

UNDERSTANDING STUDENT DROPOUT IN HUNGARIAN TECHNICAL HIGHER EDUCATION: A MIXED-METHODS STUDY AT JOHN VON NEUMANN UNIVERSITY

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Keywords:

Higher Education dropout
First-year students
Satisfaction with Education
Academic Exhaustion
Dropout Intention
Dual Higher Education

Article history:

Received: 8th May 2025
Revised: 17th July 2025
Accepted: 30th September 2025

Abstract

Reducing dropout rates in higher education is a pressing issue globally. This study investigates the key causes of student dropout at John von Neumann University in Hungary, using a mixed-methods approach. Quantitative data were collected through a survey of 147 fourth-semester students, while qualitative insights were gained via eight in-depth interviews with students who had dropped out. The research aims to identify institutional and personal factors contributing to dropout and to formulate actionable recommendations. Findings suggest that financial pressures, academic challenges, and mismatches between student expectations and institutional demands are critical contributors. Dual higher education emerged as a potential mitigating factor. The study concludes with practical suggestions for institutional reforms and outlines directions for future research.

1 Introduction

In Hungary, as in many other countries, higher education institutions face increasing challenges related to student dropout. According to national statistics, approximately 100,000 students apply to Hungarian universities each year, of whom around 80,000 are admitted (Szemerszki, 2018). Despite these high enrolment rates, dropouts remain a major concern (Deuer et al., 2024). For instance, dropout rates in engineering BSc programs range between 40% and 44% (Demcsákné & Huszárik, 2020).

The consequences of student dropout are significant for both institutions and individuals. Students who live without completing their degrees lose time and resources, while institutions face reputational and funding challenges. Therefore, it is essential to understand the underlying causes of dropout in order to develop effective intervention strategies.

Dropout refers to students leaving their higher education institution without obtaining a degree, either within or beyond the designated study period. This outcome is detrimental not only to institutions but also to students, who may invest months or even years pursuing a goal they ultimately do not achieve.

John von Neumann University, located in Kecskemét, Hungary, is no exception. The institution makes significant efforts to ensure that enrolled students successfully complete their programs. One of the greatest challenges in this endeavour is maintaining academic standards without compromising quality. It would be reductive to assume that simply easing course requirements could resolve the issue. This is especially true because dropout is not solely the result of repeated academic failure.

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Multiple factors contribute to this phenomenon, with their significance varying depending on program type (BSc or MSc), study format (full-time, part-time, evening), funding model (state-funded or self-financed), and field of study (e.g., engineering, business, law, or medicine). Additional contributing factors must also be considered, and identifying and ranking them is an integral part of this study (Sági & Fülöp, 2024).

The issue of student dropout has been extensively studied since the 1970s, most notably through the work of Tinto (1975), who described dropout as a gradual process with identifiable early indicators. Tinto's theory emphasizes academic and social integration as key elements in student persistence. This framework, along with more recent European studies (Wollscheid et al., 2015; Deuer et al., 2024), serves as the theoretical foundation for this research.

Although the phenomenon has been examined for nearly five decades (Szemerszki, 2018), little is still known about the decision-making processes that lead to dropout, particularly as the underlying causes vary from one institution to another.

The aim of this study is to formulate recommendations for reducing student dropout at John von Neumann University. To achieve this, a literature review will first be conducted to examine dropout prevention measures implemented by domestic and international higher education institutions, as well as methods for identifying the causes of dropout. This will be followed by primary research involving student surveys aimed at uncovering the reasons why dropout is becoming increasingly prevalent. Both interviews and internal questionnaire-based surveys will be conducted, with survey questions largely informed by the literature review. Due to limitations in sample size for interviews, questionnaires will be distributed during lectures and completed using students' phones, tablets, or laptops. This approach facilitates the inclusion of a wider range of student groups and enhances the reliability of the findings.

Based on the results, institution-specific recommendations will be developed and proposed for implementation at John von Neumann University. In the short term, a decrease in dropout rates can be expected, likely materializing over two to three semesters. In the longer term, improvements in education quality and student satisfaction may contribute to an increase in the number of applicants. Globally, participation in higher education continues to rise. Whereas universities historically served to educate society's elite, this is no longer the case. Increasingly, students from disadvantaged backgrounds are also pursuing higher education, marking a shift that has prompted numerous internal transformations (Trow, 2007).

This study investigates the reasons behind student dropout using both primary and secondary research, with the aim of proposing practical, evidence-based solutions tailored to the institutional context.

1.1 Location

The continuously expanding and diversifying higher education sector clearly reflects a steady increase in equal opportunities, enabling institutions to attract a broader and more heterogeneous student population (Wollscheid et al., 2015). However, the growth in student enrolment also introduces new risk factors. According to the law of large numbers, dropout rates tend to increase in proportion to enrolment growth, often exceeding the average.

Herzog (2005) addressed this issue in his study, concluding that dropout is not solely the result of financial hardship or insufficient academic preparation. A significant contributing factor is the geographical distance between a student's residence and the institution. Consequently, some students prioritize the availability of dormitory accommodations when choosing a university or college, hoping to secure on-campus housing and thereby avoid the financial and logistical burdens of commuting or renting an apartment.

1.2 Student Enrolment

Kim and Kim (2018) reported notable findings in their study on the frequency of student dropout. Their first observation was that institutions with smaller student populations demonstrated better

student retention. This suggests that closer teacher–student relationships may form in such environments, making it easier for students to share their difficulties, complaints, or concerns.

Another key finding was that higher education institutions with greater emphasis on academic activities, such as research and publishing intended to exhibit higher dropout rates. A possible explanation is that the increased workload of faculty members may limit opportunities for meaningful engagement with students, thereby weakening the teacher–student relationship. This second finding reinforces their initial conclusion regarding the importance of interpersonal connection in student persistence.

This outcome is particularly intriguing in the Hungarian context, where the Scientific Student Conference (in Hungarian: Tudományos Diákköri Konferencia, TDK) is specifically designed to foster student interest in research and to strengthen bonds between students and faculty. However, Kim and Kim's results suggest that teaching and research activities do not always reinforce one another in practice, potentially highlighting a tension between institutional missions (Kim & Kim, 2018).

1.3 Family and Economic Background

Due to their economic, cultural, and educational backgrounds, some young people face significant barriers to entering higher education. In contrast, for students whose parents hold a university degree, pursuing post-secondary education is often considered a natural or even expected progression (Chen, 2008). Although this disparity persists, the gap between these two groups is gradually narrowing, as education is increasingly perceived as a long-term investment. In this context, student loans are often viewed as a rational financial decision.

Students from less privileged financial backgrounds frequently take on part-time jobs while attending university. When such employment is related to their field of study, it can provide opportunities to apply theoretical knowledge in real-world settings, potentially enhancing academic performance. Furthermore, acquiring relevant professional experience during one's university years can be a valuable asset in the labour market, strengthening one's résumé. However, while working alongside studying can offer certain benefits, in practice, most student jobs do not align with students' academic interests or career goals and thus fail to provide these advantages (Viklund & Elgundi, 2024).

1.4 Gender

Gender distribution in dropout rates presents another important dimension of the phenomenon (Newcomb, 2002). A survey conducted in Hungary found that female students enrolled in BSc programs are significantly more likely to complete their degrees (60–61%) compared to their male counterparts (44%). This gender gap is also observed internationally, where completion rates tend to be slightly higher overall.

When comparing international data with domestic figures, Hungary falls into the mid-range. In several countries, such as Lithuania, Ireland, Cyprus, Luxembourg, Sweden, Norway, and Switzerland, more than 50% of students successfully complete their degree programs. In contrast, Hungary's completion rate is approximately 30%, highlighting room for improvement (Fortina, Lessarda, & Marcotte, 2010).

1.5 New Environment: Transitioning from High School

Primary and secondary education differ significantly from university education. One of the main reasons for this is the transition to adulthood, as universities educate students who are already 18 years old and considered "adults." As a result, different teaching (and learning) methods and expectations are applied, and even the environment itself feels unfamiliar (Casanova, Gomes, Bernardo, & Núñez, 2021). This transition happens almost overnight for newly minted adults, further intensifying the challenges. Overall, these changes can be seen as stress factors, which are compounded by academic requirements. In this context, new students must learn to organize and manage their curricular and extracurricular activities (Tinto, 2017). Successful students regulate their own learning

by implementing a range of cognitive, metacognitive, and motivational strategies that enable them to become self-regulated learners and construct their knowledge effectively (Pintrich, 2004). What truly defines self-regulated learners is not merely their use of learning strategies but rather their personal initiative, persistence in tasks, and competencies (regardless of the learning context or assessment outcomes). Students with lower academic expectations or those who experience a mismatch between their initial expectations and reality may face greater frustration and stress during their adaptation to higher education (Diniz et al., 2018).

Another major change in students' lives is choosing a course that aligns with their personal and professional interests and goals (something that does not always happen for many incoming university students). University admission systems are based on scores, which are calculated from high school grades combined with additional points awarded for academic achievements, sports, or socio-economic disadvantages. During the admission process, students rank their preferred institutions in order. Those with higher scores are more likely to be accepted into their top-choice universities. However, if they are not admitted to their first-choice institution, they are automatically placed in their second, third, or subsequent choices. This "numerus clausus" system prevents some students from enrolling in their preferred university and program, which may initially lead to weaker academic performance and, in some cases, even dropout (Ferraio & Almeida, 2018).

2 The role of research in reducing dropout

The primary aim of this research is to investigate the underlying causes of student dropout in technical higher education at John von Neumann University and to propose effective strategies for its reduction. The study seeks to answer the following research questions:

1. What are the main factors contributing to student dropout at John von Neumann University?
2. How do current students perceive their own risk of dropping out?
3. What insights can be obtained from students who have already dropped out?
4. Can dual higher education serve as a viable solution to reduce dropout rates?

Addressing these questions requires acknowledging the complexity of dropout as a multifaceted phenomenon influenced by numerous interrelated factors. One significant challenge lies in defining and accessing the appropriate target population, particularly former students who have already left the institution. Their experiences are crucial yet reaching them poses logistical difficulties. To overcome this, the study targeted two distinct groups:

- Current BSc students in their fourth semester
- Former students who dropped out within the past two academic years

A quantitative survey was administered to the current student cohort, while qualitative data was collected through in-depth interviews with former students. Additionally, secondary data sources were consulted to provide further context and support the primary findings.

The effectiveness and validity of the research depend on selecting the most appropriate methodological approach for each research objective. To that end, the individual tasks, methods, and data sources are detailed separately. Central to this design is the categorization of research participants, which determines the selection of sampling and data collection strategies. The two main participant groups (current students and former dropouts) necessitate distinct methodological approaches and are therefore treated separately in the subsequent sections.

This study employs a mixed-methods research design that integrates both quantitative and qualitative data. Data collection was conducted during the 2023/2024 academic year. Ethical approval was granted by the Ethics Committee of John von Neumann University, and written informed consent was obtained from all participants prior to their involvement in the research.

2.1 Questionnaire survey

In this phase of the research, the target group consisted of students actively enrolled in their studies, whose opinions and experiences could most effectively be captured through a structured survey. As participation could neither be mandated nor coerced, sampling was conducted on a voluntary basis.

To maximize response rates, the survey was administered at the end of a lecture with the highest attendance among students following the standard fourth-semester curriculum. Fourth-semester students were selected intentionally, as they had already accumulated sufficient academic experience and were approaching the point of specialization selection, making them well-positioned to reflect on both past challenges and future academic decisions.

The questionnaire was distributed to 147 students during a scheduled lecture session. Participation was entirely voluntary, and responses were collected anonymously to ensure confidentiality and to encourage honest feedback. The survey, created using Microsoft Forms®, contained both closed and open-ended questions covering:

- Family background
- Education history
- Financial situation
- Student life and academic experience

The questionnaire consisted of several sections containing predefined response options to facilitate comparability during data analysis. These included a combination of binary (yes/no) questions, multiple-choice questions offering between two and six possible answers, and Likert-scale items spanning multiple statements. This structure aimed to ensure consistent and interpretable results across participants. The final two items in the survey were open-ended questions, designed to elicit students' individual perspectives. These questions were accompanied by the instruction "answer in a few sentences", providing guidance while still allowing for elaboration if desired. Students were allotted 45 minutes to complete the questionnaire, which was administered in-class and restricted to completion within the classroom environment. The survey was conducted anonymously to encourage candid responses and foster a sense of psychological safety in sharing personal experiences.

2.2 In-depth interview survey

To gain a deeper understanding of the personal factors contributing to student dropout, in-depth interviews were conducted with individuals who had discontinued their studies. The interviews aimed to explore the personalities, motivations, and specific circumstances underlying their decision to leave higher education, as well as to identify what changes, if any, they believed could have enabled them to complete their degree.

The email addresses of students who had withdrawn during the previous semester were provided by the Academic Office of John von Neumann University, which maintains official records of former students. A total of 58 email addresses were made available. These were handled with strict confidentiality, and the invitation to participate in the interviews was sent using blind carbon copy (BCC) to protect the recipients' identities.

Conducting in-depth interviews presents specific methodological challenges. To ensure that the conversations yielded rich, relevant insights, the interviewer needed to be well-prepared, concise, and approachable. For this reason, the interviews were conducted in the later stages of the research process. This allowed insights gained from the design and analysis of the quantitative survey to inform the development of a structured interview guide tailored to the research objectives.

The interviews followed the "funnel technique": each session began with general, informal conversation intended to put participants at ease. Once rapport was established, the discussion gradually transitioned to more focused questions relating to their academic experiences and reasons for dropout.

3 Results & Discussion

This chapter presents the analysis and evaluation of the data collected through questionnaire surveys and in-depth interviews. Quantitative data were processed using descriptive statistical methods and cross-tabulations to identify patterns and relationships so for example, the association between sources of income and students' perceived risk of dropout.

Qualitative data obtained from interviews were analyzed using thematic coding. The analysis focused on identifying recurring motives, personal narratives, and structural barriers that contributed to dropout decisions. By integrating both quantitative and qualitative findings, this chapter aims to provide a comprehensive understanding of the factors influencing student attrition at John von Neumann University.

3.1 Evaluation of the questionnaire survey

Survey results indicated that 78% of fourth-semester students still live with their parents and receive financial support from them, see Figure 1.

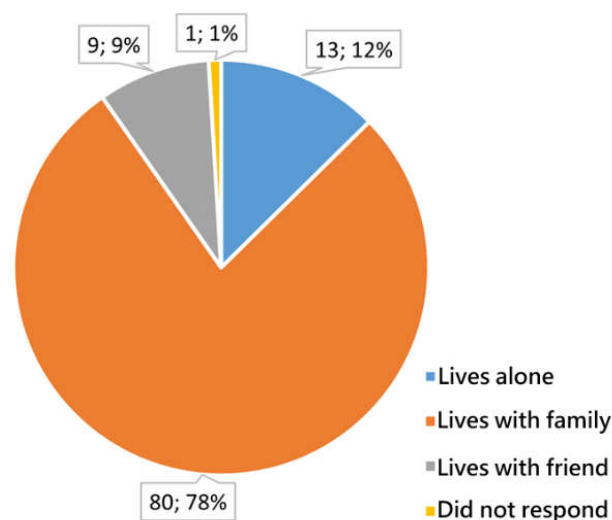


Figure 1. Who do the students live with?

The findings indicate that parental support continues to play a significant role in the lives of fourth-semester students. This conclusion is further supported by responses to the question, "How do you earn your income?" Participants were allowed to select multiple options from three categories: I work, I receive a scholarship, and My parents support me. A total of 59 students reported receiving financial support from their parents, with 14 selecting this as their sole source of income. These results underscore the continued importance of parental financial support. When combined with the observation that most students still live with their families, it becomes evident that greater attention should be given to engaging and informing parents in the educational journey.

Alarming, half of the students surveyed (51 respondents) reported that they had considered leaving university to enter the workforce or pursue vocational training. This concern is compounded by the fact that approximately two-thirds of respondents (65 students) stated that, if given the chance to apply again, they would opt for a dual higher education program. These findings suggest that many students are seeking alternatives that combine practical work experience with academic learning.

Regarding students' financial situations (specifically, their self-reported monthly budgets) no statistically significant correlation was found when compared with other variables. However, a few patterns emerged. Among students living on less than €100 per month, two-thirds rely on parental support. In contrast, among those managing more than €400 per month, less than half receive such support, indicating that higher-income students are more likely to be financially independent.

Additionally, a considerable proportion of students reported managing on less than €200 per month, and the number of students earning between €200 and €400 per month was roughly equal to those earning below €200.

A potential solution to these financial challenges could be the implementation of a high-value scholarship system. However, given current economic constraints and the fact that universities do not receive discretionary funding for direct student support, such a solution is currently not feasible. Therefore, alternative models must be considered, particularly those that benefit both students and their institutional or industry partners. One such model is the dual higher education program, which provides students with structured opportunities to gain professional experience while pursuing academic studies.

Notably, employment among students appears to increase as they progress through their studies. While approximately 50% of first-semester students were employed, this figure rose to 60% among fourth-semester students. This trend suggests that as students advance, the perceived or actual need to work while studying intensifies. Interestingly, even after just one semester, one-quarter of first-semester students were already considering leaving university to pursue vocational education, while nearly 40% expressed a preference for entering the workforce over continuing their studies. These findings further highlight the importance of the dual education model, in which students solve real-world industrial problems, often directly linked to their academic field.

Unfortunately, half of the students who completed the questionnaire (51 respondents) have already considered leaving the university to enter the workforce or pursue vocational training. This concern is further reinforced by the fact that two-thirds of the respondents (65 students) stated that, if given the opportunity to apply again, they would choose the dual education program.

As can be observed, there are cases in which it is difficult (or nearly impossible) to determine the most effective method for reducing student dropout. One of the survey questions asked, "Where did you complete your secondary education?", to which students could respond by choosing either grammar school or vocational secondary school.

A review of historical data shows that, in the past, the majority of students came from vocational schools, while graduates of grammar schools were relatively rare. The reason for this was that grammar school students typically continued their studies at large urban universities (particularly in Budapest) pursuing degrees in law, medicine, or economics, or enrolling in engineering programs at the Budapest University of Technology and Economics (BME).

However, the current survey revealed a shift: 68 respondents had attended grammar schools, while only 34 came from vocational schools, exactly half as many. Several factors may explain this trend; one possibility is that the perceived value of a degree earned at the GAMF Faculty of Engineering and Computer Science, John von Neumann University has increased among students. Supporting this interpretation is the fact that, in response to the survey question "Why did you choose GAMF?", most students selected options such as "I consider the program to be high-quality" and "I heard good things about the university."

Naturally, investigating why an increasing number of grammar school graduates choose to enroll may be worthwhile from an admissions perspective, but it is largely irrelevant in the context of dropout analysis. What does pose a challenge, however, is that instructors at the GAMF Faculty have become accustomed to a certain baseline level of knowledge among incoming students. This shift in student background has significantly altered expectations, as grammar school graduates often lack the same level of preparation in mathematics and physics as those coming from vocational schools.

An additional challenge arises with students who were admitted to NJE but had originally applied to technical programs at other universities or, in worse cases, to non-technical programs. For the latter group, integrating into the technical academic environment may prove especially difficult and could further increase the risk of dropout.

Another interesting finding is that 15% of the survey respondents indicated that, if given the chance, they would no longer choose to pursue engineering. This is particularly noteworthy given that these same students also reported that they would recommend GAMF to their peers. This suggests that these students may have chosen the wrong career path. Supporting this interpretation is the fact that the majority of them answered yes to the question: "Have you ever considered transferring to another university or program?"

Taken together, the data suggest that financial independence, academic pressure, and a lack of clear expectations are major contributing factors to student dropout. The dual higher education model may offer a viable framework for addressing these challenges by integrating academic content with practical experience and income-generating opportunities.

3.2 Evaluation of the in-depth interview survey

Eight former students (aged 21–31) participated in the in-depth interview survey. Each of them was interviewed via Teams. The survey participants were women between the ages of 21 and 26, and men between the ages of 21 and 31. All of them had left university in the past year and none of them had continued their studies. Interviews followed a semi-structured guide using the funnel technique to build rapport. Each interview lasted approximately 30–45 minutes and was transcribed. Thematic analysis was conducted following Braun and Clarke's (2006) methodology. On average, each transcript comprised 4–6 pages.

An unexpected finding emerged from the interviews: of the eight former students who participated, only two were unmarried (a 24-year-old woman and a 21-year-old man) and five of them already had children. This is particularly noteworthy given that the majority cited family responsibilities as a major obstacle to continuing their studies. Based on these accounts, it can be inferred that students with families face a significantly higher risk of dropout, underscoring the need for targeted support mechanisms tailored to their needs.

The interviews revealed that five of the eight participants dropped out shortly after the COVID-19 pandemic. During the period of distance learning, these students were able to work while studying, benefiting from the flexibility that online education provided. However, once traditional in-person instruction resumed, they found it increasingly difficult to balance academic obligations with family and work responsibilities. All eight respondents left the university during the semester when normal classroom-based instruction was reinstated. One participant reflected on her experience as follows: *"My second semester was coming up, but I already felt that I wouldn't be able to attend, so it happened. I decided to drop out within two weeks."* (female, 24)

This case illustrates the importance of offering more flexible learning options, particularly for students with caregiving responsibilities. While full-time attendance may not be feasible for all, hybrid or part-time formats (including correspondence education and online lecture streaming) could provide a viable alternative. Implementing such measures could play a key role in reducing dropout among students with families.

About the students' future plans, several of them indicated that they would really like to continue studying because they feel the need to, but *"...no matter how much they want to, time doesn't allow it anymore."* (male, 26). Some of them stated that *"I still have the time and inclination, but I wouldn't be able to finance the training financially"* (male, 21).

Most of their suggestions for eliminating dropouts are useful, a list some of them:

- *Young people should teach in the practices, who follow the trend and technology* (male, 24).
- *Block correspondence courses and immediately after them in-person, exams should also be brought forward* (male, 31).
- *Reduce the number of daily classes and have a lunch break* (female, 24).
- *If there was online education, you would still have to go to write the papers* (male, 21).
- *The curriculum should be coordinated with the industry and updated so that we would be more willing to learn* (male, 26).
- *There should be only one platform, no need for Teams, so that information would flow more easily* (male, 24).

Among the proposed interventions, enhanced coordination with industry emerged as the most critical recommendation, clearly underscoring the relevance and potential of the dual higher education model. This form of cooperation not only supports students in applying theoretical knowledge in practical settings but also contributes to their financial stability and career development. The key

findings derived from the in-depth interviews are summarized in Table 1, which presents the most frequently cited reasons for dropout and potential institutional responses.

Table 1. Summary of the in-depth interview

<i>Gen-der</i>	<i>Age</i>	<i>Study Mode</i>	<i>When did they leave the uni-versity?</i>	<i>Did they seek help before leaving?</i>	<i>What should the university change?</i>	<i>Would they return to NJE?</i>
Fe-male	24	Full-time	2022	Yes	More timely information	Yes
Male	21	Part-time	2022	Yes	Increase the number of mid-terms and schedule them earlier	Yes, if edu-cation is online
Fe-male	21	Part-time	2021	Yes	Provide more detailed infor-mation about midterms	Yes
Male	23	Full-time	2021	Yes	Allow make-up exams for non-exam subjects in the cross-semester	Yes
Male	24	Full-time	2021	Yes	Increase and modernize practical sessions	Yes
Male	26	Part-time	2021	Yes	Instructors should inform students in time	No
Fe-male	26	Full-time	2022	Yes	Offer tutoring or exam prep-eration for certain subjects	No
Male	31	Part-time	2021	Yes	Reinstate online education and consolidate subjects	Yes, if edu-cation is online

4 Conclusions & Recommendations

In contemporary higher education, a significant portion of students admitted to universities and colleges discontinue their studies before completing their degrees, so in other words, they drop out. While student attrition is not a new phenomenon, it has become increasingly prevalent in recent years. In the past, admission to higher education institutions was considerably more selective, which often motivated students to persist through challenges to avoid dismissal. Today, as admission criteria have become somewhat more accessible, a larger number of students pursue post-secondary education. However, many encounter a range of academic, financial, or personal obstacles that impede their progress and lead to early withdrawal.

All higher education institutions strive to reduce dropout rates, yet no universal solution has been identified. This is primarily because the factors contributing to dropout vary significantly from one institution to another. John von Neumann University is no exception: addressing its dropout rate effectively requires a thorough understanding of the specific factors influencing its student population. To identify these contributing factors and develop targeted interventions, both secondary and primary research methods must be employed. Secondary research provides general insights through the analysis of existing literature and national data, while primary research enables the collection of specific, institution-level information directly from students.

Current students represent a valuable source of information, as they are typically aware of the difficulties their peers face, as well as their own challenges. Given the large population size, quantitative surveys are well-suited to gather data from this group. In contrast, for students who have already dropped out—where the sample size is smaller—qualitative in-depth interviews are more appropriate. These interviews follow a semi-structured guide and offer a more personal, flexible format, allowing participants to share experiences and insights that might otherwise go unreported.

Survey results indicate that the majority of students still reside with their families. This raises the question of whether increased parental involvement in university communication might be beneficial, particularly given students' ongoing financial dependence. Although many students strive for independence, securing adequate financial resources remains a challenge. As a result, numerous

students take on part-time jobs, which can negatively affect their academic performance. One possible institutional response is to involve students in externally funded corporate projects. This approach would not only offer financial support but also provide meaningful, hands-on experience that enhances their academic learning and professional development.

Another noteworthy trend observed in the data is the changing composition of the student body. While the number of students entering from general secondary schools has doubled, the proportion of students from vocational schools has declined by half. This shift may indicate a lack of preparedness among some entrants, particularly in foundational subjects, thereby increasing their risk of academic failure. A potential solution could involve the introduction of preparatory courses for secondary school students, led by university instructors. Such courses could serve dual purposes: supporting students' readiness for higher education and acting as a criterion in the admissions process or as a component of early academic support strategies.

A total of eight former students participated in the in-depth interviews. While the sample size was limited, the insights obtained were particularly valuable. One key finding was that part-time students expressed a strong preference for online instruction which format implemented during the COVID-19 pandemic but discontinued shortly thereafter. The abrupt return to in-person learning was perceived negatively by many, with several participants citing this shift as a contributing factor in their decision to discontinue their studies. Overall, the in-depth interviews proved highly informative. As the interviews progressed, mutual trust frequently developed between interviewer and participants, allowing for open and candid discussions of sensitive topics that might otherwise have remained unspoken. To support this level of openness, it is essential that the interviewer be a neutral university staff member with no prior relationship or interaction with the interviewee. This approach fosters a sense of impartiality and confidentiality, which encourages honest and reflective responses.

Student dropout remains a complex and multifaceted challenge. At John von Neumann University, the combination of financial stress, rigid academic structures, and inadequate institutional support appears to be major drivers of attrition. Based on this research, the following recommendations are proposed:

- Implement more flexible learning formats, including online and hybrid classes.
- Expand the dual education program to enhance practical engagement and financial support.
- Improve institutional communication with both students and parents.
- Offer preparatory and remedial courses for students from disadvantaged educational backgrounds.

While this study offers valuable insights into the factors contributing to student dropout, it is not without limitations. The small sample size of the in-depth interviews limits the generalizability of the qualitative findings, and the study's focus on a single institution restricts the broader applicability of its conclusions. Future research should expand to include multiple higher education institutions and explore the longitudinal outcomes of implemented interventions to assess their sustained effectiveness. Reducing dropout rates is a complex and resource-intensive endeavor. Although some proposed solutions may involve significant costs or structural changes, their potential long-term benefits, such as improved student retention, enhanced academic performance, and increased institutional reputation may far outweigh the initial investment.

Acknowledgment

The article has been funded with support from the European Commission, EACEA. EU4DUAL project 101089937. The authors would like to express their gratitude to the European Commission and EACEA for their financial support in making the research possible.

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