Gamification as a New Format of Projects Method in Blended Learning Conditions Studying Disciplines of the Pedagogical Cycle

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Abstract: The paper discusses the main issues of organizing the learning process based on the gamification. The publication analyzes the main provisions of the application of elements of gamification in the process of teaching students. The study proposes to consider gamification as a new format of the project method in the context of blended learning in the study of disciplines of the pedagogical cycle by students of humanitarian and natural specialties. We analyzed the main didactic Classcraft platform capabilities. Developed by students within the framework of the "Pedagogy" discipline a brief structure of the "Adventurers" quest was present. The algorithm of the students' work included following steps: choosing a project theme (name of the game); composition of the game (stages); development of the game as a digital product (elements); analysis of the implementation of the game as a digital product (difficulties and prospects); analysis of the results of joint digital project activities of students, indicating positive and negative aspects. We considered the positive aspects of using digital applications and platforms to improve teacher skills. The conclusions provide consolidated proposals for the use of gamification, such as: its implementation in the educational process is aimed at the development of intellectual, social, emotional, technological segments of the personal development of students; the use of gamification has a positive impact on the development of students and teachers soft skills and helps to improve their professional skills.

Keywords: *Classcraft, digital platforms, gamification, online quests, students.*

1. Introduction

The rapid digitalization of public life puts forward new requirements for one of the most important institutions of society – education. The implementation of digital teaching tools brings the educational process to a new level, allowing to receive educational content regardless of the time and place of stay of the participants in the educational process. The key features of the implementation of digital technologies into the modern educational process are their interactivity and focus on the formation of digital literacy of future specialists in various branches of manufacture and services. One of the most effective ways of assimilating information using digital technologies is the creation of digital content.

Our research focuses on the issues of interactivity of the educational process through the implementation of digital technologies. Games have been the most important element of interactivity since ancient times. In the digital age, games naturally move to the digital space, and take up a significant portion of the time for the younger generation.

One of the key innovations in the educational industry is gamification (European Commission, 2019). Its implementation and distribution is due to new conditions for the development of society: the rapid development of computer and Internet technologies.

In the educational process, gamification is considered as: a phenomenon of the modern world (Signori et al., 2018; forms (Bicen & Kocakoyun, 2018) and one of the possible effective ways of organizing the educational process (Safapour et al., 2019; Yıldırım & Şen, 2019); method of teaching students (Bicen & Kocakoyun, 2018; Pereira et al., 2018; Huang, Soman, 2013); teaching method in organizations (Yildirim, 2017; Zvarych et al., 2019) a personnel management tool (Armstrong & Landers, 2018), increasing the efficiency of training (De Schutter & Abeele, 2014), as well as a new trend in its selection and recruitment (Signori et al., 2018; Zimbrick, 2013;); the type of game practice (Hägglund, 2012), which makes the learning process more exciting and interesting; the risks associated with the implementation of gamification (Devers & Gurung, 2015; Toda et al., 2017). Many researchers see gamification as a means of:

- increases the motivation of students (Glover, 2013; Van Roy & Zaman, 2018);

- promotes distance learning services (Teemueangsa & Jedaman, 2019) and increases the effectiveness of online courses (Bicen & Kocakoyun, 2018);
- prepares students to solve problems arising in the field of professional activity (De Schutter & Abeele, 2014);
- attracts the attention of employees and customers (Zickermann & Linder, 2014; Armstrong & Landers, 2018).

The didactic and methodological potential of gamification in the study of various disciplines is subject to research (Caponetto et al., 2014; Devers & Gurung, 2015; Zhernovnykova et al., 2020; Zvarych et al., 2019).

Aim of the study is to show the possibilities and experience of using the Classcraft platform based on gamification in the context of studying the humanities.

Objectives:

1. Adaptation of international experience of gamification in relation to teaching students at V. N. Karazin Kharkiv National University

2. Contributing to the expansion of the bank of ideas in the field of gamification

3. Improving the digital competence of student (compilers) of the game.

2. Development of the game in Classcraft

The organizational process of working with students in the process of implementing projects included following the technology of project activities in the digital educational space (Zhernovnykova et al., 2020):

The preparatory stage. At the beginning of the semester, students were asked to develop an educational game as part of the Pedagogy course (in blended learning).

The operational stage. Students voluntarily divided into groups of up to 5 people on the basis of common interests in the development of the game. The teacher at this stage performed advisory and supervisory functions.

The final stage. At the end of the semester, a group of students presented the result (educational game) to their course (students) using the ZOOM platform. The assessment process included 3 components, 12 points for creating the game itself, 5 points for public defense of the project, and 3 points for formalizing the results and reflection.

The algorithm of the students' work included following steps:

1. Choosing a project theme (name of the game).

2. Composition of the game (stages):

a) introductory - acquaintance with the rules of the game, the conditions for calculating and distributing points;

b) main - the content of the locations declared in the game, the transition from one location / position to another;

c) final - deroling and reflection of game activity.

3. Development of the game as a digital product (elements):

- web design - video game design development;
- UX design - basic skills of the user of this game;
- graphic design - construction of game characters in the identity: general style, color palette, topography, logo;
- motion design - video content development using various programs (for example, Adobe Premiere Pro, Adobe After Effect).

4. Analysis of the implementation of the game as a digital product (difficulties and prospects).

5. Analysis of the results of joint digital project activities of students, indicating positive and negative aspects.

Why we use Classcraft platform?:

- accessibility to users;
- there are positive reviews in publications of a psychological and pedagogical nature (Haris & Sugito, 2015; Otto, 2018; Papadakis & Kalogiannakis, 2018; Sanchez et al., 2017);
- the ability to use many components of the platform for free;
- there is no need to use special complex computer equipment (gaming computers): you can play our game from your phone.

In the process of creating a game (project execution), students set themselves certain tasks that they wanted to solve by creating a game on the platform:

- increasing interest in the subject when studying history at school;
- systematization of knowledge of schoolchildren within the framework of this topic;
- transition from knowledge of reproductions to knowledge-reconstructions and knowledge-transformations among students-compilers of this game.

3. Theoretical background

In the context of the study, we will consider the approaches of scientists to the definition of the phenomenon of gamification in the context of educational digitalization. So, valuable for our research are developments aimed at identifying effective game means of training future teachers. For example, among the means that contribute to the formation of digital competence of future teachers, gamification can be distinguished. According to a team of scientists led by O. Zhernovnykova, gamification is the use of game elements or principles of play in non-game situations. The main advantage of gamification in the educational process lies in its motivational properties. Also, the practice of using games in education has already established itself as an effective tool, because during learning in the game format, a larger amount of information is absorbed, it is retained in memory longer, etc. (Zhernovnykova et al., 2020, p.173).

O. Makarevich advises using gamification to develop certain skills or behavior; for greater visualization and emphasis of such actions and skills that are difficult to demonstrate using traditional methods to capture applicants for education in the learning process, create a kind of competition between them, etc. (Makarevich, 2015).

In our work, we will consider gamification as a new format of the project method in the context of blended learning in the study of disciplines of the pedagogical cycle by students of humanitarian and natural specialties.

As one of the project creative tasks within the framework of individual study in the discipline "Pedagogy", students of the 2nd year of the Faculty of Chemistry and 3rd year of the Faculty of History of V.N. Karazin Kharkiv National University was given the task to develop a didactic game.

The goal of creation the game was to form and develop the following general competencies among students (Rashkevich, 2014, p. 32-33):

a) instrumental (general basic knowledge; skills of searching for information and its analysis, synthesis; ability to plan and organize; problem solving; collective decision making; elementary computer skills);

b) interpersonal (teamwork; ability to take criticism);

c) systemic (effective use of the acquired knowledge in a practical plane; creativity; research skills; the ability to work individually; project management; initiative; production of a quality project; striving to achieve success).

The game, as a type of project assignment, could be performed individually, in pairs and in groups. The result of the students' activity was the development of an online game in a group work mode, which allowed

student developers to go from setting the goal of the game to presenting its results at the time agreed by the teacher.

Let's consider in more detail the process of creating the game and the platform on which it was convened. Classcraft is a licensed online role-playing game aimed at transforming and improving the quality of the educational process. The platform allows you to combine computer technology and standard teaching methods. The platform has web, iOS and Android versions, which expands the boundaries of its use.

The online service assumes that participants are required to work in a team mode, at least three people. For this, various characters have been created, such as the Healer, Warrior and Mage, who have certain abilities that allow effective interaction in a team.

The quality of students' work is appraisement in special units:

- XP – experience points – points that are awarded for completing a specific task;
- HP – health points – penalty points that are taken away due to violation of the rules of the game;
- GP – gold points – the game's currency, which is credited when completing a creative task or automatically leveling up a character;
- AR – action points – points that enable the player to use his special skills in order to improve the score, or help the team.

Next, let's take a closer look at the process of creating and running a game. An organizational point in the process is the registration of the teacher and students on the main page https://game.classcraft.com/ru (Fig. 1).
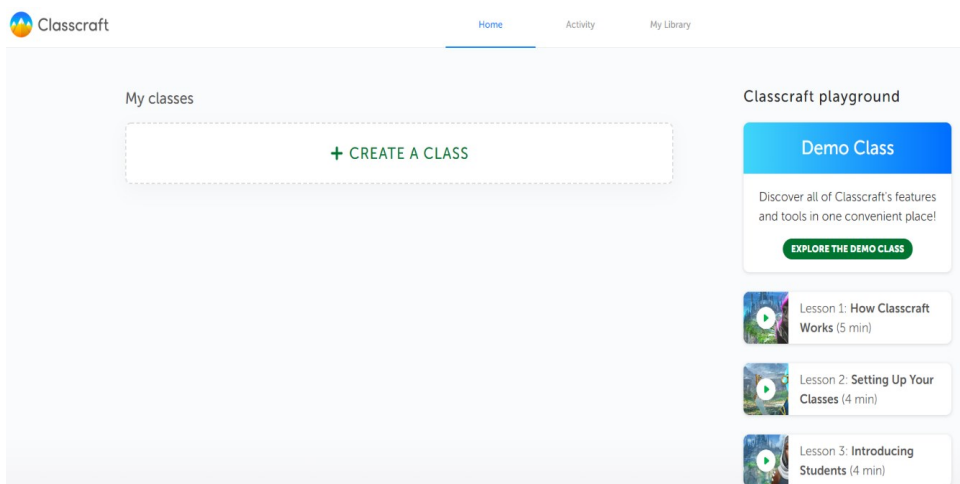

Figure. 1. *Login and Registration in Classcraft*

Fig. 2. *Creating accounts and forming a class and teams*

The main tasks of the teacher:
- Create own account and student avatars (Fig. 2);
- Form a class and distribute students into teams (Fig. 2);
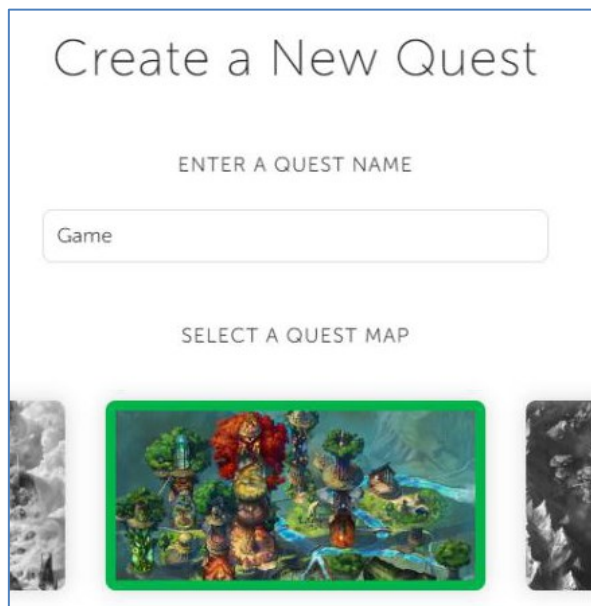 Develop tasks in the form of quests and set up an assessment system (Fig. 3).

Fig. 3. *Creation of educational tasks*

On the basis of this Internet service (Classcraft), the students, under our leadership, have designed a training quest "Adventurers". The topics of the assignments included famous myths and legends of the world.

Below is a brief structure of the Adventurers quest:

Introduction. Players get acquainted with the plot of the game. The story tells the students about the country Legendarium and its strongest artifact - the book "Bestiary". The story is told on behalf of Albus, the manager of the royal library. On the eve of the events, the book was stolen and must be returned, completing tasks on the topic "The mythology of the world." 6 locations were created with different types of tasks:

Royal Garden. You need to collect three types of jigsaw puzzles on the **JigsawPlanet** platform and get acquainted with the content of the pictures (Legends about the creation of the world from different nations).

At the root of Anahel. Pupils get acquainted with 3 epics about Russian Heroes, and pass the competitive quiz "Horse Racing" on the **LearningApps** platform (creating multimedia interactive exercises).

The Stones of Eternity. You must watch the video myths about the gods (YouTube website), complete the texts in the "Fill in the blanks" mode on the **LearningApps** platform.

Arena of Justice. Participants need to familiarize themselves with the legends of the Middle Ages on the **Padlet s**ervice (create electronic notes) and complete the "Tyburn tree" task on the **LearningApps** platform.

Star of Truth. This is the final test – "Choice of correct answers" quiz on all topics on the **Wordwall** platform.

Lake Akhtakhalan. Students fill out a questionnaire on the Google Forms resource for further analysis of the teacher's performance. Questions were formed about the appropriateness of using this method of teaching in the educational process, and about the effectiveness of the modern education system.

Saruman's palace. The quest confirmation of the completion. The world is saved. Happy end.

4. Discussion

The most important factor in the further advancement of gamification in the educational process is the understanding of who we will have to work with in these educational institutions (schools and universities) and this is Generation Z.

Generation Z learners are typically characterized as multitaskers who have come of age in public, surrounded by social media. If these students do

not know the answer to a question, they search for it on Google (Hawkins, 2015). They are accustomed to instant gratification and are often challenged when solving difficult problems (Hawkins, 2015). Z generation students are influenced by friends and family, but spend more time in front of the computer, video games, and social media as they interact digitally with others. Students of this generation are preparing for careers that do not exist today, so teaching them is becoming an increasingly challenging task (Hawkins, 2015). Gamification can be the solution that builds all sides.

Papadakis and Kalogiannakis (2018) note that the mechanisms of traditional teaching methods no longer benefit students. Standard teaching approaches, where lectures are perceived as tedious by students, gamification has a great advantage for problem solving as it can improve student learning motivation. The results of the study showed that the introduction of gaming platforms (Classcraft) into the educational process did not have a positive effect on student performance. On the other hand, this positively influenced their interest and participation in educational activities (Papadakis & Kalogiannakis, 2018).

A study by Haris & Sugito (2015) states that factors that generally affect users using Classcraft are e-learning motivation, enabling environment, and behavioral intent.

In our opinion, gamification gives the greatest result in project activities. The task of a good teacher is to create the right atmosphere for interaction in the classroom. Otto (2018) points out the importance of creating the right atmosphere with the words:

> *"When students enter my classroom, it is my duty to provide an environment that is engaging and empowers students to be motivated learners. The classroom becomes a small community where students trust one another and feel encouraged to work together as a team, aware of their individual strengths and weaknesses. As the leader of the classroom, I feel it is my responsibility to offer fun and rewarding strategies that meet the variety of needs that enter my classroom daily"*(Otto, 2018, p.15).

Next, we will consider in more detail the importance of the project (creating a game in Classcraft) for the development of students in the professional and personal terms, as well as the importance of introducing gamification processes in student education as a tool to increase interest in gaining new knowledge in a digital and blended space.

This project was attended by 27 people of different ages. Most of the participants are students of higher educational institutions (HEIs) of various profiles (chemical, medical, architecture, etc.). The platform functioned without any problems on PCs and smartphones. We received a lot of

positive feedback and constructive criticism regarding the refinement of some aspects of the game. Many respondents confirmed that this service can be used teaching process in schools and universities.

The students chose the theme for the project (development of the game) by themselves. A variety of game elements were used to create it. Six locations were created on the Classcraft platform. The basis of each of them was information on the topic "Myths of the World". The tasks of the game presupposed acts of active inclusion of the participants' critical and creative types of thinking by means of folding puzzles, watching videos, participating in quizzes, and guessing words. As they were completed, the players delved into the plot of the game, according to which the actions take place in the country of the Legendarium, where the book "Bestiary" was stolen, which must be returned to the royal library manager Albus.

The process of immersion in the game was accompanied by receiving badges, bonus points and filling out the leaderboard. Participants published these tables in their accounts and in an account that was created specially by the game developers to get feedback from the players.

In general, in the online format of interaction, were incorporated various actions, the implementation, were a kind of testing for concentration of attention, knowledge of specific facts or events, control of one's own emotional state, involvement in a game action.

The development of the game itself was a demonstration of the achievements of students in various fields: *intellectual*, involving a vision of the "layout" of the game, working on its blocks, thinking through tasks for each of them; *social*, based on acts of interaction in the process of its creation; *emotional*, the basis of which was a group of abilities for acceptance, awareness, regulation of both one's own emotional states and the feelings of others; *technological*, focused on basic computer and digital skills.

This research makes a certain contribution to the development of pedagogical thought, namely:

• expanding the geography of using this platform (Classcraft);

• familiarization of students-future teachers with the capabilities of this platform in order to use it in their further pedagogical activities;

• integration of international experience by young people into future professional activities;

• the contribution of Ukrainian researchers to the global treasury of data in terms of using this platform/creating a game based on this platform.

It is important to note that gamification is not a panacea for all ills, especially in a blended learning setting. This process also has negative sides in the learning process. According to Sanchez et al. (2017), an online survey

that was available on the Classcraft platform promotes a gamification model that looks at the student experience rather than the game itself, and they confirm that the game is consubstantial with its player. The authors emphasize that in this context, the game does not appear in the use of elements that have a game aspect, but rather in a non-essential vision of the game that generates a metaphor around the situation in order to build a reflexive space in which the nature and meaning of interactions change. The authors call this "ludicization" (Sanchez et al., 2017).

The gamification of the educational space is being studied by many scientists, but the process of introducing the platform (Classcraft) into the educational process of HEIs students, especially future teachers, has been studied not as expected. Also an important element of the research relevance is the application of gamification in a blended learning setting. A blended learning format involves combining online and offline learning, and this is a fairly new approach that has begun to be implemented in HEIs in both Ukraine and other countries with the advent of the pandemic and quarantine. It is important to note that future teachers must perfectly master various ways of organizing the educational process, both in the traditional form of education and in blended/distance learning. Digital technologists are an effective way and tool for organizing different approaches to teaching and a truly qualified teacher must have the appropriate knowledge and competence in this area.

5. Conclusions

In the context of blended learning, the development of games by students of humanitarian and natural specialties in the process of studying the discipline "Pedagogy" allowed teachers to develop, in addition to soft skills, their professional skills: the use of new technologies, techniques, methods in the educational process; improving pedagogical skills; increasing the level of culture of interaction with students.

Thus, all of the above led to the following conclusions:

1. Gamification is an important part of organizing the process of teaching students in a blended learning environment.

2. Gamification can be considered as a new format of project work of students in the study of the pedagogical cycle disciplines.

3. Gamification implementation in the educational process is aimed at the development of intellectual, social, emotional, technological segments of the personal development of students.

4. The use of gamification has a positive impact on the development of soft skills of students and teachers, as well as on the improvement of their professional skills.

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