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University of Jaén,
Spain
Zanda Rubene,
University of Latvia,
Latvia

*CORRESPONDENCE
Pilar Ibáñez-Cubillas
✉ pcubillas@uma.es

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Multicausal analysis of the dropout of university students from teacher training studies in Andalusia

Pilar Ibáñez-Cubillas^{1*}, Slava López-Rodríguez²,
Isabel Martínez-Sánchez³ and José Álvarez Rodríguez⁴

¹Didactic and School Organization Department, Faculty of Education Sciences, University of Málaga, Málaga, Spain, ²Didactics of Languages and Literature Department, Faculty of Education and Sports Sciences, University of Granada, Melilla, Spain, ³Department of Research Methods and Diagnosis in Education I, Faculty of Education, National University of Distance Learning, Madrid, Spain, ⁴Pedagogy Department, Faculty of Education, University of Granada, Granada, Spain

To give an answer and a solution to the inconveniences that dropout brings to universities and to society, we have studied the different approaches that exists in the actual scientific literature about the reasons of this phenomenon. The aim of this investigation is analyzing the college dropout, focalizing in students of education degrees of Andalusian universities. For doing that, we applied a standardized instrument that pretend to determine which are the factors associated to the permanence of the college students. The instrument was applied to 608 students of the first year of six Andalusian universities. Of these, 274 were studying Infant education degree and 334 Primary education degree. The study shows that a large sample of the subjects interviewed responded with higher scores 3.83, stating the need to remain in their undergraduate studies, with few references to dropping out of the university. Some of the items that have obtained the highest ratings express their desire to graduate with honors, become a good professional and practice their profession within their field of work, among others.

KEYWORDS

higher education, predictors, dropout, teaching staff, Andalusian universities

1. Introduction

This article comes from the research with reference B-SEJ-516-UGR18 approved in the call for projects I + D + i FEDER Andalucía 2014–20. University dropout has serious consequences at the social and institutional level, but also for the student who quits the university, therefore, the high number of students who drop out remains one of the main problems of university institutions, as well as a concern worldwide. This phenomenon is of great interest because of the need to address its consequences and, although it has been extensively studied, there is a need to broaden the understanding of the context in which it occurs. In this regard, it should be noted that dropout does not behave in the same way in every country, institution, or generation, as the social, cultural, economic, political, or religious factors that shape the reality differ in each context. However, to analyze the phenomenon in a particular context, it is important to take the scientific literature as a reference point, in which the types of drop-out, their causes and consequences, as well as the variables, factors or patterns that indicate the student's decision making, are set out.

University dropout is a diverse and nuanced concept (Behr et al., 2020) but commonly understood in this study as “situations where a student leaves the university study in which (s)he has enrolled before having obtained a formal degree” (Larsen et al., 2013). In this sense, temporary interruption of academic activity or change of degree is excluded. In this sense, it must be understood that the

student enters university with the intention of completing the degree and obtaining a graduate degree, however, different reasons or cases may cause them to drop out. Thus, the factors and determinants involved in dropping out of university studies have led to different theoretical models and multiple classifications. The most prominent and currently widely accepted model is Tinto's (1978, 1998) explanatory model of university dropout, as it stresses the need to take a holistic approach to studying and intervening in university dropout. According to this model, students, upon entering university, interact with the academic and social system, whose level of integration modifies students' initial institutional commitment, goals and intentions, which in turn determines the decision to stay or drop out of university. Therefore, and according to Fernández-Mellizo's classification (2022, p. 9), the factors that explain university dropout are divided into: (a) individual factors, which include demographic (gender, age), socioeconomic (social, economic, cultural situation) and academic factors (previous educational experience and academic expectations); (b) factors of student interaction with the university that result in academic integration, mainly referring to academic performance, and social integration, which refers to the degree of participation and institutional commitment of the student. And finally, (c) institutional factors, referring to the elements that make up the institution itself, such as infrastructures, resources, quality of teaching, etc.

As a result, dropout seems to be the result of a set of interacting variables, since during a long decision-making process, several problems or variables accumulate and drive the student to leave university without a degree. Thus, determining the causes that lead students to drop out is not always easy, nor is their willingness to do so, which is why numerous studies have been conducted to determine the most important causes and variables, as well as their degree of interaction and influence on the final decision (Lizarte, 2017; Vergara et al., 2017; Sosu and Pheunpha, 2019).

First-year students are the most vulnerable and at the highest risk of university dropout, as they have the highest dropout rates (Tinto, 2010; Blair, 2017; Hernández Rosell and Pérez Pérez, 2019; Casanova et al., 2021). During university entrance, some students encounter great difficulties in the process of transition and adaptation to the university context, as they must face academic, social and emotional demands. Thus, during the first year, it is a challenge for students to understand the academic learning process, as they must learn to manage time, develop academic and information literacy skills, learn how to learn or learn to interact appropriately with academic staff (Blair, 2017). This, coupled with the pressure on students to interact with peers to choose the friends with whom they will share academic tasks and spend much of their time at university, as well as having unsatisfactory social and academic experiences during the first year, leads to students' diminished ability to perform and adapt to the university context, which increases the likelihood of dropping out (Hernández Rosell and Pérez Pérez, 2019; Casanova et al., 2021). Therefore, the higher the academic performance and social integration, the less likely the student is to drop out (Tinto, 1978, 1998).

Thus, the absence of support during the transition to higher education, lack of or restricted access to university infrastructure, resources or services, students' difficulties in managing challenges during the first year, academic burnout, being a victim of bullying or cyberbullying, or negative emotional, cognitive and behavioral experiences affect student well-being (Blair, 2017; Wilcox and Nordstokke, 2019; Bernardo et al., 2020; Casanova et al., 2021) and act as predictors of

dropout, while participation in class or institutional groups, positive relationships with teachers and friends, academic satisfaction or satisfaction with the degree they are taking (Cervero et al., 2017; Wilcox and Nordstokke, 2019; Behr et al., 2020; Casanova et al., 2021; Álvarez Ferrándiz et al., 2022) act as elements of institutional persistence. In fact, several authors consider that adaptation and social integration in the university context is an essential variable for predicting university dropout (Blair, 2017; Cervero et al., 2017; Hernández Rosell and Pérez Pérez, 2019; Casanova et al., 2021). Although Portal Martínez et al. (2022) add economic difficulties as a determining factor that currently influences university dropout, as it prevents the financing of study-related expenses. Thus, those students who pay for their studies thanks to scholarships or with the help of their parents are less likely to drop out.

2. Materials and methods

2.1. Some data on dropouts in higher education

Dropping out of higher education is a phenomenon of great relevance at a global level due to the high rates it presents, a reality that can be observed in 180 countries, as stated by the International Association of Universities (Cabrera et al., 2006). For the 2020 cohort, the Organization for Economic Co-operation and Development records an average university dropout rate of 32%. Among OECD countries, the United Kingdom and Switzerland stand out for their low dropout rates, which do not exceed 20%. However, in countries such as Brazil, Colombia and Italy, the university dropout rate is around 50%. In the case of Spain, a total of 28% university dropout rate is recorded (OECD, 2022).

Regarding the European context, the results of some of the studies on dropout in Higher Education are shown below. Thus, the data provided by the Ministry of Education and Vocational Training in 2020 and 2021 show the university dropout rates of each of the countries that make up the European Union. The countries with the highest university dropout rates in 2020 are Spain with 31.8%, followed by Romania with 31.3% and Italy with 26%. However, according to the data for the year 2021, Spain has managed to reduce the university dropout rate by 5.4%, reaching the figure of 26.4%, while Romania and Italy have only reduced the university dropout rate by 0.7% in both cases. On the other hand, the European country with the lowest incidence of dropout in 2020 was Croatia (4.4%) but it moved to second place with 4.8% in 2021, as Ireland (10.1% in 2020) reduced dropout to 4.4% in 2021. Despite the reduction of the dropout rate in some countries, the European Union, in the framework of the Europe 2020 Strategy, has proposed as a strategic objective to reduce the dropout rate among 18–24 years old to below 10% (Ministry of Education and Vocational Training, 2020).

As has been shown, the data provided by different institutions/organizations show very high percentages in the Spanish context, generating concern as these results are above the average of the countries that make up the OECD. In fact, in the data for the year 2021, the figure for university dropout (in young people aged 18 to 24) is 16.7% for men and 9.7% for women, placing Spain in second place in the ranking of all the countries that make up the European Union (EU) with the highest dropout figures after Romania, although, in the year 2020 these figures amounted to 20.2% for men and 11.6% for women, occupying first place in the ranking of the EU [Instituto Nacional de Estadística (INE), 2020].

On the other hand, the latest report of the [Ministry of Universities \(2022\)](#) reveals that the dropout rate of the 2017–2018 cohort of new entrants to higher education (Bachelor's Degree) is 13%, a result obtained by subtracting the 21.3% who dropped out in the first year minus the 8.3% who changed to another degree within the Spanish University System (SUE). However, these figures may lead to a misunderstanding due to certain variables that must be taken into account, for example, whether we are talking only about on-site universities (16.5%) or off-site universities (43.47%); public universities (21.7%) or private universities (19.3%), and even by branch of knowledge, since degrees belonging to the branches of Arts and Humanities (27.5%), Engineering and Architecture (25%) and Sciences (21.7%) have a higher drop-out rate than those belonging to the branches of Social and Legal Sciences (20.3%) and Health Sciences (16.6%) ([Ministry of Universities, 2022](#)).

2.2. Drop-out rates in Andalusia and in the teacher training degree at the University of Granada

In terms of dropout rates in Spain, limited to each of the Autonomous Communities, and taking as a reference the on-site and public universities and only the data for both dropouts and degree changes for the 2017–2018 cohort, the Balearic Islands (37.1%) is the

community with the highest university dropout rate, followed by Asturias (35%) and the Canary Islands (31.3%). At the opposite extreme is Extremadura with the lowest dropout rate (20.5%), followed by Navarra (23.3%) and Madrid (23.5%) ([Ministry of Universities, 2022](#)). To be able to see the evolution of dropout rates in Spain, some data are collected to illustrate the need to continue working on and studying this phenomenon, which causes major problems in public universities and, consequently, in private universities (see [Table 1](#)):

Similarly, and taking the variables indicated in the previous paragraph as a reference, the data for the 2017–2018 cohort (aged 18 to 24) show a university dropout rate of 24.6% in Andalusia, placing it in seventh position among the Autonomous Communities with the lowest dropout rate (see [Table 1](#)). Since then, the drop-out rate in Andalusia has gradually decreased (21.6% in 2019 and 21.8 in 2020) to reach a figure of 17.7% ([Instituto de Estadística y Cartografía de Andalucía, n.d. a, b](#)). In the Andalusian context, in the ranking of the 9 Andalusian public and on-campus universities, the University of Cadiz occupies the first position with the highest drop-out rate (36.3%), followed by the University of Huelva (35%) and the University of Almeria (28.8%). Between fourth and sixth position are the University of Malaga (28.4%), the University of Seville (26.1%) and the University of Jaen (25.5%). Between seventh and eighth position are the University of Cordoba (24.3%) and the University of Granada (22.4%) with lower values, with the University of Pablo de Olavide being the university with the lowest dropout rate (14.2%) ([U-Ranking, 2022](#)).

TABLE 1 Partial dropout and change rates in the first year of undergraduate studies by autonomous community and type of university.

	Total		Public universities		Private universities	
	Dropout in the first year of the degree	Change of program in the first year	Dropout in the first year of the degree	Change of program in the first year	Dropout in the first year of the degree	Change of program in the first year
Total	21.3	8.3	21.7	8.8	19.3	6.2
On-site Universities	16.5	8.3	16.9	8.6	14.2	6.6
Andalusia	16.8	7.8	16.8	7.8	19.2	11.9
Aragon	16.2	7.6	16.6	7.8	12.1	5.0
Asturias	23.5	11.5	23.5	11.5		
Balearic island	25.2	11.9	25.2	11.9		
Canary Islands	21.6	9.0	22.2	9.1	6.6	4.3
Cantabria	18.4	9.0	17.8	9.2	20.6	8.0
Castilla la Mancha	18.0	8.9	18.0	8.9		
Castilla y León	16.2	7.5	16.5	8.4	15.1	4.2
Catalonia	16.8	9.0	17.1	9.3	14.8	7.0
Valencia	15.4	7.4	15.9	7.7	12.6	5.5
Extremadura	14.0	6.5	14.0	6.5		
Galicia	18.0	8.3	18.0	8.3		
Madrid	14.8	8.4	14.8	8.7	14.5	7.5
Murcia	18.3	9.5	19.9	11.0	14.7	6.2
Navarra	14.5	7.4	15.3	8	13.9	6.9
Basque Country	14.5	7.4	15.9	8.1	10.8	5.3
La Rioja	18.7	9.1	18.7	9.1		
Non-attendance universities	43.4	8.7	50.3	10.3	29.9	5.4

New entry cohort 2017–2018. Spanish University System Facts and Figures Report. Publications 2021–2022 ([Ministry of Universities, 2022](#)).

TABLE 2 Drop-out rates in primary education and early childhood education degrees at the University of Granada.

	Bachelor's degrees in primary education			Bachelor's degrees in early childhood education		
	2018/2019	2019/2020	2020/2021	2018/2019	2019/2020	2020/2021
Granada	11.92%	14.48%	11.76%	7.64%	12%	8.15%
Ceuta	40.68%	44.44%	48.35%	38.64%	31.71%	26.79%
Melilla	25.45%	21.62%	32.14%	24.14%	37.5%	30.77%

Own elaboration based on University of Granada [s/f a (n.d.), s/f b (n.d.), s/f c (n.d.), s/f d (n.d.), s/f e (n.d.), s/f f (n.d.)].

The University of Granada is the second Andalusian university with the lowest dropout rate of 22.4%, which implies a retention rate of 77.6%. The University of Granada offers a total of 77 degrees and double degrees (63 + 14), among which are the degrees in Primary Education and Early Childhood Education offered at the Granada Campus, as well as in the autonomous cities of Ceuta and Melilla. Thus, Table 2 shows the dropout rate of the bachelor's Degrees in Primary and Early Childhood Education taught at the different campuses between 2018 and 2021. The minimum university dropout rate for the bachelor's degree in Primary Education (Granada) is 11.76% in the academic year 2020/2021, although it only varies by 0.16% with respect to the academic year 18/19. On the other hand, the Ceuta campus has the highest dropout rate of almost 50% in the last three academic years, although Melilla also has high values of up to 32.14% in 2020/2021. However, the bachelor's degree in Early Childhood Education (Granada) has the lowest university dropout rates with respect to the campuses where it is taught and compared to the figures for the bachelor's degree in Primary Education, with a figure of 7.64% in the 2018/2019 academic year, although it increases by 0.51% in the 2020/2021 academic year. On the other hand, the Ceuta and Melilla campuses have a high dropout rate with very similar figures for the period between 2018 and 2021.

From a global point of view, Table 2 shows that in the last 3 years both the bachelor's degree in Primary Education and the bachelor's degree in Early Childhood Education taught in Granada have the lowest university dropout rates, while Melilla and Ceuta, specifically, reach very high figures. Finally, it is worth mentioning that the highest dropout rates in both degrees are grouped in academic year 19/20 (except for the Degree in Primary Education in Melilla –21.62%– and Early Childhood Education in Ceuta –31.71%), an academic period that coincides with the COVID19 pandemic.

Consequently, this study carries out a multi-causal analysis of university dropout in Primary Education and Early Childhood Education students from five Andalusian Universities.

2.3. Method

2.3.1. Objectives

The study presented here is part of the research project on academic dropout in Andalusian universities, financed by FEDER funds.

This study aims to determine the causes of academic dropout in early childhood and primary education degrees at Andalusian universities from a predictive and diagnostic perspective of the groups at risk.

2.3.2. Process

The study consisted of applying an instrument to diagnose the risk of dropping out of university studies in Early Childhood Education and

Primary Education to a sample of first-year university students at universities in Andalusia, selecting the University of Granada (UGR, Granada and Ceuta), the University of Jaén (UJA), the University of Pablo de Olavide (UPO), the UCM, and the University of Seville (US). Following Kehm et al. (2019), academic dropout in higher education is most prevalent during the first year, so the research is focused on this moment. The tool was distributed at the beginning of the second semester so that students would have had a preliminary 6-month contact with the degree program, which is essential for them to understand whether their expectations regarding the academic process are realistic, as well as to get to know and integrate socially and academically into the institution.

To recruit participants, the questionnaire was distributed to entire groups of students whose professor showed interest in collaborating with our research. The sampling technique, therefore, consists of the distribution of the research instrument by convenience, akin to the non-probability sampling process.

2.3.3. Instrument

The "Survey on successful student retention" by Velázquez and González (2017), which the authors applied to a population of nursing students at the Unidad Académica Multidisciplinaria Matamoros of the Universidad Autónoma de Tamaulipas, was used to detect subjects at risk of academic dropout.

The instrument has been succinctly adapted to adequate the wording to the Spanish context, excluding two of the 73 items proposed by the authors as they were considered not operative in the context of the exploration. Consequently, the tool applied consisted of a survey made up of 71 items, completed with 6 questions to collect some socio-demographic data on the participants, making a total of 77 items. The items that make up the Velázquez and González (2017) questionnaire present a 5-degree Likert-type scale in which students rank themselves according to their degree of agreement or disagreement with the statement presented to them. In relation to the socio-demographic questions, these are open-ended, although they are subsequently coded under stricter categories for their treatment in the data analysis.

The selection of the Velázquez and González (2017) instrument responds to the interest of the education system in anticipating this phenomenon and acting preventively, articulating actions that have a positive impact on the persistence of students because this instrument makes it possible to determine potential factors that condition academic dropout and, in the light of these, which groups could be at greater risk of suffering from it due to their particular characteristics.

The instrument developed by Velázquez and González (2017), distributes the items around four factors which, in turn, are broken down into 12 categories from which the individual's commitment to their academic project could be interpreted in a positive sense and, from a negative prism, the risk of failure. These factors, associated with their

TABLE 3 Factors and categories of student permanence in the university persistence survey.

Factor	Categories
Motivation	Internal (intrinsic motivation):
	• Personal goals
	• Expectations of success
	• Self-concept
	External (extrinsic motivation):
	• By the instructor in the classroom
Commitment	Personal commitment to study:
	• Self-efficacy Academic performance within the university pathway.
	• Perception of difficulty
	Perceived commitment to the institution:
	Degree quality
	• Academic services
Attitude and behavior	Academic integration:
	• Sense of belonging
	• Relationship with academic authorities
	• Relationship with peers
Socio-economic conditions	• Social and family interaction
	• Economic conditions

categories, are shown in Table 3 and are as follows: motivation, commitment, attitude and behaviour, and socio-economic conditions. For **Original Research Articles**, **Clinical Trial Articles**, and **Technology Reports** the introduction should be succinct, with no subheadings. For **Case Reports** the Introduction should include symptoms at presentation, physical exams, and lab results.

3. Results

3.1. Elements of dropout risk

The overall mean score achieved for the whole set of items for the entire sample is 3.83, i.e., the surveyed student population seems to be oriented toward persistence in studies rather than dropping out.

There are only three items that do not reach the mean score of 3.00, which might suggest the existence of a certain level of dissatisfaction with the student’s personal situation in the degree program. Table 4 shows the seven items with the lowest scores, emphasizing that six of

TABLE 4 Items with lower scores for early childhood education and primary education qualifications.

	Item	Mean	Deviation
2	My teachers use assessment strategies that encourage my creativity.	2.8311	1.09182
4	My teachers care about my performance.	2.9102	1.16562
7	In general, I feel motivated by my teachers.	2.9300	1.07458
19	I participate actively in class.	3.0062	1.15707
6	I feel that my effort is recognized by my teachers.	3.0639	1.19364
26	I consider my career to have a high degree of difficulty.	3.1862	0.96344
37	My course coordinator takes action to ensure that there are no free hours between classes.	3.2127	1.62078

Own elaboration.

these correspond to neurodidactic factors and only the last one is of an organizational nature.

From the opposite point of view to that previously presented, Table 5 shows the items which are related to the student’s persistence, i.e., those items in which the highest scores are achieved. These persistence-oriented items refer to the achievement of objectives, the accomplishment of planned tasks and the learner’s self-concept. It should be emphasized that the three items with the highest scores are related to the professional dimension.

The results of a regression model to determine the influence of the factors on retention are shown (Table 6). The model measures the interaction on the following items of the instrument:

- 8. I am interested in getting an outstanding grade in my subjects.
- 25. If I have difficulty with a subject, I consult additional literature or seek advice to clear up my doubts.
- 65. I have never interrupted my studies for one semester or more.
- 66. I have never considered suspending my university studies either temporarily or permanently.
- 67. I have taken all my subjects as a student assistant within the University.
- 69. I am up to date with my English language proficiency levels.
- 70. I have never failed one or more subjects for not complying with the compulsory percentage of attendance.
- 71. I attend classes regularly and punctually.

From the Model, to measure the factors of belonging, we observe that the multiple correlation coefficient $R=0.468547\%$ correlation between the regressor variables that make up the model, which is fine as it is not too high (close to 1) and with this a high correlation, increases the problem of multicollinearity, which in this model is discarded. Furthermore, the $R^2=0.219$ 22% of total variability explained by the model, similarly the adjusted $R^2=0.208$, 21%, finally the standard error of 1.398 (which is the standard deviation of the error scores). Out of a total of 562 observations (Tables 7, 8).

We note that the critical value is $\text{Sig.} = 0.00 < 0.05$, which indicates that the proposed model is significant.

Multiple linear model proposed: $Y=0.475+0.206 \times_8 - 0.017 \times_{25} + 0.017 \times_{65} + 0.139 \times_{66} + 0.104 \times_{67} + 0.119 \times_{69} + 0.245 \times_{70} - 0.028 \times_{71}$.

TABLE 5 Items with the highest scores in early childhood education and primary education qualifications.

N°	Item	Mean	Deviation
9	I want to graduate with honors.	4.9131	0.46481
11	Being a good professional is a personal goal	4.8530	0.49273
12	I wish to work in my profession after completing my studies.	4.7701	0.76274
53	I respect the lines of authority within the educational institution.	4.7014	0.64492
67	I have taken all my subjects as a regular student within the university.	4.6974	0.82768
52	I maintain a respectful and cordial relationship with the school authorities (teachers, coordinators, administrative staff, etc.).	4.6653	0.66962
42	My relationship with my family is cordial and respectful.	4.5958	0.80223
61	In my home I have adequate spaces, services, and equipment for schoolwork.	4.5708	0.80741
59	I am a person free of violence.	4.5546	1.12795
10	Finishing my studies on time is fundamental for me.	4.5470	0.85166
51	I am proud of the career I am studying.	4.5469	0.90871
71	I attend classes regularly and punctually.	4.5421	0.79175
55	I have established friendships with some of my classmates.	4.5230	0.91943
32	The library has the bibliographic material I need for my subjects.	4.5160	1.05431
48	I feel morally supported by my family members.	4.5146	0.90701
18	I fulfil the tasks I am given in the different subjects.	4.5087	0.74617

Own elaboration.

TABLE 6 Regression values associated with permanence factors.

Regression statistics	
Multiple correlation coefficient	0.468528958
Coefficient of determination R^2	0.219519385
Adjusted R^2	0.208228526
Standard error	1.398606845
Observations	562

4. Discussion and conclusion

According to studies such as Aina et al. (2021) or Contini and Zotti (2022), the search for mechanisms to induce the reduction of academic dropout in higher education has led the education system to rely on various sciences, such as sociology, statistics, or neuroscience to investigate academic dropout. These disciplines have improved the understanding of the problems faced by students during the university stage to reduce dropout rates (Kehm et al., 2019). In the contemporary context, the university must adopt those criteria and practices that facilitate student engagement in the academic process to foster the acquisition of the skills and competences that society demands (Mendoza et al., 2019).

The research has focused on understanding what factors contribute to predicting academic dropout in Early Childhood and Primary Education majors, taught in Andalusian universities, by conducting a questionnaire adapted from Velázquez and González (2017) on student retention in higher education. The questionnaire allows (at least) a double interpretation, so that it shows which factors are associated with the academic engagement of students in the university stage and those indicators that reveal a situation of risk. From a positive perspective, the factors related to the professional sphere are the most favorably valued in this research, which are related to the expectations that young people associate with their training, their vocation, and their self-concept in the academic sphere. These results are consistent with those of Bardach et al.

(2020), who found in their research that attrition was linked to the information available about the degree and the students' beliefs about it. The greater the coherence between students' expectations and the academic reality they are exposed to when they enter university, the less likely they are to drop out, which may explain the results of this study, which document that future teachers value these dimensions very positively. The characteristics of this university specialization and the profession for which it qualifies are clearly known by most of the students, which improves their commitment to their training, influencing them to adopt adaptive patterns that keep them linked to the university system, which brings them closer to their personal goals, aligned with their vocation.

On the contrary, the results with lower scores, which reveal the existence of a potential risk of dropping out of the educational system, show the influence of neurodidactic factors on academic dropout, and conditioning it. Consequently, strategies that induce a change in these variables could encourage students' commitment to their academic process, contributing to the reversal of the problem identified.

In recent years, the neurodidactic strategies that have been pioneered in higher education have led to a major transformation of the model, directing it towards a more innovative, active paradigm committed to the promotion of a series of competences and skills that are articulated in a more flexible and individualized way. In line with the results of this study, there are several dimensions that can be addressed to contribute to the reduction of university dropout. In particular, the use of assessment strategies in line with student characteristics, the greater orientation of the educational system towards student performance or the use of extrinsic motivation strategies involving teachers are the most urgent actions, given that these three areas coincide with the items with the lowest scores in the research population. Likewise, the implementation of strategies that encourage student participation in the classroom and positive feedback to students so that they can feel recognized are complementary actions that can prevent academic dropout (Costa et al., 2018; Casadiego et al., 2022; Tete et al., 2022). Specifically, research by Casadiego et al. (2022) has revealed that students who were recipients of more participatory teaching processes, such as those based on active methodological approaches,

TABLE 7 Analysis of variance.

Analysis of variance					
	Degrees of freedom	Sum of squares	Mean squares	F	Critical value of F
Regression	8	304.247,618	38.0309522	19.4422221	0.0000
Residuals	553	1,081.72391	1.95610111		
Total	561	1,385.97153			

TABLE 8 Coefficient of the model.

	Model coefficients					
	Coefficients	Standard error	t-statistic	Probability	Lower 95%	Upper 95%
Interception	0.475	0.472	1.007	0.315	-0.452	1.402
8. I am interested in obtaining an outstanding grade in my subjects.	0.206	0.068	3.023	0.003	0.072	0.340
25. If I have difficulty with a subject, I consult additional literature or seek advice to clear up my doubts.	-0.017	0.047	-0.352	0.725	-0.109	0.076
65. I have never interrupted my studies for one semester or more.	0.077	0.052	1.495	0.135	-0.024	0.179
66. I have never considered suspending my university studies either temporarily or permanently.	0.139	0.053	2.637	0.009	0.036	0.243
67. I have taken all my subjects as a student assistant within the University.	0.104	0.079	1.310	0.191	-0.052	0.259
69. I am up to date with the English levels I am required to take.	0.119	0.039	3.089	0.002	0.043	0.195
70. I have never failed one or more subjects because I did not meet the required attendance percentage.	0.245	0.050	4.862	0.000	0.146	0.344
71. I attend classes regularly and punctually.	-0.028	0.085	-0.333	0.739	-0.196	0.139

attended classes more frequently and, on the contrary, those who were trained with more traditional methodologies had higher dropout rates. Therefore, encouraging the adoption of constructive methodologies in the classroom may be a strategy to encourage retention at university. These approaches, in turn, require the adoption of assessment methods that allow the different milestones in which the student participates to be audited, documenting their achievement in a reliable way so that they can perceive the relationship between their effort and their performance (Maluenda et al., 2022).

In relation to these results, Calatayud's (2018) research has highlighted the importance of adapting assessment processes to the individual characteristics of students to ensure a better fit between the way in which they are assessed and the existing assessment needs. For this author, assessment has a social function, and its character is formative and informative, but in no case punitive. Therefore, by eradicating outdated assessment models, which induce students into a stressful situation that makes it difficult for them to reveal their knowledge, a better measurement of their achievements will be achieved and, at the same time, more accurate feedback to them, raising their interest in the learning process. In addition, Kehm et al. (2019) propose the distribution of satisfaction questionnaires that allow for the collection of students' opinions in relation to the academic process in which they have participated, which will make it possible to adapt

educational policies to their recipients, raising the quality of education through integrated systems that pursue continuous improvement.

On the other hand, the study by Alban and Mauricio (2019) suggests that the adoption of peer tutoring systems, as well as other flexible models from which to build more consolidated support networks among students, can increase student satisfaction with the academic process, highlighting the importance of support among individuals to increase adherence to the educational programs they take. In the same vein, Piepenburg and Beckmann (2022) suggest that encouraging affective factors related to learning by encouraging individuals to associate the learning process with positive emotions through interaction with others can amplify their positive perception of education, leading to greater engagement.

Furthermore, the adoption of Information and Communication Technologies (ICT) in the educational system can be perceived as a window of opportunity for the optimization of didactic processes, valuing the options available to improve student adherence and engagement in the pedagogical process (Niyogisubizo et al., 2022). Similarly, technological tools facilitate the improvement of student engagement through positive feedback on student performance, as well as contributing to the early identification of unmet educational needs that can be addressed by the education system. In line with these measures, it may be of interest to create online tutoring programs, which do not require a high investment and

would allow for the referral of those students who need it. On the other hand, Luis et al. (2022) consider that the use of virtual classrooms and ICT applications helps to predict, based on the time spent accessing and using the tools provided, the level of student engagement, which can be the basis for the creation of personalized motivation strategies, such as sending e-mails, reminders, tutoring sessions, etc., thus enabling the education system to increase its retention capacity. Finally, another factor that can contribute to the reduction of dropout can be represented by the provision of more information to prospective students, so that they gain a realistic perspective on the university career they are interested in, the teaching therein and the opportunities it connects to (Bardach et al., 2020).

Finally, we would like to emphasize that in recent years there has been a growing interest and concern in most countries about university dropout, a problem determined by multiple factors such as the social context, the family, the functioning of the system, the attitude of the administration, the work of each teacher and the disposition of the student himself/herself. Taking into account the set of quantitative and qualitative variables analyzed, we can conclude that the main causes to which students attribute their decision to drop out are related to psycho-educational characteristics.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

This research has been approved by the Research Ethics Committee of the University of Granada with registration number 2778/CEIH/2022.

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Author contributions

IM-S and JR organized the database. IM-S performed the statistical analysis. PI-C wrote the first draft of the manuscript. PI-C, SL-R, IM-S, and JR wrote sections of the manuscript. SL-R contributed to manuscript revision of the final version. JR read and approved the submitted version. All authors contributed to the article and approved the submitted version.

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