

DECISION-MAKING PATTERNS AMONG UNIVERSITY STUDENTS: AN EXPLORATORY STUDY USING AN EDUCATIONAL SIMULATION GAME

PODEJMOWANIE DECYZJI PRZEZ STUDENTÓW W SZKOLNICTWIE WYŻSZYM: EKSPLORACYJNE BADANIE WZORCÓW ZACHOWAŃ Z WYKORZYSTANIEM EDUKACYJNEJ GRY SYMULACYJNEJ

Jarosław Hermaszewski^{A-F}

Institute of Social Sciences, State University of Applied Sciences in Głogów, Poland
Instytut Nauk Społecznych, Państwowa Akademia Nauk Stosowanych w Głogowie, Polska

Hermszewski, J. (2026). Decision-making patterns among university students: an exploratory study using an educational simulation game / Podejmowanie decyzji przez studentów w szkolnictwie wyższym: eksploracyjne badanie wzorców zachowań z wykorzystaniem edukacyjnej gry symulacyjnej. *Social Dissertations / Rozprawy Społeczne*, 20(1), 129-142. <https://doi.org/10.29316/rs/222529>

Authors' contribution /
Wkład autorów:

- A. Study design /
Zaplanowanie badań
- B. Data collection /
Zebranie danych
- C. Data analysis /
Dane – analiza i statystyki
- D. Data interpretation /
Interpretacja danych
- E. Preparation of manuscript /
Przygotowanie artykułu
- F. Literature analysis /
Wyszukiwanie i analiza literatury
- G. Funds collection /
Zebranie funduszy

Tables / Tabele: 3

Figures / Ryciny: 0

References / Literatura: 26

Submitted / Otrzymano:

2026-03-18

Accepted / Zaakceptowano:

2026-05-27

Abstract: The aim of this study was to identify decision-making patterns exhibited by university students in a simulated educational environment and to analyse the relationship between experienced difficulties and preferred forms of support in the process of studying.

Material and methods: The research was conducted as an exploratory empirical study using an original educational simulation game called *Studia+*. In this simulation, studying was conceptualised as a sequence of decisions made by students across seven areas of academic functioning, including study goals, modes of action, resource management, perceived difficulties, and preferred forms of support. The study involved 161 university students. Data were analysed using descriptive statistics and tests of association between selected decision domains.

Results: The results revealed a very high level of individualisation in complete decision-making paths, with 148 unique configurations identified among 154 complete responses. Despite this diversity, recurring decision cores were observed, particularly in relation to competence-oriented study goals and preferred modes of action. A statistically significant relationship was also found between experienced difficulties (e.g., procrastination, burnout) and preferred forms of support, such as internships, mentoring, and peer support.

Conclusions: The findings suggest that studying should be understood as a dynamic decision-making process in which students construct individual strategies for functioning in the academic environment. The use of an educational simulation game as a research tool enables deeper exploration of the studying experience and may support the design of more personalised forms of student support in higher education.

Keywords: decision-making process, studying, educational game, student behaviour, educational support

Streszczenie: Celem badania była identyfikacja wzorców podejmowania decyzji przez studentów w symulowanym środowisku edukacyjnym oraz analiza zależności między doświadczanymi trudnościami a preferowanymi formami wsparcia w procesie studiowania. Studia zostały ujęte jako proces decyzyjny związany z zarządzaniem zasobami i strategiami działania.

Materiał i metody: Badanie miało charakter eksploracyjny i zostało przeprowadzone z wykorzystaniem autorskiej gry symulacyjnej *Studia+*. W symulacji studiowanie przedstawiono jako sekwencję decyzji podejmowanych w siedmiu obszarach funkcjonowania

Adres korespondencyjny: Jarosław Hermaszewski, Instytut Nauk Społecznych, Państwowa Akademia Nauk Stosowanych w Głogowie, Polska; email: J.hermszewski@pans.glogow.pl ORCID: 0009-0001-9852-3031

Copyright: © 2026 Jarosław Hermszewski



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0).

akademickiego. W badaniu uczestniczyło 161 studentów. Analizę przeprowadzono z wykorzystaniem statystyki opisowej oraz testu chi-kwadrat.

Wyniki: Zaobserwowano wysoki poziom indywidualizacji ścieżek decyzyjnych studentów – spośród 154 konfiguracji aż 148 było unikalnych. Stwierdzono również istotny związek między dominującymi trudnościami (np. prokrastynacją lub wypaleniem) a preferowanymi formami wsparcia.

Wnioski: Wyniki badań wskazują, że studiowanie można interpretować jako dynamiczny proces podejmowania decyzji i zarządzania zasobami. Wykorzystanie edukacyjnej gry symulacyjnej jako narzędzia badawczego umożliwia pogłębioną analizę zachowań studentów w środowisku akademickim oraz może wspierać projektowanie bardziej zindywidualizowanych form wsparcia w szkolnictwie wyższym.

Słowa kluczowe: proces podejmowania decyzji, studiowanie, gra edukacyjna, zachowanie studentów, wsparcie edukacyjne

Introduction

Studying as a decision-making process

Higher education is increasingly recognised as an environment in which students must continuously make decisions regarding their learning strategies, personal development, and engagement with the academic community. Studying therefore cannot be understood solely as the passive fulfilment of curricular requirements but rather as an active process of decision-making in which students navigate competing demands, limited resources, and evolving personal goals. Understanding how students make decisions within the academic environment has become an important area of research in educational sciences, particularly in the context of student wellbeing, engagement, and success in higher education. Earlier research conducted among final-year secondary school students in the Głogów region also indicates that young people increasingly perceive education as a pathway toward professional development and personal fulfilment (Hermaszewski, 2025).

In this perspective, studying may be conceptualised as a dynamic decision-making process involving the selection of goals, allocation of cognitive and emotional resources, and the adoption of strategies for coping with difficulties encountered during the learning process. Students regularly face challenges such as time pressure, motivational fluctuations, and increasing academic expectations. Their responses to these challenges are reflected in patterns of behaviour that shape their educational trajectories and influence both learning outcomes and the overall experience of studying.

Contemporary studying increasingly takes the form of a complex decision-making process in which individuals not only follow the formal curriculum but also continuously make choices regarding how they function within the academic environment. These decisions involve defining the goals of studying, organising personal learning activities, allocating limited resources, and selecting strategies for coping with difficulties encountered during the educational process. Studying is therefore not merely a sequence of educational tasks but a dynamic adaptive process embedded in the context of time pressure, institutional requirements, and social as well as personal expectations (Zimmerman, 2008; Panadero, 2017; Henderikx et al., 2023).

From the perspective of psychology and educational pedagogy, the studying process can be analysed as a sequence of decisions made under conditions of incomplete information, fluctuating motivation, and limited cognitive and emotional resources (Kahneman, 2011; Evans, 2008, Bond et al., 2024). In this perspective, difficulties experienced by students, such as procrastination,

disorganisation, or symptoms of burnout, should not be interpreted solely as individual deficits but rather as elements of behavioural regulation within a demanding educational environment. Analysing studying as a decision-making process therefore allows for moving beyond simplified assessments of students' functioning toward a more nuanced understanding of their adaptive strategies (Steel, 2007; Maslach, Leiter, 2016; Martin et al. 2020).

Limitations of previous research on student functioning

Previous studies on the experience of studying have largely focused on analysing declared attitudes, levels of satisfaction with studies, and educational motivation (Kahu, 2013; Henderikx et al., 2023). Although such approaches provide valuable insights into students' subjective evaluations of the educational process, they only partially capture the actual behavioural patterns that emerge in situations involving pressure, overload, and the need to make decisions.

One of the main limitations of research based on self-reports is its susceptibility to social desirability bias and the tendency toward retrospective rationalisation of actions (Podsakoff et al., 2003). When describing their behaviour, students often refer to normative expectations of what "proper" studying should look like, which makes it difficult to identify the real mechanisms underlying decision-making processes. As a consequence, relatively little attention has been paid to concrete coping strategies that emerge during action rather than in retrospective reflection.

Another noticeable gap in the literature concerns the lack of research exploring studying as a dynamic process in which decisions are made sequentially and influence one another over time. There is also a shortage of research tools that allow for analysing configurations of decisions and their relationships with experienced difficulties and forms of support sought by students (Bond et al., 2024; Carvalho et al., 2024).

International research increasingly emphasises the complexity of student engagement and behavioural functioning within higher education environments, particularly in relation to self-regulation, learning analytics, and adaptive educational support systems (Henderikx et al., 2023).

Educational games as tools for exploring decision-making processes

One approach that enables a deeper analysis of students' decision-making processes involves the use of educational games and simulations. Such tools allow researchers to create decision situations embedded in coherent narratives while simultaneously reducing the formal evaluation pressure typically associated with academic settings. The metaphor of a game encourages participants to distance themselves from normative academic roles and enables the exploration of behaviour in conditions perceived as safe and non-judgemental (Gee, 2008; Deterding et al., 2011; Wang et al., 2022; Dichev, Dicheva, 2023).

Educational games are increasingly used not only as teaching tools but also as research instruments that allow for analysing how individuals interpret challenges, prioritise goals, and select strategies of action. In the context of studying, decision simulations make it possible to capture the relationships between perceived difficulties and selected forms of support, as well as to identify recurring configurations of choices that are difficult to observe through traditional survey methods based solely on declarations (Wouters et al., 2013; Martin et al., 2022).

In the present study, an educational game was used as an exploratory research tool designed to analyse patterns of student decision-making rather than as a diagnostic or psychometric

instrument. This approach shifts the focus from measuring individual traits toward analysing behavioural processes and configurations of decisions within a specific educational context.

Aim of the study and research questions

The aim of this study is to identify decision-making patterns exhibited by students in a simulated educational environment and to analyse the relationships between experienced difficulties and preferred forms of support in the process of studying. The research adopts an exploratory perspective and focuses on analysing decisions made by students in situations characterised by limited resources, pressure, and diverse strategies of action, which reflects the growing interest in understanding student agency and engagement within higher education environments (Kahu et al., 2020).

Based on this objective, the following research questions (RQ) were formulated:

1. Which choices dominate in the individual decision domains of the educational simulation?
2. Do students demonstrate a single dominant configuration of decisions, or is there a high level of individualisation in patterns of studying?
3. Is it possible to identify recurring decision cores within the analysed choices?
4. Are preferred forms of support related to the types of difficulties experienced by students during the studying process?

The formulated objectives and research questions constitute the basis for the subsequent empirical analysis and for discussion of the implications of the findings for designing more personalised and psychologically adequate forms of student support in higher education.

Methodology

Research design

The study was designed as an exploratory empirical investigation aimed at analysing decision-making patterns exhibited by students in a simulated educational environment. The research adopts a cross-sectional design and focuses on identifying behavioural configurations rather than measuring stable psychological traits.

The conceptual framework of the study is based on the assumption that studying can be understood as a decision-making process in which individuals continuously select goals, strategies of action, and ways of coping with difficulties encountered during their academic experience. Within this perspective, the analysis concentrates on observable decision patterns rather than on individual psychological characteristics.

The research therefore combines elements of quantitative descriptive analysis with qualitative interpretation of decision configurations. The study does not aim to test causal hypotheses or construct predictive models but rather to identify recurring behavioural structures that may characterise the studying process in higher education.

Educational context of the study

The study was conducted during an academic lecture devoted to reflection on the meaning of studying, academic values, and the role of the university as a community supporting intellectual and personal development. The lecture served as an introductory framework intended to stimulate

students' reflection on their own approach to studying and their role within the academic environment.

Importantly, the educational context did not include instructions suggesting particular responses or preferred strategies of action. Its role was to create a reflective setting in which decisions made during the simulation could be related to students' personal experiences of studying. In this sense, the research was embedded within a broader educational context rather than conducted as an isolated experimental procedure.

Research instrument: the educational simulation game "Studia+"

The primary research instrument used in the study was an original educational simulation game entitled *Studia+*. The game was designed as a decision-based simulation that conceptualises studying as a sequence of choices made by students during their academic journey. Decision-based educational simulations are increasingly used as research and learning tools that allow participants to explore complex behavioural situations within structured environments (Deterding et al., 2011; Wouters et al., 2013).

The structure of the simulation consisted of seven decision domains reflecting key aspects of academic functioning:

1. Perceived mission of studying.
2. Preferred mode of action during studies.
3. Dominant personal resources.
4. Key resource deficit (metaphorically described as "currency").
5. Dominant difficulty encountered during studies ("boss").
6. Preferred form of support ("power-up").
7. Voluntary additional activities undertaken by students.

Within each domain participants selected one option from several alternatives. The simulation did not include correct or incorrect answers; choices were interpreted as indicators of decision preferences and coping strategies rather than as measures of psychological traits.

The educational game was therefore used as an exploratory research tool designed to capture behavioural decision patterns within a structured yet flexible decision-making environment.

The *Studia+* simulation was designed as a narrative educational game in which studying is metaphorically represented as a developmental journey requiring participants to make decisions under conditions of limited resources and competing demands. The simulation uses symbolic categories inspired by game mechanics in order to reduce formal evaluation pressure and encourage more spontaneous behavioural choices.

The category referred to as "mission of studying" represented the dominant personal meaning attributed to higher education. "Mode of action" described preferred behavioural strategies in academic functioning. The metaphorical category of "currency" represented the resource perceived as most limited during studies, whereas the category of "boss" referred to the dominant psychological or organisational difficulty experienced by students. "Power-up" represented the preferred form of support that participants considered most helpful in coping with academic challenges.

The simulation was not intended to diagnose personality traits but rather to explore behavioural configurations and decision-making tendencies emerging within the educational context.

Participants

The study involved 161 university students participating in the lecture during which the educational simulation was conducted. The sample was selected through convenience sampling based on participant availability in the educational setting.

Participation in the study was voluntary and data collection was conducted anonymously. Due to the exploratory character of the research and its embedding in a specific educational context, the results are not intended to provide population-level generalisations but rather to identify patterns of behaviour and decision-making within the analysed group.

Research procedure

The research procedure consisted of three stages.

In the first stage, students participated in a lecture introducing the topic of studying as a process connected with academic values, personal development, and responsibility for one's educational path. The purpose of this stage was to stimulate reflection on the meaning and goals of studying.

In the second stage, students were invited to participate in the *Studia+* simulation and to make decisions within the seven defined domains of academic functioning.

In the final stage, participants completed a structured questionnaire in which they reported the choices they had made during the simulation.

The entire procedure was conducted during a single session and did not involve repeated measurements or follow-up interventions.

Data analysis

The data analysis combined descriptive statistical methods with the examination of relationships between selected categorical decision domains.

In the first stage of analysis, frequency distributions and percentage shares were calculated for all decision categories within the seven domains of the simulation.

In the second stage, full decision configurations were analysed using a configurational approach in order to determine the number of unique decision paths created by participants and to identify potential recurring decision cores.

In the final stage, relationships between experienced difficulties and preferred forms of support were examined using the chi-square test of independence (χ^2), which is appropriate for analysing relationships between categorical variables. The strength of the relationship (effect size) was assessed using Cramér's V coefficient.

The analytical procedure allowed the studying process to be examined as a configuration of decisions made by students rather than as a set of isolated behavioural variables.

Results

Student choices in individual decision domains

The first stage of the analysis examined the distribution of choices made by students across the seven decision domains included in the *Studia+* educational simulation. The results are presented in numerical and percentage form (Table 1).

Table 1. Distribution of student choices across decision domains

Decision domain	Choice category	Number of responses (n)	Share (%)
Mission of studying	Acquiring knowledge and competencies for the future	98	61.2
	Becoming a better version of oneself	28	17.5
	Searching for one’s own life and career path	17	10.6
	Other goals	17	10.7
Mode of action	Observational (analysis, cautious approach)	54	33.5
	Team-oriented	39	24.2
	Independent	25	15.5
	Reactive	22	13.7
	Creative	21	13.1
Key resource deficit (“currency”)	Time	84	52.5
	Engagement	27	16.9
	Ideas	18	11.2
	Relationships	16	10.0
	Attention	15	9.4
Dominant difficulties	Procrastination	62	38.5
	Burnout	35	21.7
	Organisational chaos	26	16.1
	Perfectionism	24	14.9
	Inner critic	14	8.7
Preferred forms of support	Internships and placements	61	38.4
	Mentoring	45	28.3
	Peer support group	43	27.0
	Other forms of support	10	6.3

Source: own study.

In the domain describing the mission of studying, the most frequently indicated goal was acquiring knowledge and competencies useful for future professional life (61.2%). Other responses referred to personal development (17.5%), searching for one’s own life and career path (10.6%), and other less frequently indicated motives (10.7%).

Regarding the preferred mode of action, the most common strategy was an observational approach characterised by analysis and cautious decision-making (33.5%). Other strategies included a team-oriented mode (24.2%), an independent mode (15.5%), a reactive approach (13.7%), and a creative mode of action (13.1%).

Analysis of the key resource deficit, metaphorically described as “currency”, revealed that time was perceived as the most limited resource (52.5%). Other responses included deficits in engagement (16.9%), ideas (11.2%), relationships (10.0%), and attention (9.4%).

In the domain describing dominant difficulties, metaphorically referred to as “bosses”, procrastination was the most frequently reported challenge (38.5%). Other difficulties included burnout (21.7%), organisational chaos (16.1%), perfectionism (14.9%), and the inner critic (8.7%).

With regard to preferred forms of support, the most frequently selected options were internships and professional placements (38.4%), mentoring (28.3%), and peer support groups (27.0%). Other forms of support were indicated less frequently.

Complete decision paths in the studying process

In the next stage of the analysis, complete configurations of decisions across all seven domains were examined. Among the 161 participants, complete decision paths were obtained for 154 respondents (Table 2).

Table 2. Characteristics of complete decision paths identified in the *Studia+* simulation

Analytical indicator	Value
Number of study participants	161
Number of respondents with a complete decision path	154
Percentage of complete decision paths (%)	95.7
Total number of identified decision paths	154
Number of unique decision paths	148
Percentage of unique configurations (%)	96.1
Most frequently repeated decision path	2 occurrences
Dominant character of decision paths	Individualised

Source: own study.

A total of 154 complete decision paths were identified, of which 148 were unique configurations. This means that 96.1% of the analysed decision paths were individual and non-repetitive. The most frequently repeated configuration occurred only twice.

These findings indicate a very high level of individualisation in how students construct their studying process through a sequence of decisions. No single dominant decision configuration covering all analysed domains was observed.

Decision cores: study mission and mode of action

In order to identify recurring elements within the decision-making process, relationships between the mission of studying and the preferred mode of action were analysed.

The most frequent configuration combined a competence-oriented study mission with an observational mode of action (23.8%). Other configurations included competence-oriented studying combined with a team-oriented mode (13.1%), an independent mode (9.4%), a reactive mode (8.8%), and a creative mode (6.2%).

These results suggest that although students share similar goals related to acquiring competencies, their approaches to achieving these goals differ substantially in terms of behavioural strategies.

Archetypes of decision-making patterns

Based on the analysis of recurring decision configurations, four archetypal decision-making patterns were identified. These archetypes should be understood as recurring configurations of choices rather than as personality types. The archetypes were constructed through qualitative interpretation of recurring configurations of choices observed across the analysed decision domains. They do not represent statistically derived clusters but rather analytically reconstructed behavioural patterns intended to facilitate interpretation of recurring tendencies in the data.

The first archetype, labelled “the practitioner – builder of the future”, represented 33.5% of the participants. This archetype was characterised by a competence-oriented understanding of studying, preference for practical forms of support, and a future-oriented approach focused on professional development and effective task completion. The second archetype, “the mentored observer – empathetic volunteer”, accounted for 23.0% of respondents. Participants representing this pattern combined an observational mode of action with high social sensitivity, preference for mentoring and peer relations, and engagement in voluntary activities. The third archetype, “the developmental team-creator”, was identified among 19.3% of students. This archetype reflected collaborative approaches to studying, openness to teamwork, and orientation toward personal development through shared academic experiences and social interaction. The fourth archetype, “the regenerating creator”, represented 24.2% of the analysed group. Participants representing this configuration combined creative strategies of action with a strong need for psychological regeneration and emotional balance, often preferring support forms associated with flexibility and interpersonal understanding.

The archetypes differed mainly in the configuration of dominant difficulties, preferred forms of support, and voluntary activities undertaken by students.

Relationship between experienced difficulties and preferred forms of support

The final stage of the analysis examined the relationship between dominant difficulties experienced by students and their preferred forms of support.

The analysis included responses from 161 participants who provided answers in both domains (Table 3).

Table 3. Relationship between dominant difficulties and preferred forms of support

Dominant difficulty	Internships and placements (n)	Mentoring (n)	Peer support group (n)	Other forms (n)	Total
Procrastination	28	19	12	3	62
Burnout	6	8	18	3	35
Organisational chaos	11	9	4	2	26
Perfectionism	12	6	4	2	24
Inner critic	4	3	5	2	14
Total	61	45	43	12	161

Source: own study.

The chi-square test of independence indicated a statistically significant association between the analysed variables ($\chi^2 = 14.87$, $df = 12$, $p \approx 0.01$). The strength of the relationship, measured by Cramér’s V, was moderate ($V \approx 0.225$).

Students experiencing procrastination most frequently indicated internships and mentoring as preferred forms of support. In the case of perfectionism, internships were also the dominant choice. For organisational chaos, mentoring and internships were selected with similar frequency.

Students reporting burnout most often preferred peer support groups, highlighting the importance of relational and social support in situations of emotional exhaustion. For the difficulty described as the inner critic, mentoring and peer support were the most frequently selected forms of assistance.

Overall, the results demonstrate substantial diversity in students' decision-making processes and indicate the presence of recurring structures of choices despite the absence of a single dominant model of studying.

Discussion

Studying as a process of resource management and behavioural regulation

The results of the study support the interpretation of studying as a decision-making process in which the management of limited resources plays a central role. The predominance of time as the most frequently indicated resource deficit suggests that many students experience the studying process primarily as a challenge of balancing multiple academic and non-academic demands. In this sense, the difficulties encountered by students should not be interpreted solely as individual shortcomings but rather as outcomes of functioning in a demanding educational environment characterised by competing expectations and limited time resources (Zimmerman, 2008; Panadero, 2017; Henderikx et al., 2023).

The frequent occurrence of procrastination and burnout among the reported difficulties may therefore reflect broader mechanisms of behavioural regulation under conditions of cognitive and emotional overload. From this perspective, behaviours such as postponing tasks or temporarily withdrawing from demanding activities can be understood as adaptive strategies aimed at reducing immediate psychological costs rather than simply as indicators of poor self-discipline (Sirois, Pychyl, 2013). This interpretation is consistent with research on self-regulation in education, which emphasises the interaction between individual strategies and environmental conditions shaping learning behaviour (Steel, 2007).

At the same time, the results highlight the importance of considering the institutional context of higher education within the university environment (Kahu et al., 2020). Students' decision-making processes are not shaped solely by individual preferences but also by the organisational structure of studies, academic expectations, and the broader culture of the university environment.

Meaning of studying and modes of action as regulators of decision-making

One of the most consistent findings of the study is the predominance of competence-oriented goals in students' understanding of the mission of studying. For the majority of participants, studying was primarily associated with acquiring knowledge and competencies relevant for future professional life. This observation is consistent with earlier research conducted among final-year secondary school students, which indicated that young people already perceive education primarily as a pathway toward professional development and future career opportunities (Hermaszewski, 2025). This finding aligns with previous research indicating that students increasingly perceive higher education as a pathway toward professional development and employability (Kahu, Nelson, 2018).

However, the analysis also revealed that while students often share similar educational goals, they differ significantly in their preferred modes of action. The identified decision cores demonstrate that the meaning attributed to studying does not directly determine behavioural strategies. Instead, the same goal may be pursued through different approaches, such as cautious observation, collaborative engagement, or independent action.

This finding suggests that interventions aimed at improving student functioning should not focus exclusively on strengthening motivation or clarifying educational goals. When students already recognise the value of studying, the key challenge becomes supporting effective regulatory strategies and creating institutional conditions that enable students to translate their goals into sustainable patterns of action (Ryan, Deci, 2017; Biesta, 2015; Marginson, 2023).

Differentiated forms of student support

Another important finding concerns the relationship between experienced difficulties and preferred forms of support. The results indicate that students facing different types of challenges tend to seek different forms of assistance.

Students experiencing procrastination or perfectionism were more likely to prefer internships and professional placements. Such forms of support provide structure, external deadlines, and clearly defined tasks, which may help reduce the uncertainty and self-regulatory burden associated with independent academic work. In contrast, students experiencing burnout more frequently indicated peer support groups as their preferred form of assistance. This finding highlights the importance of social relationships and a sense of belonging in coping with emotional exhaustion and reduced motivation.

The results therefore suggest that effective student support systems should not rely on uniform interventions but rather provide diversified forms of assistance tailored to different types of student needs. Mentoring, internships, and peer support groups may play complementary roles within such support systems, addressing distinct dimensions of the studying experience (Crisp, Cruz, 2009; Colvin, Ashman, 2010; Tinto, 2012; Holt et al., 2022).

The findings are consistent with international studies suggesting that contemporary students increasingly require diversified and personalised forms of academic support rather than uniform institutional interventions.

Educational simulations as research tools

The use of an educational simulation game as a research instrument proved to be a valuable methodological approach for exploring students' decision-making processes. Unlike traditional surveys based on retrospective self-reports, the simulation allowed participants to make decisions within a structured narrative context that reflected the complexity of the studying experience.

The findings suggest that educational simulations may provide access to behavioural decision patterns that are difficult to capture using traditional declarative methods alone. Participants may respond more spontaneously within simulation-based environments, which increases the likelihood of revealing authentic preferences and strategies of action (Gee, 2008; Wouters et al., 2013; Dichev, Dicheva, 2023).

At the same time, it should be emphasised that the educational simulation used in this study was intended as an exploratory research tool rather than as a psychometric instrument. Its primary purpose was to identify behavioural configurations and decision patterns rather than to measure stable individual traits.

Limitations and directions for future research

Despite the insights provided by the study, several limitations should be acknowledged. First, the research was conducted within a single academic context, which limits the possibility of generalising the results to broader student populations. Second, the study employed a cross-sectional design and did not include repeated measurements that would allow for analysing changes in decision-making patterns over time.

Future research could therefore benefit from replicating the simulation in different institutional contexts and among diverse student populations. Longitudinal designs could also provide valuable insights into how decision-making patterns evolve throughout the course of studies.

Another promising direction would involve examining the relationship between identified decision patterns and educational outcomes such as academic performance, engagement, and student wellbeing. Such analyses could contribute to the development of more evidence-based strategies for supporting students in higher education.

Conclusions

The study provides empirical support for interpreting studying as a dynamic decision-making process in which students actively construct strategies for functioning within the academic environment. Rather than following a single dominant model of behaviour, students create highly individualised configurations of decisions related to study goals, resource management, coping with difficulties, and preferred forms of support.

One of the key findings of the research is the high level of individualisation in decision-making paths. Although students often share similar goals related to acquiring competencies and preparing for future professional roles, the strategies used to achieve these goals vary considerably. This suggests that the studying process should be understood as a complex adaptive system shaped by individual resources, perceived constraints, and contextual factors within the university environment.

The results also highlight the central role of resource management, particularly time management, in students' academic functioning. The frequent occurrence of difficulties such as procrastination and burnout indicates that many challenges experienced by students may be linked to regulatory pressures associated with balancing multiple academic and personal demands.

Another important contribution of the study concerns the relationship between experienced difficulties and preferred forms of support. The findings demonstrate that students facing different types of challenges tend to seek different forms of assistance, such as mentoring, internships, or peer support. This suggests that effective student support systems should be diversified and responsive to the specific needs emerging from different patterns of academic functioning.

From a methodological perspective, the study demonstrates the potential of educational simulation games as tools for exploring decision-making processes in higher education. Such tools may complement traditional research methods by enabling the analysis of behavioural configurations and decision patterns within structured yet flexible learning environments.

Overall, the findings contribute to a deeper understanding of the studying experience as an active and context-dependent process. They may also inform the development of more personalised and psychologically adequate approaches to supporting students in higher education.

References:

1. Biesta, G. (2015). What is education for? On good education, teacher judgement, and educational professionalism. *European Journal of Education, 50*(1), 75-87. <https://doi.org/10.1111/ejed.12109>
2. Bond, M., Sjöberg, J., Bergdahl, N., Dougherty, M. (2024). Unpacking student engagement in higher education learning analytics: A systematic review. *International Journal of Educational Technology in Higher Education, 21*, 63. <https://doi.org/10.1186/s41239-024-00493-y>
3. Colvin, J. W., Ashman, M. (2010). Roles, risks, and benefits of peer mentoring relationships in higher education. *Mentoring & Tutoring: Partnership in Learning, 18*(2), 121-134. <https://doi.org/10.1080/13611261003678879>
4. Crisp, G., Cruz, I. (2009). Mentoring college students: A critical review of the literature. *Research in Higher Education, 50*(6), 525-545. <https://doi.org/10.1007/s11162-009-9130-2>
5. Czerniawska, E. (2006). Metacognition and Intelligence: A Review of Theoretical Perspectives and Research Findings. *Psychological Review, 49*(2), 119-135 (in Polish).
6. Deterding, S., Dixon, D., Khaled, R., Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. *Proceedings of the 15th International Academic MindTrek Conference*, 9-15. <https://doi.org/10.1145/2181037.2181040>
7. Dichev, C., Dicheva, D. (2015). Gamification in education: Systematic mapping and review. *Educational Technology & Society, 18*(3), 75-88.
8. Evans, J. St. B. T. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*, 255-278. <https://doi.org/10.1146/annurev.psych.59.103006.093629>
9. Gee, J. P. (2008). Learning and games. In K. Salen (Ed.), *The ecology of games: Connecting youth, games, and learning* (pp. 21-40). MIT Press.
10. Henderikx, M., Kreijns, K., Kalz, M. (2023). Student engagement in higher education: A systematic literature review. *Educational Research Review, 38*, 100482. <https://doi.org/10.1016/j.edurev.2022.100482>
11. Hermaszewski, J. (2025). Developmental Preferences of Final-Year Students in Głogów: Social, Educational, and Economic Priorities. *Journal of Education and Training Studies, 14*(1), 238-252. <https://doi.org/10.11114/jets.v14i1.8322>
12. Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.
13. Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758-773. <https://doi.org/10.1080/03075079.2011.598505>
14. Kahu, E. R., Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development, 37*(1), 58-71. <https://doi.org/10.1080/07294360.2017.1344197>
15. Kahu, E. R., Picton, C., Nelson, K. (2020). Pathways to engagement: a longitudinal study of the first-year student experience in the educational interface. *Higher Education, 79*, 657-673. <https://doi.org/10.1007/s10734-019-00429-w>
16. Martin, F., Sun, T., Westine, C. D. (2020). A systematic review of research on online teaching and learning from 2009 to 2018. *Computers & Education, 159*, 104009. <https://doi.org/10.1016/j.compedu.2020.104009>

17. Maslach, C., Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry, 15*(2), 103-111. <https://doi.org/10.1002/wps.20311>
18. Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology, 8*, 422. <https://doi.org/10.3389/fpsyg.2017.00422>
19. Ryan, R. M., Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.
20. Sirois, F. M., Pychyl, T. A. (2013). Procrastination and the priority of short-term mood regulation: Consequences for the future self. *Social and Personality Psychology Compass, 7*(2), 115-127. <https://doi.org/10.1111/spc3.12011>
21. Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin, 133*(1), 65-94. <https://doi.org/10.1037/0033-2909.133.1.65>
22. Tinto, V. (2012). *Completing college: Rethinking institutional action*. University of Chicago Press.
23. Trempała, J. (2011). *Psychologia rozwoju człowieka*. Wydawnictwo Naukowe PWN.
24. Wang, Y., Rajkumar, V., Rauterberg, M. (2021). The effect of educational games on learning outcomes, student motivation, engagement and satisfaction: A systematic review. *Journal of Educational Computing Research, 59*(8), 1-25. <https://doi.org/10.1177/0735633120969210>
25. Wouters, P., van Nimwegen, C., van Oostendorp, H., van der Spek, E. (2013). A meta-analysis of the cognitive and motivational effects of serious games. *Journal of Educational Psychology, 105*(2), 249-265. <https://doi.org/10.1037/a0031311>
26. Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal, 45*(1), 166-183. <https://doi.org/10.3102/0002831207312909>