*	*ME*	*NME*	*ME*	*NME*	*ME*	*NME*
χ^2	1.09	337.12	2.34	332.02	22.578	484.76	15.115	567.32
df	3	9	3	9	3	9	3	9
p	.778	.000	.506	.000	.000	.000	.002	.000
AGFI	.992	.513	.981	.516	.929	.645	.953	.609
CFI	1.000	.674	1.000	.693	.992	.794	.995	.771
RMR	.004	.171	.005	.184	.008	.100	.008	.113

Note. IAT = Intention to drop out of the course; IAU = Intention to drop out of university; NIAT = No intention to drop out of the course; NIAU = No Intention to drop out of university; ME = Mediation from Engagement; NME = No Mediation from Engagement.

Results

Descriptive analysis

Table 1 shows the Pearson correlation matrix along with the descriptive statistics for the variables included in the path model. All of the variables demonstrated a univariate normal distribution (according to asymmetry and kurtosis data). Looking at the relationships between the variables, higher levels of student *engagement* (*vigor, absorption, dedication*) are usually accompanied by lower levels of *intention to drop out* (of the course and of university altogether). The same pattern occurs in the relationship between *intention to drop out* and other study variables such as student *expectations*, *satisfaction with the course*, and *social integration*. Finally, when students have positive *expectations* and are *satisfied with their courses* there is also a good level of *engagement* with their academic work.

Path analysis: The mediating role of student engagement

As noted in the data analysis section, two types of models were specified: (a) one supposing complete mediation by student *engagement* with regards to the association between the independent variables in the model (*social integration, satisfaction with the course, expectations*) and the final dependent variable (*use of*

self-regulated learning strategies); and (b) one postulating a lack of mediation from *engagement*. The data relating to fit are presented in Table 2.

The results support the initially raised hypothesis of complete mediation by student *engagement*. As Table 2 shows, while the fit for the complete mediation models was excellent, both for the intention to drop out of the course and the intention to drop out of university, the fit for the no mediation models was very poor. Similarly, looking at the fit of the models in the sample of students who indicated no intentions to drop out, the *engagement* mediation model continued to be better than the no mediation model. Table 3 shows the standardized regression coefficients, their statistical significance, and the effect sizes of the mediation model for the four conditions (for reasons of parsimony, associations that were not statistically significant are not shown).

In general, the data related to the models of *Intention to drop out*, indicate that the independent variables (*social integration, satisfaction,* and *expectations*) were significantly related to the three intermediate variables (*engagement: vigor, absorption,* and *dedication*) which were in turn related to the final dependent variable (*SRL*). All of the relationships were positive. In the models for *intention to remain*, the data showed a similar pattern. The effect sizes were generally large for the *satisfaction* and *expectation* variables' effects on the student *engagement* variables, and generally medium for the *engagement* variables' effect on *SRL*. One notable difference

Table 3
Standardized direct effects

	SRC	EE	$P_{(SRC)}$	f^2
Intention to drop out (Course)				
Social Integration → Engagement (vigor)	.116	.045	.014	0.168
Satisfaction → Engagement (vigor)	.175	.068	.004	0.231
Satisfaction → Engagement (absorption)	.311	.067	<.001	0.386
Satisfaction → Engagement (dedication)	.470	.058	<.001	0.609
Expectations → Engagement (vigor)	.326	.058	<.001	0.408
Expectations → Engagement (absorption)	.243	.057	<.001	0.309
Expectations → Engagement (dedication)	.392	.049	<.001	0.493
Engagement (vigor) → SRL	.266	.050	<.001	0.333
Engagement (absorption) → SRL	.242	.054	<.001	0.296
Engagement (dedication) → SRL	.118	.036	.034	0.170
Intention to drop out (University)				
Social Integration → Engagement (vigor)	.091	.045	.050	0.132
Satisfaction → Engagement (vigor)	.274	.074	<.001	0.343
Satisfaction → Engagement (absorption)	.374	.073	<.001	0.467
Satisfaction → Engagement (dedication)	.459	.063	<.001	0.590
Expectations → Engagement (vigor)	.245	.061	<.001	0.310
Expectations → Engagement (absorption)	.198	.061	.002	0.257
Expectations → Engagement (dedication)	.394	.052	<.001	0.498
Engagement (vigor) → SRL	.257	.051	<.001	0.323
Engagement (absorption) → SRL	.257	.054	<.001	0.323
Intention to remain (Course)				
Social Integration → Engagement (vigor)	.152	.036	<.001	0.206
Social Integration → Engagement (dedication)	.075	.027	.006	0.126
Social Integration → Engagement (absorption)	.073	.034	.023	0.124
Satisfaction → Engagement (vigor)	.254	.056	<.001	0.319
Satisfaction → Engagement (absorption)	.289	.053	<.001	0.360
Satisfaction → Engagement (dedication)	.442	.043	<.001	0.565
Expectations → Engagement (vigor)	.133	.052	<.001	0.186
Expectations → Engagement (absorption)	.168	.049	<.001	0.231
Expectations → Engagement (dedication)	.251	.039	<.001	0.316
Engagement (vigor) → SRL	.341	.032	<.001	0.424
Engagement (absorption) → SRL	.096	.034	.041	0.148
Engagement (dedication) → SRL	.159	.029	<.001	0.215
Intention to remain (University)				
Social Integration → Engagement (vigor)	.164	.036	<.001	0.219
Social Integration → Engagement (absorption)	.083	.049	.009	0.134
Satisfaction → Engagement (vigor)	.219	.051	<.001	0.279
Satisfaction → Engagement (absorption)	.280	.049	<.001	0.350
Satisfaction → Engagement (dedication)	.489	.039	<.001	0.640
Expectations → Engagement (vigor)	.162	.050	<.001	0.217
Expectations → Engagement (absorption)	.186	.047	<.001	0.243
Expectations → Engagement (dedication)	.248	.038	<.001	0.312
Engagement (vigor) → SRL	.344	.032	<.001	0.429
Engagement (absorption) → SRL	.093	.034	.049	0.145
Engagement (dedication) → SRL	.164	.032	<.001	0.219

Note. SRC = Standardized Regression Coefficient; EE = Error of Estimation; $p_{(SRC)}$ = SRC probability; f^2 = Effect size: $f^2 \geq 0.02$ small, $f^2 \geq 0.15$ medium, $f^2 \geq 0.35$ large.

between the models for *intention to drop out* and *intention to remain* is that in the latter, the three independent variables were positively and significantly related ($p < .001$), whereas in the former, only the associations between *satisfaction* and *expectations* were significant.

Table 4 shows the indirect effects, which indicate the strength of the mediation from *academic engagement*. All of the indirect effects were statistically significant (except for the association between *social integration* and *SRL* in the *intention to drop out* condition), which indicates that students' *academic engagement* generally behaves as a mediating variable, in the explanatory models for both *intention to drop out* and *intention to remain*. The sizes of the indirect effects were medium for the variables *satisfaction* and *expectations* in relation to *SRL*, small for the effect of *social integration* on *SRL* in the *intention to remain models*, and not significant in the case of *intention to drop out*.

Finally, the amount of variance explained by the intermediate and final variables in the *intention to drop out* and the *intention to remain* models was similar in terms of the final dependent variable (*SRL*), although more limited in terms of the mediating variable (*engagement*): *Intention to*

drop out (Couse: *vigor* = 22.4%; *absorption* = 25%; *dedication* = 60%; *SRL* = 30% / University: *vigor* = 23.7%; *absorption* = 28%; *dedication* = 61.5%; *SRL* = 29.5%), *Intention to remain* (Course: *vigor* = 17.5%; *absorption* = 19.3%; *dedication* = 42.7%; *SRL* = 27.9% / University: *vigor* = 17.6%; *absorption* = 20.5%; *dedication* = 47.3%; *SRL* = 28.1%).

Discussion

Theories about dropping out of higher education have considered the interaction between a variety of different variables in order to explain why this phenomenon occurs (Tinto, 1975; Viale, 2014). However, it is still necessary to continue looking more deeply into which variables are important for predicting both drop out and remaining at university, as well as for understanding how this interaction is produced. Hence, the main objective of the present study was to analyze the extent to which students' engagement with their chosen course of study (in terms of vigor, absorption, and dedication) mediated the relationship of social integration, satisfaction with the course, and expectations, with autonomous learning (in terms of SRL).

Table 4
Standardized indirect effects

	CRE	LCI - UCI	f^2
Intention to drop out (Course)			
Social Integration → SRL	.038	-.004 / .079	------
Expectations → SRL	.192***	.131 / .249	0.251
Satisfaction → SRL	.177***	.109 / .245	0.233
Intention to drop out (University)			
Social Integration → SRL	.030	-.010 / .069	------
Expectations → SRL	.153***	.089 / .214	0.140
Satisfaction → SRL	.212***	.148 / .275	0.272
Intention to remain (Course)			
Social Integration → SRL	.071***	.042 / .098	0.122
Expectations → SRL	.101***	.065 / .137	0.153
Satisfaction → SRL	.185***	.142 / .228	0.242
Intention to remain (University)			
Social Integration → SRL	.072***	.043 / .102	0.123
Expectations → SRL	.114***	.076 / .150	0.166
Satisfaction → SRL	.181***	.134 / .228	0.237

Note. SRC = Standardized Regression Coefficient; EE = Error of Estimation; f^2 = Effect Size; $f^2 \geq 0.02$ small, $f^2 \geq 0.15$ medium, $f^2 \geq 0,.5$ large; LCI-UCI = Lower Confidence Interval-Upper Confidence Interval. * $p < .05$. ** $p < .01$. *** $p < .001$.

The data suggest that there is complete mediation of the intention to drop out and partial mediation in the intention to remain. On the one hand, we confirmed that academic engagement (via its three components of vigor, absorption, and dedication) fully mediates the effect of the three independent variables (social integration, satisfaction, and expectations) on SRL in the Intention to drop out of the course model and the Intention to drop out of university model. On the other hand, we have not been able to confirm that hypothesis for the intention to remain models. More specifically, we found that, although the mediation of engagement was complete for the effect of expectations on SRL (via the three engagement dimensions), there was only partial mediation for social integration and satisfaction (and in the case of social integration, only through vigor). Our results seem to indicate that in students who want to continue with their university courses, there are other types of variables that the study has not considered that may be mediating the relationship between those variables and the use of SRL.

In this regard, the data from studies such as Peña-Vázquez et al. (2023) seem to run in the same direction. In that study, the authors found that students with greater engagement and greater satisfaction with the courses they were doing had less intention of dropping out. In addition, they found that the relationship between those two variables was in itself associated with academic success, as students who were more satisfied with the courses they were doing were usually more motivated and engaged with their education, produced better academic performance, and therefore, were more likely to finish their courses and graduate. These types of studies suggest that, to a certain extent, students who remain on their courses do it because other variable relationships come into play that our study did not examine, such as motivation, academic performance, and resilience (Ayala & Manzano, 2018).

Finally, the amount of intermediate and final variance explained was similar in both intention to drop out and intention to remain models with regard to the final variable (SRL), while it was more limited for the mediating variable (engagement). It is worth pointing out that the explained variance of the "dedication" component was much higher in students who were intending to drop out than those who were not (60% and 61.5% for those with intentions to drop out of their course and university, respectively, compared to 42.7% and 47.3% for those wanting to remain on their course or at their university, respectively).

The results of our study have both theoretical and practical implications. In terms of theoretical implications, we are exam-

ining the conceptualization of an interactionist model of dropout and remaining (on the course and at the university), returning to the theoretical foundations of the American authors Spady (1971) and Tinto (1975), who proposed retention a new analytical approach to understanding dropout. It is also worth mentioning the updating of those authors' 1970s models, as our study aimed to analyze the variables that were important in those models (such as academic satisfaction and social integration) together with the interaction with other variables that have been shown to be important when it comes to understanding university students dropping out nowadays. These include student engagement with their courses and the use of SRL strategies. Engagement has gained importance as a variable during the beginning of the 21st century due to its relation to the variables proposed in the classic models. So the greater the social integration, the greater the academic satisfaction, reaffirming the students' institutional engagement (Donoso & Schiefelbein, 2007; Himmel, 2002) and making it more likely that they remain on their courses. Over the same period there has been a qualitative leap in studies on SRL strategies (Zimmerman, 2000), which have become even more important in recent years as a result of the paradigm shift heralded by the EHEA, in which students' active roles in their teaching-learning processes is considered the foundation for meaningful, quality learning. Hence, this variable, which as our study indicates, is related to dropping out, has been considered in current educational proposals. In this way, the variables proposed in the present study may be considered in future research that could look more deeply into the relationship between these and other variables of interest in order to explore and analyze this phenomenon more fully.

In terms of practical implications, this model proposes an approach to understanding which variables may be more important depending on whether students want to drop out or whether they want to remain, bearing in mind that the results were different for the remain group. The model may provide new indicators for higher education institutions for a deeper awareness of different variables within the teaching-learning process, in order to put actions into place to reduce drop out. For example, by identifying specific patterns between students who show more likelihood of remaining, universities may be able to tailor their support strategies and resources to optimize academic performance and reinforce student retention. The model may also be used to develop early interventions, such as tutoring programs, tailored academic guidance counselling, or study skill development initiatives, aimed at students who exhibit signs that they may be

at risk of dropping out. In addition, the information the model provides may guide more efficient institutional resource allocation, focusing on critical areas that significantly influence academic engagement. Ultimately, this study may contribute to promoting a more personalized educational environment that is adapted to promote retention and long-term academic success for its students.

Limitations

The study has some notable limitations that need to be considered when examining the results and their implications. Firstly, some of the results may be related to the time at which the study was done, meaning that future studies need to consider applying longitudinal designs to determine whether the influence of the variables changes according to students having exams or the number of credits they need to finish their first year. In addition, future research should consider the same variables as in our study, along with other types of variables, in order to see whether other conditions might mediate the effects found in this study in the students whose intention was to remain on their course.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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References

Abreu-Alves, S., Sinval, J., Lucas-Neto, L., Marôco, J., Gonçalves-Ferreira, A., & Oliveira, P. (2022). Burnout and dropout intention in medical students: the protective role of academic engagement. *BMC Medical Education*, 22(83), 1–11. https://doi.org/10.1186/s12909-021-03094-9

Arbuckle, J. L. (2013). *Amos 22 user's guide*. SPSS.

Ayala, J. C., & Manzano, G. (2018). Academic performance of first-year university students: The influence of resilience and engagement. *Higher Education Research & Development*, 37(7), 1321–1335. https://doi.org/10.1080/07294360.2018.1502258

Bean, J., & Eaton, S. B. (2001). The Psychology underlying successful retention practices. *Journal of College Student Retention: Research, Theory and Practice*, 3(1), 73–89. https://doi.org/10.2190/6R55-4B30-28XG-L8U0

Bernardo, A. B., Esteban, M., Cervero, A., Tuero, E., & Herrero, F. J. (2022). Validation of the Early University Dropout Intentions Questionnaire (EUDIQ-R). *Journal of Higher Education Theory and Practice*, 22(10), 17–29. https://doi.org/10.33423/jhetp.v22i10.5384

Cervero, A., Bernardo, A. B., Esteban, M., Tuero, E., Carbajal, R., & Núñez, J. C. (2017). Influence on university dropout of relational and social variables. *Revista de Estudios e Investigación en Psicología y Educación*, Extr, 12, 46–49. https://doi.org/10.17979/reipe.2017.0.12.2531

Donoso, S., & Schiefelbein, E. (2007). Análisis de los modelos explicativos de retención de estudiantes en la universidad: una visión desde la desigualdad social. *Estudios Pedagógicos*, 33(1), 7–27. https://doi.org/10.4067/S0718-07052007000100001

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. https://doi.org/10.1016/j.learninstruc.2016.02.002

Gilardi, S., & Guglielmetti, C. (2011). University life of non-traditional students: Engagement styles and impact on attrition. *The Journal of Higher Education*, 82(1), 33–53. https://doi.org/10.1353/jhe.2011.0005

Gravetter, F. J., & Wallnau, L. B. (2014). *Statistics for the behavioral sciences*. Wadsworth.

Himmel, E. (2002). Modelos de análisis para la deserción estudiantil en la educación superior. *Calidad de la Educación*, 17, 91–108. https://doi.org/10.31619/caledu.n17.409

Íñiguez, T., Elboj, C., & Valero, D. (2016). La universidad del Espacio Europeo de Educación Superior ante el abandono de los estudios de grado. Causas y propuestas estratégicas de prevención. *Educar*, 52(2), 285–313.

Marôco, J., Assunção, H., Harju-Luukkainen, H., Lin, S. W., Sit, P. S., Cheung, K. C., Maloa, B., Ilic, I. S., Smith, T. J., & Campos, J. A. D. B. (2020). Predictors of academic efficacy and dropout intention in university students: Can engagement suppress burnout? *PLoS ONE*, 15(10), 1–26. https://doi.org/10.1371/journal.pone.0239816

Mega, C., Ronconi, L., & De Beni, R. (2014). What makes a good student? How emotions, self-regulated learning, and motivation contribute to academic achievement. *Journal of Educational Psychology*, 106(1), 121–131. https://doi.org/10.1037/a0033546

Ministerio de Universidades. (2023). *Datos y cifras del Sistema Universitario Español. Publicación 2022-2023*. Secretaría General Técnica del Ministerio de Universidades.

Ojeda, L., Flores, L. Y., & Navarro, R. L. (2011). Social cognitive predictors of mexican american college students' academic and life satisfaction. *Journal of Counseling Psychology*, 58(1), 61–71. https://doi.org/10.1037/a0021687

Organisation for Economic Co-operation and Development. (2019). *Education at a glance 2019: OECD indicators*. OECD Publishing. https://doi.org/10.1787/f8d7880d-en

Ortiz-Lozano, J. M., Rua-Vieites, A., Bilbao-Calabuig, P., & Casadesús-Fa, M. (2018). University student retention: best time and data to identify undergraduate students at risk of dropout. *Innovations in Education and Teaching International*, 57(1), 74–85. https://doi.org/10.1080/14703297.2018.1502090

Panadero, E., & Alonso-Tapia, J. (2014). Teorías de autorregulación educativa: una comparación y reflexión teórica. *Psicología Educativa*, 20(1), 11–22. https://doi.org/10.1016/j.pse.2014.05.002

Parra, P., & Pérez-Villalobos, C. (2010). Propiedades psicométricas de la escala de compromiso académico, UWES-S (versión abreviada), en estudiantes de psicología. *Revista de Educación y Ciencias de la Salud*, 7(2), 128–133.

Peña-Vázquez, R., González Morales, O., Álvarez-Pérez, P. R., & López-Aguilar, D. (2023). Construyendo el perfil del alumnado con Intention to drop out de los estudios universitarios. *Revista Española de Pedagogía*, 81(285), 291–315. https://doi.org/10.22550/REP81-2-2023-03

Schaufeli, W. B., & Bakker, A. B. (2003). *Utrecht Work Engagement Scale*. Utrecht University.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 15–34). Psychology Press.

Sosu, E. M., & Pheunpha, P. (2019). Trajectory of university dropout: Investigating the cumulative effect of academic vulnerability and proximity to family support. *Frontiers in Education*, 4(6), 1–10. https://doi.org/10.3389/feduc.2019.00006

Spady, W. (1971). Dropouts from higher education: an interdisciplinary review and synthesis. *Interchange, 1*, 64–85.

Sun, J. C. Y., Oh, Y. J., Seli, H., & Jung, M. (2017). Learning behavior and motivation of at-risk college students: The case of a self-regulatory learning class. *Journal of At-Risk Issues*, 20(2), 12–24.

Tight, M. (2019). Student retention and engagement in higher education. *Journal of Further and Higher Education*, 44(5), 689–704. https://doi.org/10.1080/0309877X.2019.1576860

Tinto, V. (1975). Dropout from higher education: a theoretical synthesis of recent research. *Review of Educational Research*, 45, 89–125. https://doi.org/10.3102/003465430450010

Tinto, V. (2005). Student retention: what next? In *National Conference on Student Recruitment, Marketing, and Retention*. http://bit.ly/2XWPQ7P

Torrado, M., & Figuera, P. (2019). Estudio longitudinal del proceso de abandono y reingreso de estudiantes de ciencias sociales. El caso de administración y dirección de empresas. *Educar*, 55(2), 401–417.

Truta, C., Parv, L., & Topala, I. (2018). Academic engagement and intention to drop out: Levers for sustainability in higher education. *Sustainability*, 10(4637), 1–11. https://doi.org/10.3390/su10124637

Véliz-Palomino, J. C., & Ortega, A. M. (2023). Dropout intentions in higher education: Systematic literature review. *Journal on Efficiency and Responsibility in Education and Science*, 16(2), 149–158. https://doi.org/10.7160/eriesj.2023.160206

Viale, H. (2014). A theoretical approach to the college student drop out. *Revista Digital de Investigación En Docencia Universitaria*, 8(1), 59–74. https://doi.org/10.19083/ridu.8.366

Wang, M. T., & Eccles, J. S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a multidimensional perspective. *Learning and Instruction*, 28, 12–23. https://doi.org/10.1016/j.learninstruc.2013.04.002

Willcoxson, L. (2010). Factors affecting intention to leave in the first, second and third year of university studies: A semester-by-semester investigation. *Higher Education Research & Development*, *29*(6), 623–639. https://doi.org/10.1080/07294360.2010.501071

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–40). Academic Press. https://doi.org/10.1016/B978-012109890-2/50031-7