Educational Possibilities of Gamification in the Formation of Soft & Hard Skills among Students of Socionomic Professions

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ABSTRACT

Aim. The purpose of the research is to establish a connection between the indicators of the effectiveness of soft and hard skills formation in students of socionomic professions through the use of gamification methods and to determine the impact of gamification on the development of individual soft and hard skills.

Methods. The research methods are a content analysis of specialised literature, an online survey of students of socionomic professions using Google Forms, and a pedagogical experiment with comprehensive data processing. The research material consists of the empirical experience of gamification in developing soft and hard skills in students of socionomic professions, based on the creation of a virtual professional community "School of Professional Growth," during independent work. The interactive educational environment incorporates key components: game mechanics aligned with pedagogical outcomes, interactive tasks, and social interaction.

Results. The results of the experiment confirmed the hypothesis: students in the experimental group showed increased interest in classes, were better adapted to nonstandard situations, demonstrated flexibility of thinking, and improved their hard skills compared to the control group.

Conclusion. The study reveals that gamification not only enhances student engagement and motivation but also fosters their professional growth by developing essential soft and hard skills for success in the socio-economic sphere. The integration within gamification of storylines, roles, characters, problem situations, and elements of unpredictability immerses students in professionally relevant situations, enhancing both their soft and hard skills.

Keywords: gamification, interactive technologies, soft skills, hard skills, students, socionomic professions, independent work

INTRODUCTION

Contemporary higher education is at a "strategic point of influence" of conflicting trends and factors (Alam et al., 2023; Mago et al., 2023; Fila et al., 2024) re-

lated to globalisation. The transition of the education system to new technologies has prioritised the digital model (Bartolomé et al., 2018). As a result of the significant influence of innovative technologies, educational goals are undergoing a radical transformation (Ben-Shalom et al., 2023; Ma et al., 2025), and the conditions of educational interaction (spatial-temporal, resource, instrumental, and subject) are changing (Kondrla et al., 2023). The trends in the development of modern higher education are the transformation of educational demand, embodied in educational goals and the digitalisation of education (Savitska, 2022), the expansion of the range of conditions for the deployment of the educational process (Budayová, Pavliková et al., 2022; Budayová, Svoboda et al., 2022), and changes in the format of interaction in the educational process (Alfaqiri et al., 2020; Sheremet et al., 2022). In the information society, classical forms and methods of teaching have become outdated and ineffective (Lobotková, 2018; Park et al., 2019).

The digitisation of the educational sector involves the implementation of artificial intelligence systems (Dahri et al., 2025; Pidbutska et al., 2022) aimed at transforming the administration of higher education institutions (Kalogiannakis et al., 2021) and teaching practices (Černek et al., 2023; Durrani et al., 2022; Sirotová, & Lobotková, 2018). The implementation of various innovations in the educational sphere has intensified virtual and augmented reality technologies (Alomari et al., 2019), and the Internet of Things (training modules, digital laboratories, 3D modeling, robotics, blockchains, etc.) (Dervishaj et al., 2024). The focus on digital technologies in modern higher education makes gamification a key trend (Savitska & Krychkivska, 2022) and an essential factor in expanding educational opportunities for students (Savitska et al., 2025). In the United States and Western Europe, gamification is well-known as an effective method suitable for various age groups. Projects like Minecraft or Civilization V are in demand in government institutions and enterprises, as well as in the educational process in secondary and higher education (Alomari et al., 2019). The need for gamification is often explained by the characteristics of modern students (Faiella et al., 2015; Tkáčová et al., 2023). Generation Z represents a considerable shift in cognitive patterns, including decreased motivation to learn, a decline in abstract thinking, and a preference for simplification (Tamášová et al., 2024). They often experience rapid fatigue and tend to seek information rather than engage in deep analysis (Altomari et al., 2023; Lesková et al., 2023). The proposed solution is game-based learning technologies, which can significantly improve academic performance and increase motivation to learn (Hursen et al., 2019). They are attractive because of their ease of use, clarity, visualisation, and widespread availability of computers (Hussein et al., 2023).

In a modern dynamic world where digital technologies are penetrating every sphere of life and transforming it, socionomic (human-centered) professions are becoming increasingly relevant (Tkáčová & Pavlikova, 2024). Socinomic professions address issues related to social relations in society, focusing on the development, regulation, and study of social patterns and trends (Yankovska et al., 2022; Zhu et al., 2025),

as well as the preservation and transformation of historically defined and socially accepted forms of culture (Chernous et al., 2024; Olah et al., 2024) and traditions at all levels of social interaction (psychologist, educator, social worker, journalist, political scientist, sociologist, legal direction).

The following competencies are becoming relevant for a successful career in the socionomic sphere in the context of digital transformation: digital literacy, responsibility, communication skills (Petlák et al., 2023; Taraj et al., 2023), analytical thinking, interest in the specialty (Botke et al., 2018), creativity, and teamwork skills. Gamification is a powerful tool where game elements and rules are applied in non-game contexts to develop creative thinking, flexible skills, and student's ability to adapt to various situations.

Research Questions of the Study

The purpose of this research is to establish a connection between the indicators of the effectiveness of soft and hard skills formation in students of socionomic professions, achieved through the use of gamification methods, and to determine the impact of gamification on the development of individual soft and hard skills. The objectives of the research are:
- To clarify the concept of gamification as it relates to higher education;
- based on the analysis of scientific research to identify the prerequisites and circumstances that allow the use of gaming technologies and practices, games, and their elements as educational tools;
- to systematise and characterise gamification tools for developing soft and hard skills in students of socionomic professions.

The article's limitations arise from a lack of a unified perspective on gamification. However, there is an understanding that gamification is a unique tool capable of motivating and directing educational activities, raising them to a new level of quality. It requires focused, collaborative efforts to systematise theoretical knowledge and organise experimental work in environments that facilitate the use of gamification resources in education.

Literature Review

A System of Viewpoints on the Concept and Content of Gamification

With the development of digital technologies, gamification is becoming a popular tool used in education (Dervishaj & Presi, 2024; Khonamri et al., 2024), marketing

(Lab & Douglas, 2020), healthcare (Buzzalova et al., 2024; Svoboda et al., 2024), and other areas. The main approaches and concepts of gamification are a wide range of strategies aimed at engaging and motivating users through the gaming experience. In 2019, TalentLMS1 conducted a large-scale survey among students and found that 61% of respondents undergo training using gamification, and 83% of students who studied using gamification reported high motivation to learn (Apostolopoulos, 2019). Gamification remains one of the most popular educational technologies year on year.

The literature contains data on various educational gamification projects with different levels, scales, and target audiences (Buckley & Doyle, 2016), opportunities to improve student performance (Legaki et al., 2020), and the presence of a high educational effect (Chou, 2019). Gamification is rooted in games, which have traditionally been a source of knowledge and ideas about the world and humanity, as well as a means of transmitting fundamental spiritual values and the meanings of culture and era (Roseni & Muho, 2024). Nowadays, the understanding of the essence and functions of games has evolved. The emphasis has shifted from games as the leading type of activity for children to games as a common type of activity, a way of spending time for adult persons (Skok, 2016). Games are no longer an element of something but have become a full-fledged socio-psychological mechanism of activity. It is a unique concept of transforming life into a game, a phenomenon of postmodern culture. Changes in gaming technology are causing a profound transformation in the psychological status of a person immersed in gaming, as the motivation for modern virtual gaming differs significantly from that of traditional gaming (Park et al., 2019). Previously, the meaning of gaming activity focused on the creative component, on constructing its own unique space (Urh et al., 2015). Modern games in the virtual world are oriented "not toward creating the environment necessary for the individual, but toward mastering the skill of adapting and submitting to rapidly changing situations" (McGowan et al., 2023, p. 7).

In defining the specifics of gamification, Deterding and co-authors understand "the use of game design elements in non-game contexts" as key to this process (Deterding et al., 2011, p. 7). Claudia Cardinale Nunes Menezes and Robélius De Bortolli (2016) believe that gamification in education has special characteristics. First, gamification, gaming, and gameplay (the game process) must be a part of the educational space to demonstrate its specifics and possible ways of development. Second, the gamification system must have unifying contacts and a narrative (plot, story). Third, a system of relationships that emphasises cuonstructive links between actors plays a special role in gamification. Fourth, gamification stimulates the development of innovative assessment systems in education (Menezes & Bortolli, 2016). Gamification is a theory and practice of education that encompasses game patterns and principles, methods and techniques, technologies, techniques, and mechanics used to manage the motivation and behaviour of subjects of educational activities.

Gamification is used in education to improve cognitive engagement, motivation to learn, and student involvement in the learning process. More often, it combines

elements of competition, rewards, and progression, which ensures better assimilation of material and active participation of students in learning activities. Successful examples of gamification include quizzes, interactive lectures, and educational games that reinforce knowledge and develop skills more engagingly.

Based on an analysis of scientific research, the authors of the article have summarised their taxonomy of effective gamification tools in Table 1.

Table 1

Gamification Tools

No.	Name	Characteristics	Tools for creation
1.	Interactive presentations	They enable the audience to shift from being passive listeners to active participants in the learning process. Interactive presentations include quizzes, clickable images, maps, and animations.	PowerPoint, Libre Office, Open Office
2.	Quizzes	A series of tasks or situations that the user solves. Participants answer questions, often in a hurry, earn points, and form an internal ranking.	Kahoot!, Mentimeter, Google Forms, Acadly
3.	Score system and store	The user performs targeted actions and receives points for them. It is possible to create a store where users can exchange points earned through learning for real items. It is a motivation system for an audience that values encouragement for their work.	From Google Sheets to LMS
4.	Rankings and leaderboards	Ratings among users are formed based on the points received. Individual and team ratings inspire a competitive spirit and motivation.	
5.	Learning map	The map is a navigator for training courses. It displays all training modules and the user's current progress.	Figma, LMS
6.	Badges, pins, and awards	The user performs targeted actions and receives rewards for them. It allows them to consolidate their achievements and visualise the skills they have acquired.	Figma, Pinterest, Midjourney, Stable Diffusion
7.	Timers	Time limits energise the audience and improve the overall dynamics of the performance. Ability to link the timer to the story. For example, a video titled "How to prepare for a speech in 10 minutes" with a countdown timer that the speaker can check.	Mobile and desktop applications, Elfsight
8.	Narrative design	Styling content under a single creative concept. The narrative includes story, space, game mechanics, and design.	Figma, Pinterest, Midjourney, Stable Diffusion.
9.	Storytelling	Using drama techniques in teaching. For example, a storyline, a character with whom the user identifies, or a guide character.	Typeform, LMS, presentations

No.	Name	Characteristics	Tools for creation
10.	Chatbots and newsletters	Chatbots are used as a form of quest or to send game messages to participants. For example, if a guide character is present in a training course, they can write to the participants.	@BotFather in Telegram, hard – BotHelp, BroBot.
11.	Multimedia long reads	A website containing interactive and multimedia elements: images, videos, infographics, tests, and games. It is suitable when you need to convey a large amount of information and hold the audience's attention.	Tilda, Readymag, Medium, Notion
12.	Interactive videos	The user views part of the content and then answers questions about it. Only after answering can they proceed to further viewing. In one implementation option, the rest of the content depends on the answer.	Playposit, Edpuzzle, H5P, Movika

Source. Own research.

Choosing Game Mechanics

Game mechanics are specific established rules and feedback mechanisms designed to ensure exciting gameplay – a view of the game process from the player's perspective (Kim et al., 2018; Kalogiannakis et al., 2021). Game mechanics act as constructive elements that are used and combined with the game (Mårell-Olsson, 2021) and narrative context (Kim et al., 2018). The authors of the article summarised powerful game mechanics for training students in socionomic professions.

Table 2

Effective Game Mechanics in Teaching Students of Socionomic Professions

No	Name	Characteristics
1.	Achievements	The game records the student's achievements. Each time the player starts the game, they try to earn more points than before. The teacher sets the criteria for earning points, especially using computer simulation tools within the discipline. These tools measure achievements, enable users to compare their progress with others, and motivate them to reach new levels or goals.
2.	Appointment Dynamics	Game dynamics where students must join the game at specific locations or intervals to achieve positive outcomes. Creating a study schedule with predetermined times for completing special tasks within a single project allows for the mobilisation of the student team.
3.	Community Collaboration	A game dynamic in which an entire community comes together to work together and solve a puzzle, solve a problem, or pass a test. This technique is effective for forming temporary collaborations between different student groups to achieve a synergistic effect from solving a more complex task within a large project.

No	Name	Characteristics
4.	Game Mechanic: Countdown	A dynamic in which students have some time to complete a task. It creates a schedule of activity. The use of speed tasks during classroom sessions means that a team of students who do not finish on time automatically loses points or are eliminated from the game.
5.	Levels	Leveling up is the best motivational component of games for gamers. In the game, students have the opportunity to improve their talents as they level up. The more talents available to players, the more powerful their characters become (Kim & Castelli, 2021). We can use this technique in the learning process. A team that reaches the maximum level can automatically pass an exam in a discipline.
6.	Quests	The use of quests in teaching students of socinomic professions, with the integration of multitasking into the preparation of specific projects, will ensure the development of creative skills in the student team.
7.	Socialization	Any communication tools (comments, feedback forms, discussions, reviews) are suitable to attract and retain users. This technique is effective when used in the form of a chat with a teacher and other teams, which is now possible with any messenger, such as Telegram.

Source. Own research.

This wide range of gamification techniques demonstrates its incredible potential in creating learning tasks and activities that encourage students to achieve specific goals and progress in their studies. They also make it possible to create educational environments where students can safely experiment and learn from their mistakes, which helps them develop hard and soft skills.

Methods

The research was conducted with students of socionomic professions (majoring in Social Work, Psychology, Journalism, Information, Library, and Archival Studies). The total number of participants was 384 students. The study involved a comparative analysis of two subgroups of students: a test group (group 1 (n = 206)), which used various gamification tools to develop soft and hard skills during self-education activities, and a control group (group 2 [n = 178]), which used traditional methods.

This study aims to analyse and determine the impact of gamification on the development of soft and hard skills in students of socionomic professions.

Data collection was carried out between September and December 2024 among interested students using online surveys created with Google Forms. The questionnaire consisted of two sections. The first section aimed to assess the level of engagement in the learning process, while the second session contained questions regarding students' attitudes towards gamification in the educational process.

Qualitative analysis involved thematic analysis of students' text responses to open-ended questions. The data was coded, and key themes were identified, analysed, and compared between groups.

The application of content analysis and thematic category analysis methods enabled the identification of gamification's impact on students' professional development.

Ethical standards were strictly adhered to. All participants provided informed consent electronically before completing the form. We maintained the confidentiality of participants' data and presented the analysis results in a generalised format without disclosing any personal information.

Results

The LMS Moodle resources for embedding educational content into self-study activities and increasing student motivation are considered. Gamification was used to develop both soft and hard skills in students through a virtual professional community for future specialists in socionomic professions called the 'School of Professional Growth' during their independent work. The virtual school was used in addition to traditional learning to individualise the educational trajectory of students. The goal of gamification in developing both soft and hard skills in students pursuing socionomic professions is to create an interactive educational environment. This environment serves as a motivating context that encourages students to engage in learning activities connected to their professional development. The gamified interactive educational environment integrates key components: game mechanics aligned with educational outcomes, interactive tasks, and social interaction. The core focus is the two-way interaction between teacher and student, accompanied by adaptive feedback. To encourage interactive communication and capture student interest, tools such as Mentimeter, Kahoot, Jeopardylabs, etc. are recommended for educational use.

Interactive tasks were a crucial element of the model designed to promote active participation among students. Interactive tasks included case studies, role-playing games, quizzes, and quests. It enabled teachers to receive feedback on students' understanding and adjust the educational process based on the results while students improved their critical thinking and problem-solving skills.

Game mechanics are a key element of any gamification model, as they distinguish the usual process from the gamified one. Properly selected game mechanics ensure the development of student engagement, increased motivation, and higher performance indicators.

Social interaction ensured the development of teamwork skills, communication skills, and the strengthening of social ties among students. Social interaction happened through team tasks for students (group projects, joint case studies, team quizzes, or games) or group discussions (debates, brainstorming sessions).

Adaptive feedback involves two-way communication between the teacher and the student. It was based on the process of formative assessment. The progress of students in socionomic professions was assessed based on observation of their participation in interactive tasks, role-playing games, and discussions. This approach made learning more dynamic and appropriate for the level of training of students in socio-economic professions.

Within the virtual community, students in the experimental group experienced various stages of professional development, encountering dilemmas and problems that they would face in their future careers.

In each virtual class, students participated in various game activities related to the professional and communicative activities of specialists in socionomic professions. The introduction of storylines, roles and characters, problem situations, and elements of unpredictability contributed to a deep immersion in the learning process and increased engagement. For example, in practical classes, students solved ethical dilemmas in the socionomic sphere during role-playing games, participated in quests, modelled professional situations, and discussed them with their classmates and a teacher. Interactive tasks included case studies, role-playing games, quizzes, and quests, which allowed students to develop critical thinking and problem-solving skills. Game mechanics – achievements, points, and levels – stimulated motivation and maintained interest throughout the experimental study.

Social interaction using team projects and group discussions contributed to the development of communication skills and the strengthening of social relationships among students of socionomic professions. The results of surveys and questionnaires confirmed the significant positive impact of gamification on students' attitudes toward their chosen profession, their level of soft and hard skills, their interest and involvement in the educational process, and their activity and independence in completing learning tasks.

Table 3

Impact of Gamification on the Formation of Relevant Competencies of Students in the Socionomic Profession

No	Results	Tools and Competences	Characteristics
1.	Boosting motivation and engagement	Game mechanics	The use of game mechanics elements – points, achievements, levels, leaderboards – increases interest in learning and encourages students to participate actively in the process.
		Competitive spirit	*The built-in competition system motivates students to strive for better results, improve their skills, and actively participate in solving problems.*
		Immersion in the context	Game scenarios, in which students apply their knowledge in practice in simulated situations, are more attractive than standard teaching materials.

No	Results	Tools and Competences	Characteristics
2.	*Development of practical skills (hard skills)*	*Real-life tasks*	*Gamification helps students tackle real-life problems they will face in their future careers.*
		Experimental learning from mistakes	*In a gaming environment, students can experiment and learn from their mistakes without negative consequences, facilitating the rapid acquisition of professional skills.*
		Development of creative thinking	Gamification promotes the development of creative thinking and the search for non-standard solutions, which is especially important for specialists in socio-economic professions.
3.	*Soft skills development*	*Team tasks*	*Game scenarios require teamwork, which helps students learn to interact, distribute tasks, find compromises, communicate, and coordinate activities.*
		Social interaction	*Gamification creates a platform for communication, experience exchange, support, and mutual assistance among students.*
		Critical thinking	Gamification encourages students to analyse situations, make optimal decisions, and develop critical thinking skills. Gamification encourages students to analyse situations, make optimal decisions, and develop critical thinking skills.
		Time management	Gamification often involves timers and time limits, which help students develop time management and task prioritization skills.
4.	*Enhancing independence*	*Individual progress*	*Gamification enables students to learn at their own pace, mastering the material according to their levels, which enhances their independence.*
		Information search	During the game, students often have to search for information and solve problems, which helps develop independent learning skills.

Source. Own research.

We formulate research hypotheses to test the effectiveness of gamification in developing soft and hard skills in students of socionomic professions.

Hypothesis 1 Using gamification in the independent work of students increases their interest and involvement in professional development and promotes soft and hard skills formation. The study confirmed the hypothesis.

To determine the quantitative parameters of the criteria for evaluating the effectiveness of the created virtual professional community of future specialists in socio-economic professions, 'School of Professional Growth,' during independent work, a set of crite-

ria and diagnostic tools was developed, presented in Appendix 1. Considering soft & hard skills in the study as a system, the key component of which is information as an object of professional activity of future specialists in socio-economic professions, the authors correlated the relationships between the criteria and indicators of the effectiveness of the proposed influences.

According to the selected diagnostic tools, the maximum number of points that each student could score was 100, which corresponds to the 100-point grading system used in higher education institutions. The number of points scored determined the student's perception and awareness of themselves as a specialist in the following range: high (100-85 points), basic (84-70 points), basic (69-50 points).

The experimental study was conducted with 384 students majoring in socionomic specialties and involved both initial and final assessments of the level of mastery of soft and hard skills. The results of soft and hard skills development were compared at different stages of the study. To avoid ambiguity and overly complex mathematical data processing, all indicators were consolidated into four specific groups, which were considered as relevant competencies (soft and hard skills) of students in socionomic fields. Situational tasks were used to assess the level of soft and hard skills among students in both the control and experimental groups. The evaluation took into account the content and justification of the proposed solutions, the students' creative approach and originality, as well as their ability to think critically.

An analysis of the responses regarding soft and hard skills, as well as the level of student engagement, revealed significant differences between the two groups studied (see Table 4).

Table 4

Table 4 Initial Assessment of the Level of Soft and Hard Skills among Students of Socionomic Professions

Soft & hard skills indicators	Group	Levels of soft & hard skills indicators		
		Initial (69-50)	**Basic (84-70)**	**High (100-85)**
		%	**%**	**%**
Motivation and professionalisation	Test Group	58%	27%	15%
	Control Group	59%	22%	19%
Cooperation and communication	Test Group	61%	20%	19%
	Control Group	61%	20%	18%
Adapting to new situations	Test Group	59%	25%	16%
	Control Group	56%	25%	18%
Self-regulation and analysis	Test Group	63%	20%	16%
	Control Group	60%	25%	15%

Source. Own research.

The results of the development of soft and hard skills of students of socionomic professions based on participation in the virtual professional community of future specialists in socio-economic professions 'School of Professional Growth' are reflected in Table 5.

Table 5

Final Assessment of the Level of Soft and Hard Skills of Students of Socionomic Professions

Soft & hard skills indicators	Group	Levels of soft & hard skills indicators		
		Initial (69-50)	Basic (84-70)	High (100-85)
		%	%	%
Motivation and professionalisation	Test Group	38%	31%	31%
	Control Group	57%	27%	16%
Cooperation and communication	Test Group	39%	34%	27%
	Control Group	59%	20%	21%
Adapting to new situations	Test Group	35%	32%	33%
	Control Group	56%	25%	19%
Self-regulation and analysis	Test Group	31%	37%	32%
	Control Group	39%	43%	18%

Source. Own research.

The analysis of the difference between the initial and final values of the levels of soft and hard skills of students of socionomic professions is presented in Table 6.

Table 6

Difference between the Initial and Final Levels of Soft and Hard Skills of Students of Socionomic Professions

Soft & hard skills indicators	Group	Levels of soft & hard skills indicators		
		Initial (69-50)	Basic (84-70)	High (100-85)
		%	%	%
Motivation and professionalisation	Test Group	-20%	4%	16%
	Control Group	-2%	5%	-3%
Cooperation and communication	Test Group	-22%	14%	8%
	Control Group	-2%	0%	2%
Adapting to new situations	Test Group	-24%	7%	16%
	Control Group	0%	0%	1%
Self-regulation and analysis	Test Group	-32%	17%	16%
	Control Group	-21%	18%	3%

Source. Own research.

The results of evaluating the effectiveness of soft skills development through gamification technologies are presented in Table 7.

Table 7

Qualitative Analysis of the Effectiveness of Soft and Hard Skills Development among Students in Socionomic Professions through Gamification Technologies

Soft & hard skills indicators	Test Group	Control Group
Motivation and professionalisation	Increased engagement in the educational process	A standard level of motivation commonly observed in traditional education
Cooperation and communication	High communicative engagement with elements of soft and creative thinking. Strong communication and collaboration skills for effective teamwork	A moderate level of communication and interpersonal engagement.
Adapting to new situations	Problem-solving skills in non-standard situations, demonstrating creativity. Enhanced rapid adaptability to unusual contexts	Prior level of knowledge and skills. Limited ability to adapt to new situations
Self-regulation and analysis	Conscious approach to learning; developed ability to analyse own mistakes and successes	Lack of motivation for active self-regulation and analysis of one's own educational and professional activities

Source. Own research.

The experiment proved that the proposed pedagogical toolkit for gamification of soft and hard skills formation of socionomic professions students could be considered effective.

The result of the research and experimental work was a survey of students' attitudes toward gamification in the educational process. Content analysis was used to analyse the responses. First, the text was coded to identify key themes and ideas from the students' responses. After that, the codes were grouped into broader categories, and the frequency of mentions for each category was analysed. This allowed us to determine which aspects of game-based learning are most important to students (Table 8).

Table 8

Students' Attitudes toward the Integration of Game Elements into Education

Category	Code	Mentions
Memorisation and assimilation of material	More memorable, easier to retain attention, easier to understand	7

Category	Code	Mentions
Interest and attention	Curiosity, attention retention, desire to learn more	6
Immersion in the profession	Modelling real situations, quasi-professional reality	6
Role-playing games and activities	Role-playing games, quests, thematic events	5
Motivation and team building	Team building, motivation, team interaction	4
Ideas and suggestions	Ideas for improvement, suggestions	3
Encouragement and visual aids	Encouragement, visual examples	2

Source. Own research.

The content analysis revealed that students in socionomic professions typically have a positive attitude towards incorporating game mechanics into the educational process. They believe that this contributes to better memorisation of material, makes the learning process more interesting and exciting, helps to immerse oneself in the profession, and motivates and unites the team.

Discussion

The practical use of gamification resources faces several problems that do not contribute to the implementation of game models in the higher education process:
- the use of external motivation of students in gaming activities (points, badges, icons, awards) instead of developing internal motivation;
- increased workload for teachers and students in preparing for gaming activities;
- development and implementation of a new model of teacher-student relations;
- the possibility of psychological dependence on computer games;
- lack of well-thought-out technical support.

Conclusions

The research results confirm that gamification is an effective tool in modern higher education, encouraging students to actively engage with new material through game-based thinking processes and a reward system. The use of gamification in teaching students of socionomic professions contributes to the creation of a contextualised and meaningful educational environment. The integration of storylines, roles, characters, problem situations, and elements of unpredictability immerses students in professionally relevant situations, enhancing both their soft and hard skills.

As evidenced by the results of experimental training, the achievement of learning goals was facilitated by stimulating learning, which is associated with the enjoyment of the game and positive expectations during the game itself among

students of socionomic professions who were raised in the virtual world of digital technologies (Tkáčová et al., 2023), as well as the adaptability of gaming techniques. Motivation derived from competitiveness, achievements, and both soft and hard skills acquired through game-based learning facilitated a productive understanding of the program material.

The internal motivation of students is driven by personal satisfaction and recognition from their peers. The study revealed that gamification not only enhances student engagement and motivation but also fosters their professional growth by developing both soft and hard skills essential for careers in the socionomic sphere. The authors of the article propose that effective gamification can greatly enhance the quality of the educational process, making it more engaging and efficient. In the future, it would be advisable to conduct research with a larger sample of students and integrate additional variables into the analysis, such as the duration of the impact of educational technologies using gamification and its impact on long-term pedagogical outcomes. This will give a clearer understanding of how gamification affects the educational process and professional growth of students in socionomic professions.

Based on the study's results, the authors provided practical recommendations for implementing gamification in the educational processes of higher education institutions. The following methods and steps can be used for this purpose:

- developing scenarios for educational quests that combine various learning tasks into a common storyline with characters and events. This will help increase students' interest and engagement in completing tasks;
- using game-based forms of knowledge assessment – quizzes, peer reviews – instead of traditional surveys to stimulate students' cognitive activity;
- introducing a system of accumulating points, achievements, and badges for completing certain educational tasks will increase motivation to learn against the backdrop of a sense of progress and encouragement of success;
- using teamwork and competitions between groups of students. This will contribute to the development of cooperation skills and leadership qualities;
- the use of role-playing games that simulate real situations, with tasks distributed among participants. This will allow for the development of professional competencies and communication skills;
- self-assessment works well for reinforcing the skills acquired as a result of the game part of the task.

The article explores how gamification techniques can enhance both soft and hard skills in students pursuing socionomic professions. It emphasises the integration of game elements and storylines into students' independent work to foster a more interactive and motivating learning experience.

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Appendix

We apply a set of methods and criteria for this experimental work (Fig. 1). To evaluate the effectiveness of the examined process, we used four criteria: motivation and engagement, practical skills (hard skills), soft skills, and independence. They are represented by the symbols K_1 to K_4, respectively. To ensure accurate and objective assessments, we identify three subcriteria within each criterion.

Figure A1

Criteria-Level Diagram
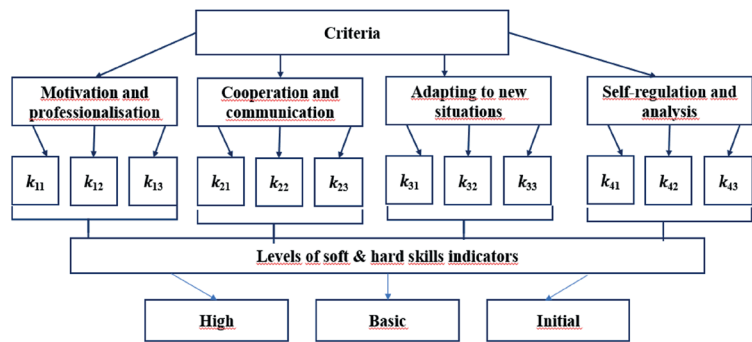
Source. Own research.

For K_1, we proposed the following criteria: a) motivation for continuous development; b) focus on success; c) interest and value orientation. The designations used are: k_{11}, k_{12}, k_{13}.

For $_2$, we identified three criteria: d) critical thinking, e) social interaction, and f) flexibility and mobility. Their designations are: k_{21}, k_{22}, and k_{23}.

For K_3, we applied three criteria: g) the ability to participate in team and project activities; h) the ability to organize and plan own activities; and i) the ability to work creatively (including creativity and non-standard thinking). We designated them as: k_{31}, k_{32}, and k_{33}.

For K_4, we applied the following criteria: j) individual progress; k) emphasis on self-education and self-improvement; and l) initiative, involvement, and responsibility. The designations used are: k_{41}, k_{42}, k_{43}.

According to the above scheme, levels of intensity of manifestation (beginner, intermediate, advanced) have been developed and described for all criteria.

Diagnostic methods have been selected and structured for diagnostic purposes (Table A1).

Table A1

Criteria and Diagnostic Tools

Criteria	Subcriteria	Methods
Motivation and professionalization	Motivation for continuous development	Diagnosis of motivational orientations in interpersonal communications (the "Professional Motivation" test based on the methodology of K. Zamfir, tested by K. Linyov, O. Merzlyakova, and D. Sabol)
	Focus on success	Methodology for diagnosing personal motivation for success (T. Ehlers)
	Interest and value orientation	Methods for assessing interest in the profession and professional responsibility (O. Rezvan) (adapted to suit the research problem)

Criteria	Subcriteria	Methods
Cooperation and communication	Critical thinking	Adapted critical thinking assessment test by L. Starkey
	Social interaction	Test "Fundamentals of Intellectual and Communicative Interaction" (the author's development)
	Flexibility, mobility	D. McLean's techniques (tolerance for uncertainty)
Adaptation to new situations	Ability to act in a team and manage project activities	Student involvement in the development and implementation of projects
	Ability to organize and plan own activities	Self-assessment of educational and professional activities (the author's development)
	Ability to work creatively (creativity, non-standard thinking)	Self-assessment test for project management skills and D. Sishora's method for determining the group cohesion index
Self-regulation and analysis	Individual progress	Test to determine the level of self-development needs (adapted and tested by A. Ostapenko)
	Focus on self-education and self-improvement.	Adapted test "Reflection on self-development" (according to L. Berezhnova)
	Initiative, activity, responsibility	Questionnaire for identifying personality traits for self-improvement (modification of the semantic differentiation method by F. Fidler, R. Dobrovolska)

Source. Own research.

Since we used various diagnostic tools with different assessment scales to evaluate the initial levels of soft and hard skills among students in socionomic professions, we have chosen to interpret the diagnostic results using a standardized scale: beginner (1), intermediate (2), and advanced (3). All diagnostic tools used have their algorithms for conversion to this type of scale. For the overall assessment of the level of development of each criterion, we used 2–3 diagnostic tools for each subcriterion. Therefore, we decided to interpret the diagnostic results according to the average values. The collected data were processed and verified to improve the reliability of the diagnostic results, refining the quantitative indicators of the relevant diagnostic tools.

According to the chosen diagnostic tools, the maximum number of points that each student could score was 100, which corresponds to the 100-point grading system used in higher education institutions. The number of points scored determined the student's perception and awareness of themselves as a specialist in the following range: high (100-85 points), intermediate (84-70 points), beginner (69-50 points). Each level was indicated not only within the 100-point grading system but also with a single digit – 3, 2, or 1 – to facilitate statistical calculations.