The impact of academic dropout at the University of Granada and proposals for prevention[12]

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Persistence and dropout are two sides of the same coin. Together with personal and social factors, issues associated with the quality of teaching provided by universities determine students' decision to persist in pursuing their academic degree or, on the contrary, to drop out of university studies. Our working hypothesis is that the impact on improving the quality of teaching by considering pedagogical factors which are currently being researched and experimented with, can improve the overall persistence rate by reducing the dropout rate. Our work consisted of applying an instrument designed to diagnose the risk of dropping out of university studies to a sample of first-year university students at the University of Granada. The instrument was applied at the beginning of the second semester. Of the 642 pupils surveyed, we established a risk group of 20 students. In this preliminary study we intend to make a first approach to the phenomenon of academic failure in Andalusian universities from the prediction and diagnosis of risk groups and the recommendation of preventive measures. Among the measures we propose for prevention, we highlight those that have an impact on pedagogical factors. We propose measures targeting the factors that predict dropout and the implementation of preventive measures.

1 Note 1.
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2 Note 2.
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1. Introduction

The adoption of the European Higher Education Area (EHEA) has led to the acceptance of new challenges for the Spanish education system, which has been forced to turn its attention to ways of increasing educational quality and continuous improvement (Le et al., 2020; Cervero et al., 2021). Within the framework of the strategic actions adopted for the European Union as a whole, the objective is to increase the percentage of young people with university degrees, so that the completion of university studies is nowadays a priority, which requires actions that make it possible for students

not only to access university, but also to maintain their commitment throughout this academic stage and successfully complete it (Roberts, 2011).

This research investigates academic dropout during university education among first-year students at university level with the aim of gaining in-depth knowledge of the causes of the phenomenon and based on its delimitation, to facilitate the programming of lines of action that allow it to be tackled.

The agreed definition of university dropout is characterised by the following variables: the dropout of the student from the university degree in which he/she has enrolled without having passed the requirements for graduation and, correlatively, the absence of new enrolments in other degrees at the same educational level in the following 2 years (Godor, 2017). For Fonseca-Grandón (2018), the first university year is the most important in the student's academic trajectory because it is during this year that the links with the institution are created and the student's commitment to their education is generated. It is during this year that the highest drop-out rate is quantified and, therefore, it should be seen as a critical period in which strategies aimed at retaining students should be drawn up, encouraging them to stay at the university.

Statistics that have so far quantified university dropout have described it as a problem of significant magnitude that, depending on the country in question, fluctuates between 10 and 50% of those enrolled in their first year of university. OECD countries put the average dropout rate during the first year of university at 24%, although it should be noted that in countries such as Brazil this rate exceeds 50% (Bonaldo and Pereira, 2016). In Spain, the latest available data establish the dropout rate at 33.9%, being higher in public universities, where it reaches 35% of enrolments (Cervero et al., 2021). For Roberts (2011) these rates show that the contemporary university system needs to move away from its traditional focus on finding strategies to attract new students and focus on finding ways to ensure that those students who are interested in its educational services do in fact complete their education. Indeed, for the author, it is no longer necessary for the university to aim to increase the enrolment rate, since access to higher education is guaranteed for almost anyone who wants it, the objective being that the academic guidance offered at the university should be adapted to the needs and characteristics of the students who enrol in order to ensure that the highest possible percentage of students successfully complete their studies.

Academic dropout is an object of research on which the academic literature has focused with special emphasis in recent years, given its correlation with various economic and welfare indicators in the general population. Indeed, dropping out of higher education is a phenomenon whose consequences can be tracked in multiple social and productivity aspects of the societies in which it occurs, making it a problem that is a priority to be resolved by both education systems and social systems alike (Le et al., 2020). In justifying the importance of action to curb the incidence of university failure and dropout, studies such as that of Portal Martínez et al. (2022) underline the magnitude of its effects both at the microeconomic level for those who suffer from it and at the macroeconomic and social level. In this respect, countries where the dropout rate is higher experience a direct effect on their well-being and quality of life indicators, as well as a lower capacity for innovation.

Previous studies have linked academic dropout to a very complex web of causes that interact with personal, academic, pedagogical, organisational and social dimensions (De Castro Lima Baesse et al., 2016; Godor, 2017; Pierella et al., 2020). The diversity of factors that may influence the decision about whether or not to continue with university

life makes it complex to design and establish strategies aimed at reducing the prevalence of this phenomenon. Moreover, there is no full consensus in the academic literature regarding possible approaches to university dropout, given the influence of contextual, individual and institutional variables on the dropout experience. For this reason, limiting the research to a specific environment has been envisaged as a way to be able to dimension the nature of the problem more precisely in a specific context and, from this environment, to be able to plan responses in accordance with the needs that have materialised.

1.1. The importance of dropout during the first year of university

Concern about student dropout has increased in recent years and the current understanding of this phenomenon allows better approaches to be designed to reduce it in the near future. According to De Castro Lima Baesse et al. (2016), concern about university dropout is at its peak today, especially as educational institutions compete with each other to attract more students, under new management models focused on maximising the quality of their actions to achieve the best results. The first year of university is a challenge for students because it requires them to make a choice that will have a great impact on the individual, considering aspects such as their vocation, expectations, abilities and opportunities when choosing the most suitable degree (Le et al., 2020). In this context, dropout from higher education is most prevalent during the first year of university, and this has been associated with a number of causes that require students to make an extra effort to adjust to the education they are undertaking.

These causes may be inherent to the university system, such as the organisation of academic processes or the didactic approach from which teaching-learning actions are designed, they may involve factors related to the students themselves, such as their intrinsic motivation towards education, their ability to adapt to the environment or their cognitive flexibility, or they may comprise mixed dimensions, a category which includes all those situations and experiences in whose configuration both the education system and the way in which the individual faces it participate (Le et al., 2020). Specifically, during the first year, students adapt to the new learning system and have to learn to manage their time and learn new work processes, under methodologies with which they may not be familiar (Cohen, 2017).

According to Cervero et al. (2021), university dropout, being a multi-causal problem, cannot be solved with a single strategic measure, so that the strategies adopted to reverse it must be multiple, affecting the different dimensions that cause it. In line with these contributions, it has been suggested that in order to predict student dropout at university, research needs to be proposed based on various hypotheses that can explain the extent to which the various variables that shape the student's experience at university play a role in their decision to leave their studies, drawing up risk profiles based on the likelihood of this decision materialising Portal Martínez et al., 2022. In this respect, research suggests that the process of making the decision to drop out of university is complex and involves different stages, from the first moment the student feels the desire to drop out or considers the possibility of dropping out, until he or she finally acts and decides to take this step.

The difficulty in deepening understanding of this process lies in the fact that while it is materialising, the student continues to maintain a link with the university organisation and responds to the various stimuli that occur at both the affective and social levels. In addition, this relationship

of the student to the university is also shaped by their prior motivation to undertake university studies, their expectations of what to expect when they complete their education and their beliefs about their own competence to achieve this goal. Godor (2017) has highlighted the weight of factors related to the student's integration in the institution on the decision to drop out, which places the role played by the group of which he or she is a part at the centre of the analysis and, complementarily, suggests that it is important the university takes an interest in creating social communities that are built as the core of learning actions. In this respect, the social nature of learning and the fact that it takes place in a scenario involving a set of actors (students, teachers, professionals), requires the creation of guided meeting points that help to increase the feeling of belonging and are capable of influencing students' adherence to the educational practices and policies that are designed.

1.2. Pedagogical actions as a means of preventing university dropout

According to Portal Martínez et al. (2022), pedagogical actions aimed at the prevention of university dropout are one of the strategic methods that can be implemented to increase students' commitment to their chosen course. Among these actions are those that increase students' involvement in the academic process through the creation of meeting points with teachers and peers, as well as reinforcement and guidance mechanisms that ensure greater student support.

These actions can be combined with innovative methods, such as the use of ICT or social media networks, to increase their level of effectiveness and better support the learner during their academic progress (Le et al., 2020). In addition, the use of statistical analysis tools and monitoring strategies that can be incorporated when these actions are implemented using digital resources makes it easier to audit the performance achieved by each action, so that it is easier to determine which are effective and how to optimise those that do not achieve full learner engagement.

De Castro Lima Baesse et al. (2016) have suggested that the design of flexible mechanisms in the university system is essential to ensure that students can adapt their interests, characteristics, and learning styles and paces to the opportunities provided by the educational institution, so that the freedom granted to students is key to fostering their adherence to academic practices and, thus, to their academic success. In this context, Godor (2017) suggest that the monitoring offered to students to measure their ongoing progress and to supply them with feedback is very important because it becomes a factor of support and assistance, extrinsically motivating the student by making visible the link between their effort and their results. Particularly during the first year of university, when students are not yet familiar with how this level of education works, being able to understand how their actions influence their outcomes can encourage them to engage more deeply in their education and demonstrate more proactive attitudes, with the university providing these feedback mechanisms to students (Laato et al., 2019).

2. Methods

2.1. Objectives

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

In this study we propose making a first approach to the phenomenon of academic failure and dropout in the teaching degree and others in Andalusian universities from a predictive and diagnostic perspective of the groups at risk.

2.2. Process

The study consisted of applying an instrument to diagnose the risk of dropping out of university studies to a sample of first-year university students enrolled at the University of Granada in different degree courses. The tool was distributed at the beginning of the second semester so that students would have already had a preliminary six-month period of contact with the degree programme, which is essential for them to understand whether their expectations of the academic process are realistic, as well as to get to know the institution and integrate socially and academically. To recruit participants, the questionnaire was provided to entire groups of students whose teacher showed interest in collaborating with our research. The sampling technique, therefore, consisted of the distribution of the research instrument by convenience, akin to the non-probability sampling process.

2.3. Participants

The diagnostic instrument was applied to 642 first year students of the University of Granada studying different degrees in different faculties like Early Childhood Education, Primary Education, Social Education, Pedagogy, Nursing, Business Administration and Management, Physical Activity and Sports Sciences, Telecommunications, Industrial Engineering, Engineering of Canals and Ports and double degree in Primary Education and English Studies belonging to various faculties such as the Faculty of Education Sciences, Health Sciences, Sciences of Physical Activity and Sports, School of Telecommunications, Economics and Business Sciences, Faculty of Law, Faculty of Sciences and School of Engineering of Canals and Roads. The average age of the student body is 19.66 years, of which 80.4% (516) are women and 19.6% (126) are men.

2.4. 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 university failure and dropout.

The instrument has been slightly edited to adapt the wording to the Spanish context, excluding two of the 73 items proposed by the authors as they were not considered to be relevant in the context of this exploration. Therefore, the tool administered consisted of a survey composed of 71 items, which was complemented by 6 further questions through which we attempted to collect some socio-demographic data from the participants. The items that make up the tool present a 5-degree Likert-type scale on which the student positions themself according to their degree of agreement or disagreement with the statement presented.

The survey was provided to students *via* an online access link to a Google questionnaire, so no method was used to keep the attention of the subjects.

The selection of an instrument of this type in order to determine potential factors that condition educational failure and, in the light of these, identify which groups could be at greater risk of suffering from it due to their particular characteristics, responds to the interest of the education system in anticipating this phenomenon and acting preventively, implementing actions that will have a positive impact on the persistence of students. Furthermore, such a tool helps to identify measures that may be effective in reducing failure and dropout in higher education.

The instrument has already been applied and validated in previous research. Subjects who left any questionnaire field unanswered were eliminated from the data matrix prior to analysis. Regarding the reliability of the data from our sample of subjects, Cronbach's alpha yields a value of 0.90 (very reliable data) for the total set of items and with the following values for the factors motivation (0.89), commitment (0.88), attitude and behaviour (0.93), and socioeconomic conditions (0.86).

The instrument developed by Velázquez and González (2017), distributes the items around four factors that, in turn, are broken down into 12 categories from which the individual's commitment to their academic project can be interpreted in a positive sense and, from a negative perspective, the risk of failure can be identified. These factors, associated with their categories, are listed in Supplementary Table 1 and are as follows: motivation, commitment, attitude and behaviour, and socio-economic conditions.

Responses were obtained from 642 students enrolled in various degrees at the University of Granada. The average age of the participants was 19.66 years. 80.5% of the participants were male and 19.3% female, leaving 0.2% unidentified.

The items that achieved a mean score of less than 3.00 in the study are listed below. These cover eight areas, and they are mainly related to pedagogical factors, which highlights the lack of attention paid to these dimensions in the university system in which the students who took part in the research participate.

The variables in which students scored lowest in the study are related to the coordination of the teaching activity and the pedagogical strategies implemented in the educational institution, which are factors that, according to the findings of this research, could ostensibly be improved at the University of Granada. Specifically, students are dissatisfied with the organisation of classes and the tutorial action strategies developed, as well as with the assessment methods used in the institution, the approach to classes, the recognition of their teachers and the feedback they receive. Of the 642 students surveyed, we established a risk group of 20 students, for whom it would be necessary to design measures targeting the factors that predict dropout and implement preventive measures.

In contrast to the results obtained for the lowest scoring items, which corresponded to pedagogical dimensions, the highest scoring variables are related to psychological and contextual factors influencing the students. In the light of the results that have been established, it is evident that the prevention of early university dropout requires that pedagogical factors be addressed by the education system, which currently show a significant deficit among the students who participated in the study. Thus, students enrolled in the first year of university at the institution where the research was carried out show a high intrinsic motivation towards the degree and towards the professional options to which it gives access, expressing high expectations for their future employment. The questionnaire also revealed a high level of integration of students in their respective faculties, participating in the social networks that are promoted in the university system, which are mainly made up of teachers, students and other staff working at the university. A factor strongly linked to academic engagement is represented by class attendance, which in the selected sample is very high and may contribute to academic success, as this dimension correlates with educational performance.

3. Discussion

University dropout is a problem that makes it difficult for students to achieve their career aspirations and attain an optimal standard of living, as it deprives them of those opportunities that depend on obtaining a higher education qualification (Anyanwu and Iwuamadi, 2015; Mestan, 2016; Le et al., 2020; Respondek et al., 2020). In addition to having a strong psychological impact on the student, it is also associated with an investment that brings no return, both at the individual level and for the education system, which is why addressing this phenomenon is essential for today's society (Perez et al., 2018; Solis et al., 2018). According to Canty et al. (2020), researchers studying the problem of university dropout face several challenges, including the difficulty of obtaining reliable data that help to understand what possible strategies can be efficient, the lack of attention paid by the university system to this issue, and the influence of socio-demographic factors and personal variables in the configuration of this phenomenon. The influence of these factors makes it difficult for universities to act in a preventive manner in the face of university failure and the consequent dropout of students, especially because the diagnosis of at-risk profiles requires a period of time spent at the university and, precisely, the decision to drop out takes place mainly during this first contact, concentrated in the first academic year.

This first access to university involves a stage that requires the individual to build his or her strategies for adapting to the social and organisational space as well as to the demands of the degree. This process can develop with different levels of success depending on the student's characteristics and existing skills, and this may hinder university integration in those who experience more difficulties in socialising or who, due to their psychological characteristics, do not maintain the level of intrinsic motivation necessary to continue in the process, leading to a higher probability of failure (Gregori et al., 2018). Furthermore, according to Mestan (2016), there are a number of factors that the university does not have the capacity to intervene in, such as the financial capacity of students, the emergence of alternative employment opportunities, health problems or other changes in their lives that may be particularly impactful during the first year, as the lack of full adjustment to university life may make students more sensitive to these changes.

Ideas of giving up their course may be common among first-year university students, but they do not always materialise in dropping out because most individuals have a complex web of strengths that help them overcome difficulties (Frémont and Arnal, 2021; Mtshweni, 2022). Factors supporting continuity include having financial resources, participating in active teaching methods that are associated with assessment processes in which effort is valued through understandable and fair procedures, and receiving support from their teachers and peers. Likewise, coming to class and staying connected to the learning process helps to maintain the link with the process and, in this way, encourages commitment so that the student's effort lasts over time and helps them to pass the different subjects that make up the curriculum.

According to Gregori et al. (2018), distance learning universities and, in general, subjects with an online or blended programme have the

highest dropout rate, which can be as high as 64.5%. This high incidence of dropout is related to the student's difficulties in adapting to these modalities, which is a result closely associated with the low attention that the university system pays to the needs that first-time students may present in their process of adaptation to university. In this respect, the freedom granted in these modalities is a handicap for those who are not able to acquire the organisation, time management and commitment strategies that predict success, factors that can be reversed with greater attention through tutoring and student support services, currently not very available at the university and underused by students (Cantos et al., 2021).

Pedagogical strategies can contribute to the reduction of the incidence of university dropout by providing the student with additional support during the learning process (Jani, 2022). Within these strategies, models adapted to the characteristics of the students and their preferences can be adopted, giving students the opportunity to participate so that the link they create with their peers encourages synergies between them and thus activates their own learning efficacy. The most frequently mentioned approaches in previous research, to name a few, are peer mentoring, the creation of working groups, the creation of participation channels such as virtual or face-to-face forums or the incorporation of active methodologies (Canty et al., 2020; Frémont and Arnal, 2021; Portal Martínez et al., 2022; Ugwulor-Onyinyechi et al., 2022).

Cohen (2017) study provides evidence for the effectiveness of online activities for student self-assessment and monitoring when students are given feedback on how they can achieve the goals of the subject they are taking. According to this author, the information provided to learners is key for them to be able to fully engage in the tasks they are set, making them aware of how their effort will have a predictable reward that will help them achieve their goal.

In addition, Ugwulor-Onyinyechi et al. (2022) have identified that when pedagogical strategies are implemented using digital resources, they are more effective than face-to-face support, suggesting that there is a significant window of opportunity for the development of these strategies, for two main reasons: the lower cost to the university system of strategies based on digital media and the greater capacity of these to offer flexible and individualised responses for all students, focused on their particular needs.

Jani (2022) research has shown that, given the role of the peer group, the creation of groups that function collaboratively as learning communities plays an important role in student retention, encouraging the synergies that are created between students to support their persistence in the university system. According to this author, when relationships between students are encouraged, students support each other during the learning process, which increases the level of integration of students in the university, which is one of the most influential factors in the decision to continue, an argument that has also been defended by Cantos et al. (2021) and Gutierrez-Aguilar et al. (2021), who justify the building of groups, forums or communities as a way to reinforce perceived support.

Gupta et al. (2020) have recognised the role that educational quality management systems can play in redesigning the didactic and pedagogical approaches that are implemented in the university, as they help to conduct a continuous and targeted audit to understand the role that the strategies that the university implements have on student retention. To increase the explanatory power of surveys, focus groups and other tools used to enhance the monitoring of the learner experience, Gupta et al. (2020) suggest that it is imperative that there is a high level of awareness among educational institutions regarding

student retention, as this will enable a more effective system to be implemented to increase the quality of educational provision. Indeed, a culture of quality needs to be implemented in higher education institutions to help managers and decision-makers understand the important role that student satisfaction during the first academic year plays in ensuring that students continue their studies and remain committed throughout their time at university.

4. Conclusion

Access to higher education is currently at an all-time high as a result of the maximisation of opportunities offered by the education system at all stages, but the number of students completing university shows a very high dropout rate, which requires the adoption of prevention strategies to reverse this complex phenomenon.

Pedagogical strategies can provide avenues of support to keep learners engaged in the learning process. It is essential to establish support routes through tutoring and the creation of virtual or face-to-face meeting points to provide feedback to learners and support the acquisition of knowledge through participation. Today, the education system has a number of tools that it can implement to provide students with flexible support strategies to optimise the assistance perceived by students, which is seen as a dimension of great importance during the first academic year at university. Students' needs for adaptation to the university environment must be satisfactorily met through didactic approaches and pedagogical strategies aimed at facilitating students' understanding of how the degree course they are taking works, making them aware of the interconnection between the teaching-learning actions that are developed and the results they can obtain by proactively participating in them. In addition, students need individualised strategies and the viability of these is today increased through the use of technology, so that the student's commitment to the education they are receiving can be achieved through the use of various mechanisms that reinforce the perception of the support received from the education system.

The adaptation of pedagogical strategies to the characteristics of the student body can increase the capacity of the education system to retain students in higher education, increasing the competitiveness of society as a whole by improving the available human capital. In addition, by inducing student engagement at a higher level through the use of pedagogical strategies, the university system will be able to contribute to the generation of greater well-being among the wider population, given the relationship between educational attainment and the level of income, health and quality of life enjoyed by citizens. Therefore, updating the pedagogical strategies used in universities is not a trivial matter: the capacity of the social system to generate positive outputs in the medium and long term lies in them.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Research Ethics Committee of the University of

Granada with registration number 2778/CEIH/2022. The patients/ participants provided their written informed consent to participate in this study.

Author contributions

All authors have participated in the preparation of this manuscript and agree to be responsible for its content prior to publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The reviewer JL declared a shared affiliation with the authors to the handling editor at time of review.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2023.1110491/full#supplementary-material

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