Gamification as a trend in organizing professional education of sociologists in the context of distance learning: analysis of practices

Liudmyla V. Kalashnikova¹, Iryna V. Hrabovets¹, Liudmyla S. Chernous¹, Viktoriia A. Chorna² and Arnold E. Kiv³

¹Kryvyi Rih State Pedagogical University, 54 Gagarin Ave., Kryvyi Rih, 50086, Ukraine
²Petro Mohyla Black Sea National University, 10, 68 Marines Str., Mykolaiv, 54003, Ukraine
³Ben-Gurion University of the Negev, P.O.B. 653, Beer Sheva, 8410501, Israel

Abstract. The article identifies the essence of the phenomenon of gamification as a modern trend in distance education, as well as outlines its innovative potential based on the analysis of cases of introduction of gamification elements in the training of sociology students at Kryvyi Rih State Pedagogical University and Petro Mohyla Black Sea National University. Case studies were performed using an analytical model of gamification, which includes four interrelated elements: actors, content, effects, context.

Keywords: gamification, distance education, professional education, sociology

1. Introduction

The professional education of highly competent specialists in the modern world is a constant challenge and trial, determined, on the one hand, by the processes of globalization, evergrowing competition in the labor market, the dynamism of the demands of stakeholders. On the other hand, it is associated with qualitative changes in the value system not only of the generation of those who teach, but also of those who learn. The transformation of the very conditions of the organizing educational activities, as well as the rapid development and active implementation of information and communication technologies in the education system are not less important. Taken together, the above factors have led to the fact that today the lecturer is not a universal forwarder of knowledge accumulated by mankind in a particular field, but rather he/she becomes today an indicator of the vector of development of a particular scientific field. The task of teaching is not the creation of “knowledge base accumulators”, but the formation of the ability (competence) to search for the necessary information while solving the assigned tasks.
The situation with the coronavirus pandemic, which has intensified the introduction of distance learning forms, requiring a change in approaches to teaching methods and motivation, has become the other challenge of our time [23]. That is why well-known teaching methods, which existed for a long time, “sounded” in a new way, being enriched with modern technologically mediated characteristics. First of all, this applies to game-based teaching methods [27], or rather gamification [8, 28], the use of which is extremely important in the education of sociologists.

In particular, for the formation of such integrative competence as the ability to solve difficult tasks and practical problems characterized by the complexity and uncertainty of conditions [22]. After all, their use in professional education allows to display the logic of practical activities, stimulates initiative, independence of decision-making, serves as an effective mean of acquisition of knowledge, development of critical thinking, formation of skills and abilities of professional communication. Thus, the relevance of studying the innovative opportunities of gamification as a method of organizing educational activities in the context of distance education is due to the fact that at this stage of informatization of the domestic system of higher education the formation of both general and professional competencies of sociology students is inextricably linked with the use of information and communication technologies within the practice-oriented competence-based approach to learning.

The analysis of the available scientific literature on the problems of gamification of higher education testifies to the fact that today the issues of introducing the elements of gamification in the process of organizing professional education of sociologists have been left out of the researchers’ field of view. Interest in it is caused by the unconditional importance for the effective professional activity of future sociologists, which is especially actualized in the context of distance education. This article aims to outline the essence of the phenomenon of gamification as a modern trend in organizing distance education, as well as to determine its innovative potential to improve the quality of professional education of sociologists based on the case analysis.

The main research method was the analysis of the cases of introducing gamification elements in the process of professional education of sociology students at Kryvyi Rih State Pedagogical University and Petro Mohyla Black Sea National University, which provide the necessary amount of information for the interpretation of these practices of sociological education in higher education establishments. Unlike quantitative methods, the use of this research method allowed to consider various aspects of gamification and its social context, primarily taking into account the uniqueness and experimental nature of the analyzed cases, as well as the social conditions for the implementation of game practices into the study of various education courses. in sociology deeply and in details. Case analysis was carried out using the analytical model of gamification, which includes four interrelated elements: actors (competencies, resources, attitudes, motives, strategies, participants of the educative process), content (design, game practices), effects (organizational, group, individual), context (cognitive, educational, developmental, creative).

2. Results and discussion

The importance of gamification in the education process of sociologists is associated, first of all, with the possibility of diversifying routine learning activities, influencing student behavior,
increasing their motivation to learning through modeling game reality, creating conditions for achieving various kinds of learning objectives. We should not forget that we are talking about the professional education of Generation Z specialists, who from childhood interact with various gadgets in a relatively free information space [24].

According to the surveys conducted in 2019 by the employees of the Ukrainian Institute for Social Research named after O. Yaremenko, almost 3/4 of adolescents aged 14-17 years during the last 30 days spent from 1 to 6 hours on weekdays, playing on a computer, tablet, console, smartphone or other electronic device. According to the scale of interests in spending time on the Internet among the representatives of Generation Z, online games are in the second place after computer applications and social networks [2]. The motivational sphere of modern students is focused on quick achievements, the presence of clip thinking allows them to work easily in the multitasking mode of the game space. They are creative, they need a comfortable social environment, interesting activities. Therefore, for them, involvement in game-based activities is a common thing, but the question of transferring the acquired knowledge and skills to the real world arises. It is important to take into account these sociopsychological features and values of Generation Z when designing a new educational space and developing creative pedagogical technologies, in particular by introducing elements of gamification into the usual, traditional forms of education.

Gamification, unlike other educational technologies based on the principles of the game, is defined as a method focused on the use of game-based approaches, mechanics, which are widely used in computer games, for non-game processes, which allows to increase the involvement of participants in solving applied tasks [17]. Comparing gamification with other game-based teaching methods, Herger [11] focuses on their similar and distinctive features. Among the common typical features, the researcher singles out the presence of organizational rules, the closed space of social interaction, complete or partial opposition to the real world.

However, in contrast to the traditional game, which takes its participant into the game space, sometimes detached from reality, gamification leaves him/her in the real world with its inherent non-game problems and tasks. Unlike role-playing games, which have mostly spontaneous nature of the organization of the game process, gamification has clear rules, purpose, structure of actions, determined by the objectives of the education course, related to the logic of teaching the material. Following the rules allows you to increase the level of skill as you move from one level to another. Gamification provides the solution of specific tasks, accordingly adapted to the existing level of knowledge and skills of students. Increasing the level of complexity of tasks contributes to the formation of new skills and abilities. The content and organization of gamification involves an independent choice (or the illusion of choice) of the strategy to achieve the final goal due to the successful completion of intermediate tasks, which increases the motivation for self-improvement. Thus, the multilevel structure of presentation of teaching material allows the student to study according to the individually chosen trajectory, and the organization of “student-lecturer” operational feedback helps to establish an educational dialogue in order for the student to make the optimal choice of the behavior strategy. In addition, in gamification practices, the student remains himself/herself, without changing the status-role position, moves from the lowest level to the highest one, following the goal, relying on the motivation to get a positive assessment upon completion of the discipline study. The closest to gamification among traditional games is a simulator that creates the illusion of a
real world in a cyberspace. However, in contrast to it, gamification, by creating the illusion of a real world, focuses the attention on the possibility of using information and communication technologies to solve difficult tasks and practical problems in the real world. The use of game-based techniques in the learning process can be of a point, episodic nature, while gamification is systematic, as it is a holistic process – from setting goals and objectives to controlling knowledge, the level of practical skills and abilities formation. No less significant advantages of gamification in relation to other game-based methods are the ability to integrate verbal and non-verbal educational information, to automate the processes of information retrieval activities and knowledge control system, to accumulate statistical data on the results of students’ academic achievements.

According to Dichev and Dicheva [7] for designing an electronic format of the education course, implemented by using gamification, the lecturer must pay special attention not only to the motivational but also to the stimulating component of the structure of game elements. The activation of students can be carried out due to the nature of the game situation itself, because in the game it is much easier to overcome obstacles, which contributes to the effective development of competencies. Successful completion of tasks, a sense of achieving a goal strengthen self-confidence, to which the existing system of rewards in the form of receiving points for their fulfillment contributes. The possibility to repeat the educational assignment (passing the level of the game) creates conditions for relieving psycho-emotional stress, manifestating of creative abilities.

It is also worth agreeing with Buckley and Doyle [4], who believe that the combination of group and individual forms of educational activities contributes to the improvement of social interaction, supports the spirit of competition, thereby encouraging participating in it. Social virtual reality provides distance education with an element of presence that is typical of a personal approach which is an integral part of learning. While gamification due to the presence of rules restrains and concentrates the audience of students. The combination of virtual reality and gamification actualizes the social interaction of participants in the educational process.

It is also necessary to distinguish a number of organizational and methodological requirements for electronic methodological support of the academic discipline, which is implemented using the elements of gamification:

- firstly, the gradual creation and structuring of game applications for the education course, which must contain a legend, history, a set of dynamic plots, which forms a sense of belonging, contribution to the common cause, maintains interest in achieving educational goals;
- secondly, adherence to such principles of creating a computer game as: dynamics of using scenarios that require attention and reaction in real time; mechanics of using scenario elements (virtual rewards, statuses, bonuses, etc.); aesthetics of creating impressions, which contributes to emotional involvement; social interaction (a wide range of techniques that ensure the interaction of participants in the game process);
- thirdly, the use of a system of compulsory and variable tasks to develop students’ abilities to determine their own educational goals;
- fourthly, the organization of operational consulting support during fulfilling the tasks in order to develop the abilities to overcome obstacles, adapt to circumstances, choose
appropriate behavior strategies, quickly learn all the functional capabilities of the game element and gradually master the educational material;
- fifthly, monitoring the rating of students’ activity while mastering the course, taking into account the points obtained for completing individual tasks, in order to develop skills in planning further activities in a dynamic situation.

Moodle, the open-source automated information learning management system (LMS), focused on organizing interaction between lecturer and students, is used at Kryvyi Rih State Pedagogical University and Petro Mohyla Black Sea National University to organize distance learning [1, 18], in particular for sociology students.

Being a universal environment, Moodle contains all four basic elements of gamification, namely:

1) mechanical components (registration of participants; acquaintance with the rules of work in the environment; structuring of the presented information in the format of headings, subdivisions; functioning of feedback means; the use of the scenario elements providing the description of discipline in the form of a syllabus, detailing the structure of the study of the course with defining the form of classes, types and tasks of individual and independent work, means of current and final control of the level of formation of knowledge and skills, assessment criteria);

2) dynamics of change of components and settings (replenishment of electronic resources of each education course occurs in accordance with the curriculum, the schedule of classes of a specific academic group of students in real time, the terms of fulfilling the tasks, the number of attempts, the assessment method, setting the indicators of task fulfillment, parameters for viewing the results of task fulfillment, etc);

3) aesthetics – interactive Moodle interface gives participants the impression of emotional involvement, allows them to focus on choosing a strategy of behavior, performing a specific task, adjusting their work according to changing requirements for it, balancing between requests and skills necessary to perform a specific task or achieve a specific goal in general;

4) social interaction (each participant has the opportunity to mark their social status – administrator, lecturer, student, guest (in Moodle 3.9 for the lecturer it is possible to temporarily change the role of the participant to view the presentation format of the course page), the identification of an individual participant is carried out by photos, avatars or cards; open access to the grade journal allows you to maintain a competitive spirit, participants are ranked in the order of their achievements using the point grading system; the availability of news feeds, communication forums, the ability to integrate webinars, in particular with Adobe Connect Meeting and Big Blue Button systems, etc.).

Summarizing, we note that the Moodle system has sufficient functionality for introducing elements of gamification into the content of education courses.

During March-May 2020 the authors of the article developed and introduced 5 methodological developments to ensure the teaching of certain academic disciplines into the process of professional education of sociology students in order to optimize the forms of distance learning. A brief description of each of these academic disciplines is presented below.
Case 1. Within the framework of teaching the course “History of Sociological Thought” (topic “Latest Directions in the Development of Sociological Theory”) for 1st-year students of specialty 054 “Sociology” of Petro Mohyla Black Sea National University and Kryvyi Rih State Pedagogical University, conducting of a binary online lecture-provocation was offered with the participation of two lecturers (historian and sociologist). The lecture was held on the basis of the Moodle platform with the connection of the Big Blue Button service for webinars.

An important point of preparation is the selection of partner lecturers. Among the main criteria there are their psychological and intellectual compatibility, general level of competence, pedagogical readiness to use interdisciplinary connections. The game moment of students’ participation in a lecture is supported by integrative communication using the “question-answer” methodological technique. Starting the story about each of the areas of theorizing in modern sociology (functional analysis and systems theory of Luhmann [15], the structuration theory of Giddens [9], the theory of social space of Bourdieu [3], the theory of social change of Sztompka [25], theories of modern and postmodern society, neofunctionalism, the concept of information society, the theory of intellectual networks of Collins [5]), students are asked about the desired format of presenting the material (chronological or spatial, problematic or descriptive). Depending on the chosen format, one or another lecturer takes on the role of the speaker. At the end of the report, another lecturer, using the technique of reframing the content, tries to shift the emphasis to create a new perception of what is heard. Students’ participation in the discussion that arises between the lecturers is evaluated with points.

The binary lecture-provocation contains a conflict of interests, which manifests itself both in the structure of the presentation of educational material and in the comments and additions, which suggests a combination of different points of view. The interaction reveals the psychological qualities of the participants. External dialogue takes place in the form of dialogical communication between two lecturers and students, internal – independent thinking is formed with the experience of an active participant in various forms of external dialogue. Students get a visual representation of how to conduct a dialogue, as well as the opportunity to participate in it directly. Switching attention from one position to another contributes to the concentration of attention to the material, stable motivation throughout the entire training session.

This case demonstrates that the imposition of game practices by lecturers allows to change students’ attitudes and perceptions. These changes have a stable and long-term effect that can compensate for the initial disadvantages of the imposition method, through the formation of new social contacts, teamwork of the student group during the discussion.

Case 2. Within the teaching of the course “Sociology of Culture” (topic “Sociology of Theater”) for 3rd-year students of specialty 054 “Sociology” of Petro Mohyla Black Sea National University, as well as “General Sociological Theory” (topic “Culture as an Element of Social Systems”) for 2nd-year students, “History of Advertising and PR” (topic “Newspaper advertising of the 18th – 19th centuries”) for 3rd-year students of specialty 054 “Sociology” of Kryvyi Rih State Pedagogical University, it was proposed to conduct a virtual tour. In the first project, students were invited to visit the excursion to the World of Theater [6], Lviv Opera [16], the Opera Houses of Ukraine [21], in the second – to the Museums of the World [20], Google ArtsCulture [10], in the third – to the Museum of Advertising [19].

During the training session, the roles of guides and visitors of museum expositions were distributed among the participants of the educational process. When passing from one hall
to another, the performers of the role of the guide were changed, thus all students had the opportunity to be both a guide and a visitor. The social significance of game practices in performing these roles is the basis for the implementation of educational tasks, which were set. The compensatory capabilities of game practices, as a pleasant pastime, a combination of reality and illusion contribute to the consolidation of material, the acquisition of new knowledge, and the establishment of interpersonal communication.

The guides’ mission was to develop educational projects and it assumed the use of knowledge and practical skills in preparing a presentation, creating hyperlinks, using geographic information systems (e.g., Google Maps [14]), using panoramic expositions, 3D modeling, etc. Students actively used the SCORM standard, which is supported by Moddle.

Also the visitors had the opportunity to get acquainted with the elements of the exposition, actively discussing it. To enhance the similarity of a virtual tour to a game, the “opening” of new “halls” involved the actualization of their basic knowledge in the format of answers to test questions. At the end of the lesson, students had to describe their impressions of the excursion in the form of an essay. This sequence of tasks allows to combine group and individual forms of work with students, to implement the cognitive, educational, developmental and creative context of this educational project.

Case 3. Within the framework of teaching the course “General Sociological Theory” (topic “Systems of Social Stratification”) for 2nd-year students of specialty 054 “Sociology” of Petro Mohyla Black Sea National University and Kryvyi Rih State Pedagogical University it was proposed to participate in test-quest “Time/Space Travel”, created in Moodle using the iSpring Suite constructor (table 1).

Table 1: Examples of test-quest questions.

| Test Questions | Answers |
|----------------|---------|
| 1. What stratification system preceded slavery? | 1.1 Physical and genetic<br>1.2 Caste<br>1.3 Estate<br>1.4 Class |
| 2. What was the slave system based on? | 2.1 On the right of ownership of a person<br>2.2 On customary law<br>2.3 Religious division<br>2.4 Income |
| 3. In which country does a caste system exist? | 3.1 India<br>3.2 Japan<br>3.3 The USA<br>3.4 France |
| 4. What is the caste system based on? | 4.1 On religious and ethnic division of labor<br>4.2 On the right of ownership<br>4.3 On customary law<br>4.4 Income |

Continued on next page
| Test Questions                                                                 | Answers                                                                                       |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 5. What stratification system existed in medieval Europe?                     | 5.1 Estate                                                                                   |
|                                                                               | 5.2 Class                                                                                    |
|                                                                               | 5.3 Caste                                                                                   |
|                                                                               | 5.4 Slavery                                                                                  |
| 6. Choose the highest class in Medieval Europe.                               | 6.1 Nobility                                                                                |
|                                                                               | 6.2 Clergy                                                                                  |
|                                                                               | 6.3 Artisans                                                                                 |
|                                                                               | 6.4 Peasants                                                                                 |
| 7. In which country in the XIX century did the slavery exist?                 | 7.1 The USA                                                                                 |
|                                                                               | 7.2 Germany                                                                                  |
|                                                                               | 7.3 Spain                                                                                    |
|                                                                               | 7.4 Poland                                                                                   |
| 8. What was before?                                                           | 8.1 Abolition of serfdom in Russia                                                          |
|                                                                               | 8.2 Abolition of slavery in the United States                                               |
| 9. In which country did racial segregation exist?                             | 9.1 The USA                                                                                 |
|                                                                               | 9.2 Russia                                                                                   |
|                                                                               | 9.3 Germany                                                                                  |
|                                                                               | 9.4 Ukraine                                                                                  |
| 10. What is the basis for the division into classes according to Karl Marx?   | 10.1 Attitude to the means of production                                                       |
|                                                                               | 10.2 Attitude towards religion                                                               |
|                                                                               | 10.3 Land ownership                                                                          |
|                                                                               | 10.4 Belonging to the aristocracy                                                            |
| 11. What is the basis for the division into classes according to Max Weber?   | 11.1 Property, prestige, party                                                               |
|                                                                               | 11.2 Property, race, religion                                                                |
|                                                                               | 11.3 Prestige, party, education                                                              |
|                                                                               | 11.4 Ownership, education, qualifications                                                     |
| 12. How does the functional approach explain social stratification?           | 12.1 Stratification is natural, necessary and inevitable, as it is connected with a variety of needs, functions and social roles |
|                                                                               | 12.2 Stratification is not necessary and inevitable. It arises from conflict                  |
|                                                                               | 12.3 Stratification is not always necessary and useful                                        |
| 13. Which sociological approach considers stratification unfair?              | 13.1. Conflictological                                                                        |
|                                                                               | 13.2. Structural and functional                                                               |
|                                                                               | 13.3. Evolutionary                                                                           |
|                                                                               | 13.4. Symbolically-interactive                                                                |

A distinctive feature of this game practice is that students must quickly adapt to new conditions, make decisions in unexpected situations. Gamification of tests is to a certain extent associated with the game-based environment by creating the illusion of choosing from two
possible trajectories of taking the test (table 2).

Table 2
Possible trajectories of the test-quest.

| Level 1 (BC) | Honors |
|--------------|--------|
| 1.1 – 3.1 transition to the next level | «Voodoo» |
| 1.2, 1.3, 1.4 – 2.1 – 3.1 transition to the next level | «Leader» |
| 1.2, 1.3, 1.4 – 2.2, 2.3, 2.4 – 3.1 – 4.1 transition to the next level | «Free» |
| 1.2, 1.3, 1.4 – 2.2, 2.3, 2.4 – 3.2, 3.3, 3.4 – 4.1 transition to the next level | «Slave (captive)» |
| 1.2, 1.3, 1.4 – 2.2, 2.3, 2.4 – 3.2, 3.3, 3.4 – 4.2, 4.3, 4.4 transition to level 1.1 | «Slave (bondage)» |

| Level 2 (Middle Ages) | Honors |
|-----------------------|--------|
| 5.1 – 6.1 transition to the next level | «King» |
| 5.2, 5.3, 5.4 – 6.1 transition to the next level | «Knight» |
| 5.2, 5.3, 5.4 – 6.2, 6.3, 6.4 transition to level 5.1 | «Serf» |

| Level 3 (New Time) | Honors |
|--------------------|--------|
| 7.1 – 10.1 – 12.1 completion of testing | «Chairman of the Corporation» |
| 7.2, 7.3, 7.4 – 8.1 – 9.1 – 10.1 – 12.1 completion of testing | «President» |
| 7.2, 7.3, 7.4 – 8.2 – 9.1 – 10.1 – 11.1 – 12.1 completion of testing | «Middle class (upper stratum)» |
| 7.2, 7.3, 7.4 – 8.2 – 9.2, 9.3, 9.4 – 10.2, 10.3, 10.4 – 11.1 – 12.1 – 13.1 completion to level 7.1 | «Working class» |
| 7.2, 7.3, 7.4 – 8.2 – 9.2, 9.3, 9.4 – 10.2, 10.3, 10.4 – 11.1 – 12.2, 12.3, 12.4 transition to level 7.1 | «Under-class» |

At the beginning of the test, students get acquainted with the rules of taking it: in case of an incorrect answer to one of the questions of the level, the number of questions will increase, this process will continue until the student gives a sufficient amount of correct answers to move to the next level. After passing each block of questions, the student receives a corresponding award – thematic honor (emoji) and can receive a certificate in PDF format, created using the Custom Certificate plugin in Moodle.

The use of test-quest has a number of advantages over other types of knowledge control: first of all, it is an opportunity to simulate the sequence and variability of tasks based on a given algorithm; secondly, to implement an operational differentiated approach to the assessment of students’ mistakes; thirdly, the use of special-purpose distractors (for example, trap-distractors to reduce the number of cases of guessing the correct answer); fourthly, the ability to set the mode of executing the tasks (limiting the time and number of attempts, etc.); fifthly, an automated assessment system.
Case 4. Within the framework of teaching the course “Methodology and Methods of Sociological Research” (topic “Methodology for Compiling and Testing Survey Tools”) for 3rd-year students of specialty 054 “Sociology” of Petro Mohyla Black Sea National University and Kryvyi Rih State Pedagogical University it was proposed to take part in the creation of a gamified questionnaire for conducting an online survey using Google Forms [26].

During the completion of the seminar individual tasks, students were asked to carry out the author’s visual design of the screen (color, size, font, background, use of animation elements), as well as the choice of format for presenting the same set of questions for potential respondents. In particular, it was about evaluative, tabular and open-ended questions, where the first could be presented in the form of sliders or a nominal point scale, the second – in the form of a grid or individual questions, the third – mandatory or optional filling in, short or detailed answer. The quality of the developed tools was assessed on a 5-point scale by a group of expert respondents (played by the lecturers of the department), the points received by each student were summarized respectively.

By participating in the creation of a gamified questionnaire, students had the opportunity to “try on” the role of a researcher, trying to improve their skills of working with tools, electronic services for its creation. This project, due to the introduction of elements of the game, facilitated the understanding of the structure of the online questionnaire through thematic grouping of questions, using various ways of presenting them.

Case 5. Within the framework of teaching the course “Sociology of Urbanization and Globalization Processes” (topic “Problems of Urban Space Development”) for 4th-year students of specialty 054 “Sociology” of Petro Mohyla Black Sea National University and the course “Special and Branch Sociologies” (topic “Sociology of the City. Urbanization as a Global Process”) for 2nd-year students of Kryvyi Rih State Pedagogical University, it was proposed to take part in a lecture-conference held in the format of the game “Masquerade in Our City”, based on the Moodle platform with the connection of the Zoom service for webinars.

Each student was asked to prepare a short report that would highlight the problems of the functioning and development of a modern city, from the perspective of ordinary citizens of different ages, a manager, an economist, a demographer, an ecologist, an architect, a PR specialist, etc. The participants received their roles before the lecture, their task was not only to prepare a report and elements of the external image that would correspond to their role. The essence of the game was that other students after completing the report had to guess what role the speaker had received. The number of points received by a student for performing the assigned role was determined by the success of recognition by groupmates.

The use of narratives helped to stimulate students’ motivation for the learning process, to facilitate the perception of educational material. The difficulty of introducing the elements of gamification in this project was that not all students successfully coped with the task of “warming” the narrative component, which would fully correspond to the role received. Inconsistencies could be avoided by specifying the topics of the reports or by reducing the number of roles and, accordingly, the narratives.
3. Conclusions

Elements of gamification are actively used in education. In particular, we are talking about the relatively free services Kahoot, Plickers, ZipGrade, Quizlet, Class Dojo, LearningApps and many others, which have both web platforms and a mobile application [13]. Each of these services has its own advantages and disadvantages, which can be described in a separate article. Most of them are used for schoolchildren and much less for students, which is explained by the inaccessibility of experience of application in professional education, in particular, sociological.

Gamification in education is focused on using the basic desires of students in order to deeper involvement in the process and achievement strong performance and high results. Participants prefer excitement, history, play, which means this is a natural way of acquiring skills. Interestingly, in a gamified system, the player reveals his true self, finding himself in stressful or curious situations. This can be a good recruiting method without relying on previous grades or diplomas.

Experimental implementation of cases in the learning process of education of sociology students at two universities is focused on the compensation of practice-oriented forms of educational work, which are missing in the format of distance learning. The proposed elements of gamification of educational classes allowed to reduce psychological and physical load during online learning, to form personal trajectories of educational activity by adjusting its pace without time and space constraints, contributed to self-education, activation of creative potential of students, development of their ability to make independent decisions in conditions of risk and uncertainty.

In addition, the use of elements of gamification contributed to the activation of student interaction processes both with the lecturer and with each other, based on individual and group experience. The proposed format for conducting training sessions allowed to create a communication environment, characterized by openness, equality of all participants, the presence of mandatory feedback. In the concept of game-based learning, the student from the object of educational activity is transformed into its subject. The lecturer’s activity comes to the second place, as his/her main mission is to create conditions (regulation of the educational process, its organization, preparation of tasks, formulation of questions and topics for discussion, counseling, control of time for completing tasks, etc.) for initiating student activity [12].

The main effect of the introduction of gamification elements at different stages of the organization of the educational process is the possibility of organic integration of the principles of “cooperation” pedagogy with the method of active learning. As a result, there are an increase in students’ interest in the learning process, activation of the exchange of knowledge and experience, achievement of balance in the “lecturer-student”, “student-student” relationship, providing a certain autonomy and possibility to choose.

It is worth noting that the gamified format of educational work, aimed at increasing the productivity of educational activities, is generally less effective in the long term of its use, because it is associated with a large number of side effects. In our opinion, the potential of gamification in the professional education of sociologists has not been sufficiently studied yet, and it requires in-depth critical analysis and identification of both positive and negative aspects in its implementation into the educational process.

Gamification makes it easier to achieve many educational goals, but its effectiveness in
vocational education needs further research. Indeed, there is the experience of different countries on the introduction of elements of gamification in the system of higher professional education, in particular, sociological. But we should not forget that the culture, educational opportunities, norms and standards of behavior of students and teachers, as well as material resources are fundamentally different. For Ukraine, this is a new experience that requires detailed study.

In the context of the pandemic, the higher education system has adapted to the maximum extent to the conditions of distance learning. During the first and second waves of the spread of COVID-19, there were dramatic changes in higher education, both conditions and requirements for training changed. Many conservative teachers have become more open to the introduction of computer innovations, and the attitude of students to the learning process has changed. Therefore, the use of game thinking and game dynamics to involve students in solving applied professional problems requires further in-depth analysis.

References

[1] Abdula, A.I., Baluta, H.A., Kozachenko, N.P., Kassim, D.A. and Zhuravlev, F.M., 2022. The use of Moodle in the teaching of philosophy and distance learning. In: S. Semerikov, V. Os-adchyi and O. Kuzminska, eds. Proceedings of the Symposium on Advances in Educational Technology, AET 2020. University of Educational Management, Kyiv: SciTePress.

[2] Balakireva, O., ed., 2019. Smoking, alcohol and drug use among adolescents who are studying: the spread of the trend in Ukraine: according to the results of a study in 2019 within the framework of the international project “European survey of students on the use of alcohol and other drugs - ESPAD”. Kyiv: Obnova.

[3] Bourdieu, P., 2018. Social space and the genesis of appropriated physical space. International journal of urban and regional research, 42(1), pp.106–114. Available from: https://doi.org/10.1111/1468-2427.12534.

[4] Buckley, P. and Doyle, E., 2017. Individualising gamification: An investigation of the impact of learning styles and personality traits on the efficacy of gamification using a prediction market. Computers & education, 106, pp.43–55. Available from: https://doi.org/10.1016/j.compedu.2016.11.009.

[5] Collins, R., 2007. The creativity of intellectual networks and the struggle over attention space. Knowledge, communication and creativity. SAGE Publications Inc., pp.156–165. Available from: https://doi.org/10.4135/9781446215548.n9.

[6] Department of Literature on Art of Ternopil Regional Universal Scientific Library, 2021. The theater: virtual multimedia exhibition. Available from: https://library.vspu.edu.ua/vistavki/teatr/teatr.htm.

[7] Dichev, C. and Dicheva, D., 2017. Gamifying education: what is known, what is believed and what remains uncertain: a critical review. International journal of educational technology in higher education, 14, p.9. Available from: https://doi.org/10.1186/s41239-017-0042-5.

[8] Fedorenko, E.G., Kaidan, N.V., Velychko, V.Y. and Soloviev, V.N., 2021. Gamification when studying logical operators on the Minecraft EDU platform. CEUR Workshop Proceedings, 2898, pp.107–118.
[9] Giddens, A., 2014. Structuration theory: Past, present and future. *Giddens’ theory of structuration: A critical appreciation*. Taylor and Francis, pp.201–221.

[10] Google Arts&Culture, 2011. Information about museums, news and articles. Available from: https://artsandculture.google.com/.

[11] Herger, M., 2014. *Enterprise gamification: engaging people by letting them have run*. CreateSpace Independent Publishing Platform.

[12] Kalashnikova, L. and Chorna, V., 2021. Effectiveness of distance and online education services in the context of the coronavirus pandemic: experience of empirical sociological research in Ukraine. *Innovation: The European Journal of Social Science Research*, 34(1). Available from: https://doi.org/10.1080/13511610.2021.1909463.

[13] Kazhan, Y.M., Hamaniuk, V.A., Amelina, S.M., Tarasenko, R.O. and Tolmachev, S.T., 2020. The use of mobile applications and web 2.0 interactive tools for students’ german-language lexical competence improvement. *CEUR Workshop Proceedings*, 2643, pp.392–415.

[14] Kholoshyn, I., Nazarenko, T., Bondarenko, O., Hanchuk, O. and Varfolomyeyeva, I., 2021. The application of geographic information systems in schools around the world: a retrospective analysis. *Journal of physics: Conference series*, 1840(1), p.012017. Available from: https://doi.org/10.1088/1742-6596/1840/1/012017.

[15] Luhmann, N., 1982. The world society as a social system. *International journal of general systems*, 8(3), pp.131–138. Available from: https://doi.org/10.1080/03081078208547442.

[16] Lviv national opera, 2016. Video / virtual walk through. Available from: https://opera.lviv.ua/3d-tour/.

[17] Marache-Francisco, C. and Brangier, E., 2014. The Gamification Experience: UXD with a Gamification Background. In: K. Blashki and P. Isaías, eds. *Emerging research and trends in interactivity and the human-computer interface*. IGI Global, pp.205–223. Available from: https://doi.org/10.4018/978-1-4666-4623-0.ch010.

[18] Mintii, I.S., 2020. Using Learning Content Management System Moodle in Kryvyi Rih State Pedagogical University educational process. *CEUR Workshop Proceedings*, 2643, pp.293–305.

[19] Museum of Advertising, 2014. Museum of advertising. Available from: http://muzey-rekliami.com.ua/.

[20] Museums of the world, 2011. Information about museums, news and articles. Available from: http://www.globmuseum.info/.

[21] Opera houses of Ukraine, 2019. Virtual walk. Available from: https://theatres.authenticukraine.com.ua/ua/.

[22] Order of the Ministry of Education and Science of Ukraine 04.03.2020 371. Standard of higher education of Ukraine in the field of knowledge 05 "Social and behavioral sciences", specialty 054 "Sociology", 2020. Available from: http://ru.osvita.ua/doc/files/news/718/71862/054-sociology-B.pdf.

[23] Polhun, K., Kramarenko, T., Maloivan, M. and Tomilina, A., 2021. Shift from blended learning to distance one during the lockdown period using Moodle: Test control of students’ academic achievement and analysis of its results. *Journal of physics: Conference series*, 1840(1), p.012053. Available from: https://doi.org/10.1088/1742-6596/1840/1/012053.

[24] Spivakovsky, A.V., Petukhova, L.Y., Omelchuk, S.A., Spivakovska, Y.A., Kotkova, V.V. and Yurchuk, Y.Y., 2022. The evolution of the information and educational environment in the context of the theory of generational development. In: S. Semerikov, V. Osadchyi and
O. Kuzminska, eds. *Proceedings of the Symposium on Advances in Educational Technology, AET 2020*. University of Educational Management, Kyiv: SciTePress.

[25] Sztompka, P., 2000. Cultural trauma: The other face of social change. *European journal of social theory*, 3(4), pp.449–466. Available from: https://doi.org/10.1177/136843100003004004.

[26] Terentiev, E.A., Nefedova, A.I. and Gruzdev, I.A., 2016. Visualization of questionnaire in online surveys: how different design features impact the data quality. *Monitoring of public opinion: economic and social changes*, (5), pp.1–15. Available from: https://doi.org/10.14515/monitoring.2016.5.01.

[27] Tokarieva, A.V., Volkova, N.P., Harkusha, I.V. and Soloviev, V.N., 2019. Educational digital games: Models and implementation. *CEUR Workshop Proceedings*, 2433, pp.74–89.

[28] Varina, H., Osadchyi, V., Goncharova, O. and Sankov, S., 2021. Features of introduction of components of gamification in the course of development of constructive strategies of overcoming of life crises at youth. *CEUR Workshop Proceedings*. 