

Gamification as a tool for quality management of business education in Ukraine

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ABSTRACT

The article systematizes the understanding of gamification and defines its importance for ensuring the quality of business education. The purpose, goals, types, and forms of gamification are outlined. Examples of gamification in business are given. The advantages of gamification in providing high-quality business education are determined. A mechanism for managing the quality of business education through gamification is proposed. 6 steps for the implementation of gamification are described, taking into account the characteristics of the quality of business education.

KEYWORDS: quality of education, business education, management, gamification.

Received: 24/01/2023

Revised : 15/02/2023

Accepted: 23/04/2023

1 Introduction.With the development of Industry 4.0, issues of the quality of higher education become especially important. The relevance increases with the processes of liberalization of higher education, the development of the autonomy of institutions and the growth of social responsibility. In the business environment, arise questions regarding the acquisition of quality business education. It is an instrument of economic growth. However, most countries are looking for ways to improve the quality of higher education, actively implementing innovations that would increase the interest and motivation of education seekers. Currently, the philosophy of understanding the quality of business education is changing – the transition from a traditional form to an innovative one. The main innovative approaches to the quality of business education are: scientific and educational information networks (SEIN), special technologies of support for virtual learning activities (Web 2.0), technologies of electronic projection of pedagogical systems, technology of network e-distance learning, technologies of e-library, technologies of close zone communication, electronic project management technologies, global network “Partnership in learning”. In modern conditions, in addition to distance learning platforms (Coursera, Udemy and edX), tools are actively used that rely on the power of social media to help students in the learning process (Edmodo, Grockit, EduBlogs, Wikispaces), make classes exciting, fun and interesting, and most importantly, more effective ones (Khan Academy, MangaHigh, Educreations, CarrotSticks), combine thematically important classes and create amazing and unforgettable projects (Teachers Pay Teachers, Planboard, QR-codes, TED, Glogster). Gamification is one of the effective tools in education and is actively used in business education.

2 Literature Review.The authors’ studies on the quality of business education are gaining importance. Moreover, such research deepens in the conditions of COVID-19 and the challenges of distance learning.

V. Panchenko and O. Chernenko considered the concept of pedagogical management in a private higher education institution, which allows effective management of scientific and pedagogical personnel, ensures the concentration of material and technical, informational resources, allows to effectively solve the problem of ensuring the provision of quality educational services(Panchenko, & Chernenko, 2020). The authors believe that the proper management of business processes can ensure the quality of education.

T.Diadyk noted that business education is considered as one of the factors of innovative development of the country’s economy. It is intended for people who have basic higher education and some practical experience (Diadyk, 2021)

O. Krasovska studied the main trends in the development of business education in the context of the globalization of educational processes, the implementation models of modern business education and the effectiveness of their application (Krasovska, 2012). She found that experts in business education advise to study ahead of time. Knowledge should be received today, and applied tomorrow. Learning “for growth” will help in the future to prevent a useless and economically impractical repetition of the passed. Each person has a sphere of immediate development. Practice shows that those who have a wider field of development absorb 80–90% of the information of the business program; those who have it narrower – almost 60%.

O. Polinkevych, N. Pavlikha, M. Voichuk, O. Kuzmak consider the processes of formation of the quality of education in Ukraine, determine the peculiarities of the development of business education

during the war (Polinkevych, Pavlikha, & Voichuk, 2022; Polinkevych, 2022; Polinkevych, 2018a; Polinkevych, 2018b).

O. Nasirova studied the processes of gamification as a tool for motivating personnel in business. She believes that examples of international and domestic companies demonstrate the positive impact of gamification on business results. According to experts' forecasts, this tool can become an effective management tool in the coming years, as it is able to create a unique experience of interaction with the company for its employees, customers and partners. Also, gamification increases the level of involvement of employees and customers in the work of the company, increases competitiveness and generates additional income (Nasirova, 2019).

A. Mostova defines that gamification is not directly related to virtual games. Gamification applies in real practice entertainment elements inherent in games, so-called game mechanics or game techniques. Game mechanics are the rules of the game and its elements (points, badges, levels, ratings, awards/prizes), game dynamics are scenarios of the user's participation in the game. This tool may not be effective for all companies. The future of gamification lies precisely in the loyalty programs of companies aimed at the consumption of goods and services. There are many mobile applications, but consumers choose branded ones because they are loyal to this brand, feel their involvement with one of the best brands. In order for gamification to give the maximum result, the following conditions must be met: the game (or a specific game mechanic) must be attractive to the target audience for which it is designed; gamification should be clearly tied to marketing goals; the presence of a qualified game practitioner in the team increases the chances of creating a successful game (Mostova, 2018).

M.Pereira, M.Oliveira, A.Vieira, R.M.Lima, L.Paes point out that frugal games also need to be properly selected and adapted to the dynamics of the productive environment, select methodology and tools. The gamification approach is used by organizations to achieve the benefits of engaging employees and consumers, promoting behavior change. Modern organizations are all about how to effectively motivate employees to share their knowledge throughout the organization, and that means engaged employees exhibiting desirable work behaviors and attitudes. Gamification creates a unique environment with unique aspects such as game content, continuous reflection, competitiveness, teamwork, challenges, emotions, rewards, fun and satisfaction that arise from employee interaction through healthy competition. This will contribute to the stimulation in all processes to better results. In the long term, the potential of gamification ensures actualization of interest, increases participation, develops creativity and autonomy, promotes dialogue and solves problematic situations (Pereira, Oliveira, Vieira, Lima, & Paes, 2018).

A. Polyanska, M. Andriiovych, N. Generowicz, J. Kulczycka, and V. Psyuk noted that gamification increases employee productivity and motivation. The main benefits of gamification in human resource management in enterprises are described by impact categories such as personnel evaluation, motivation, corporate culture and internal communications. Gamification creates a connection between the tools used in the artificial world, creating real life situations, preparing the player to make decisions in the created conditions. These game features can be used not only for entertainment: they can also be used for educational purposes. Companies use gamification for a variety of purposes. Startups use gamification to create a product that best meets a need; medium-sized companies gamify marketing processes to increase brand recognition and customer loyalty to goods and services; large companies mainly gamify HR processes (Polyanska, Andriiovych, Generowicz, Kulczycka, & Psyuk, 2022).

R.J. Rodrigues da Silva, R.G. Rodrigues, C.T. Pereira Leal noted that gamification is a tool often used to improve the teaching and learning process, helping teachers and students achieve their goals in the short, medium and long term. For the first time, the expediency of applying gamification to management is outlined. A conceptual model has been developed that shows the current level of gamification, its applicability, the main designs, the target audience and the type of organizations that use it. The main stakeholders using gamification in an educational context were identified, and the application of this tool to higher education was highlighted. The main connections in the conceptual model: motivation, flow, attitude, conscious learning (Rodrigues da Silva, Rodrigues, & Pereira Leal, 2019)

3 Methodology. In the work, an overview-descriptive approach, methods of analysis, synthesis, abstraction and generalization were used to study gamification as a tool for managing the quality of business education. In the process of studying gamification as a tool for managing the quality of business education, a comparative method was used. Also, a graphic method for determining the stages of using gamification in the spheres of activity, the main directions of action on the quality of business education during gamification, the mechanism of managing the quality of business education through gamification.

4 Results. Conceptual approaches division into periods

The purpose of the article is to determine the expediency and model of using gamification as a quality management tool in business education.

The most popular in the world are 7 quality management systems: ISO - International Organization for Standardization; EFQM—European Foundation for Quality Management; MBNQA—Malcolm Baldrige National Quality Award; SQAF—Singapore Quality Award Framework; CFFBE—Canadian System for Business Excellence; ABEF - Australian Business Excellence Framework and TQM - Total Quality Management. They show customer orientation. The most important quality indicators in quality management systems are leadership, strategic planning, customer orientation, process management, business results, knowledge management, improvement, measurement, partnership relations, information, policy, innovation, resources (Polinkevych, Pavlikha, & Voichuk, 2022). Common elements are leadership, planning and strategy, customers, staff, processes, results for the customer, for staff, for society, key results. All of them are the most important according to the education quality management system.

In martial law, distance learning, digital services and solutions need to change. This reinforces the decision of the Ministry of Education and Science to attract as many donors, organizations and representatives of the business sector as possible to support digital education in Ukraine. Together with the "War Child" office in the Netherlands, the MES started developing content with gamification elements for students in grades 1-4 in mathematics and reading (MES, 2022).

In the report Gartner it is noted that more than 70% of companies on the list use gamification elements today Forbes Global 2000. Every year, more and more organizations gamify business operations (Gamification 2020, 2012).

Based on research data (Rodrigues da Silva, Rodrigues, & Pereira Leal, 2019) it can be noted that the use of educational games as a means of learning is an approach that can strengthen not only

knowledge, but also the ability to communicate and collaborate with colleagues in terms of understanding the learning content. For the first time, gamification was used in marketing, later in medicine, environment, sports, engineering, mathematics, informatics, biology, communication, psychology (Table. 1).

Table. 1. Stages of using gamification in the spheres of activity (Rodrigues da Silva, Rodrigues, & Pereira Leal, 2019)

Year	Field of activity
2011	Marketing
2013	Medicine, informatics
2014	Environment, sport, psychology
2015	Mathematics, biology, communication
2017	Engineering

Gamification has a ternary purpose:

- 1) support and motivation of users to perform the assigned task;
- 2) involvement of users in activities;
- 3) maintaining the interest of users in a particular field that can improve learning.

In management education, gamification began in the US with the Top Management stimulus in 1961, universities in Michigan, California, Pennsylvania, and Indiana used many management decision-making games (since 1961), followed by Monopoly in 1999. Gamification was actively used when teaching accounting, financial accounting, PowerPoint, Excel, management, entrepreneurship, tourism, innovation, industrial production (Rodrigues da Silva, Rodrigues, & Pereira Leal, 2019).

There are two types of gamification (Polyanska, Andriiovych, Generowicz, Kulczycka, & Psyuk, 2022):

- External gamification is aimed at consumers, the main purpose of which is to increase their loyalty and company revenues. This type of gamification is used for groups of individual customers who already use the company's services and who simultaneously benefit from gamification.

- Internal gamification is aimed at increasing the productivity of the company's personnel. In addition, this group is no less important for gamification tools, because, implemented by a competent HR management, they allow the company to develop dynamically by attracting the right qualified employees, as well as ensuring the best use of their potential.

The following companies use gamification in Ukraine: Ukr Post, Vodafone UA, KFC, Alfa Bank, Teple Misto, Interpipe, Cafe "Desyatka", McDonald's, PwC, "Nova Poshta", Netpeak, Promavtomatyka Vinnytsia, Silpo, Furshet, 100ok and ATB.

The main methods of gamification are: quests, accrual of rating points for completed tasks and the opportunity to receive a reward for this, strategic, situational and corporate games and tournaments, simulation games for training and stimulants.

According to research conducted by scientists in the paper (Polyanska, Andriiovych, Generowicz, Kulczycka, & Psyuk, 2022), only 30% of respondents know about gamification, 42.5% do not know about it, and 27.5% have only heard something about it, but do not know what it is. At the same time,

60% of respondents have experience working with gamification, 72.5% confirm the effectiveness of gamification, 71.4% believe that there is an overwhelmingly positive impact on staff relations due to increased work productivity.

Gamification affects the quality of business education. Thanks to it, the processes are improved:

- 1) certification of personnel;
- 2) staff motivation;
- 3) staff training and development;
- 4) strengthening of corporate culture and internal communication.

Fig. 1 shows the main directions of action on the quality of business education of gamification.

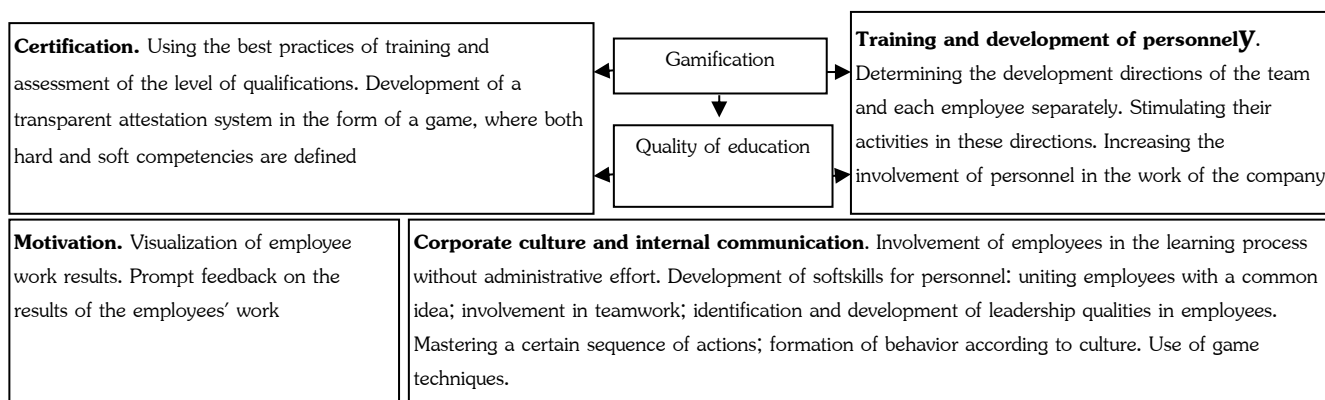


Fig. 2. Main directions of action on the quality of business education during gamification

You can improve the quality of business education through the use of the following methods based on gamification:

- Encouraging employees to develop and adapt to new digital tools such as CRM (Customer Relationship Management), digital workplace, service management, ERP (Enterprise Resources Planning), internal, etc.;
- Enhancing employee productivity through competition using games to increase motivation;
- Determining the launch and productivity of gamification, as well as the strategic plan for its implementation by successfully engaging employees in new processes and practices;
- Tracking and evaluating individual performance through ratings, levels, or statuses and designing reward systems that meet each employee's recognition needs;
- Encouraging knowledge sharing and creating healthy competition to promote a positive approach to transformation within the company;
- Engaging communities of managers or ambassadors to change management representatives.

The strategy should be the basis of the quality management mechanism of business education. It is worth using the following management strategies (Polyanska, Andriiovych, Generowicz, Kulczycka, & Psyuk, 2022):

1. Competitive strategy. There is one winner in the strategy. This method will help motivate employees and stimulate them to improve the quality of work. During the game, employees can accumulate points, create public leaderboards and cover the progress of the competition on social networks. The main advantage of competitions is that they increase the overall level of quality and speed of work, revealing the leader in the team.

2. Win-Win Strategy: There are no winners and losers in these games, and they allow players to reach the maximum number of participants. Depending on the quality of the work performed, employees can be awarded badges of different levels. It is very important not to forget about the visualization of rewards. All achievements of employees should be stored in an accessible place. The best option is to post the awards on the employee's profile on the Internet, and the news that the employee received the award can be public.

3. Aesthetic strategy: the achievements of employees should be aesthetically visualized. Chart and graph formats used to be popular, but this format is now considered obsolete. Instead, ratings can be represented as a tree that grows and becomes more fertile as the employee increases their knowledge, or that withers if not developed. Such a visualization will allow the employee to see his results and determine the vector of further development.

4. Quest strategy: Quests not only help to find a leader in the team but also to unite the team. Employees are united by common problems; together they look for ways to solve a certain problem, bringing them together as a team.

However, gamification has a number of advantages that weaken the quality of business education. Including:

- Human characteristics are neglected, and only ratings and competition are determined.
- Most staff can experience stress, which will reduce productivity.
- The privacy of individual gamification participants is violated.
- There is additional pressure on the staff as everyone strives to win and be successful, which makes cheating possible against the rules of the game.
- Personal work efficiency is subjective, each participant in the process evaluates labor productivity differently, which does not always coincide with objective indicators.

The mechanism of managing the quality of business education through gamification is shown in fig. 2.

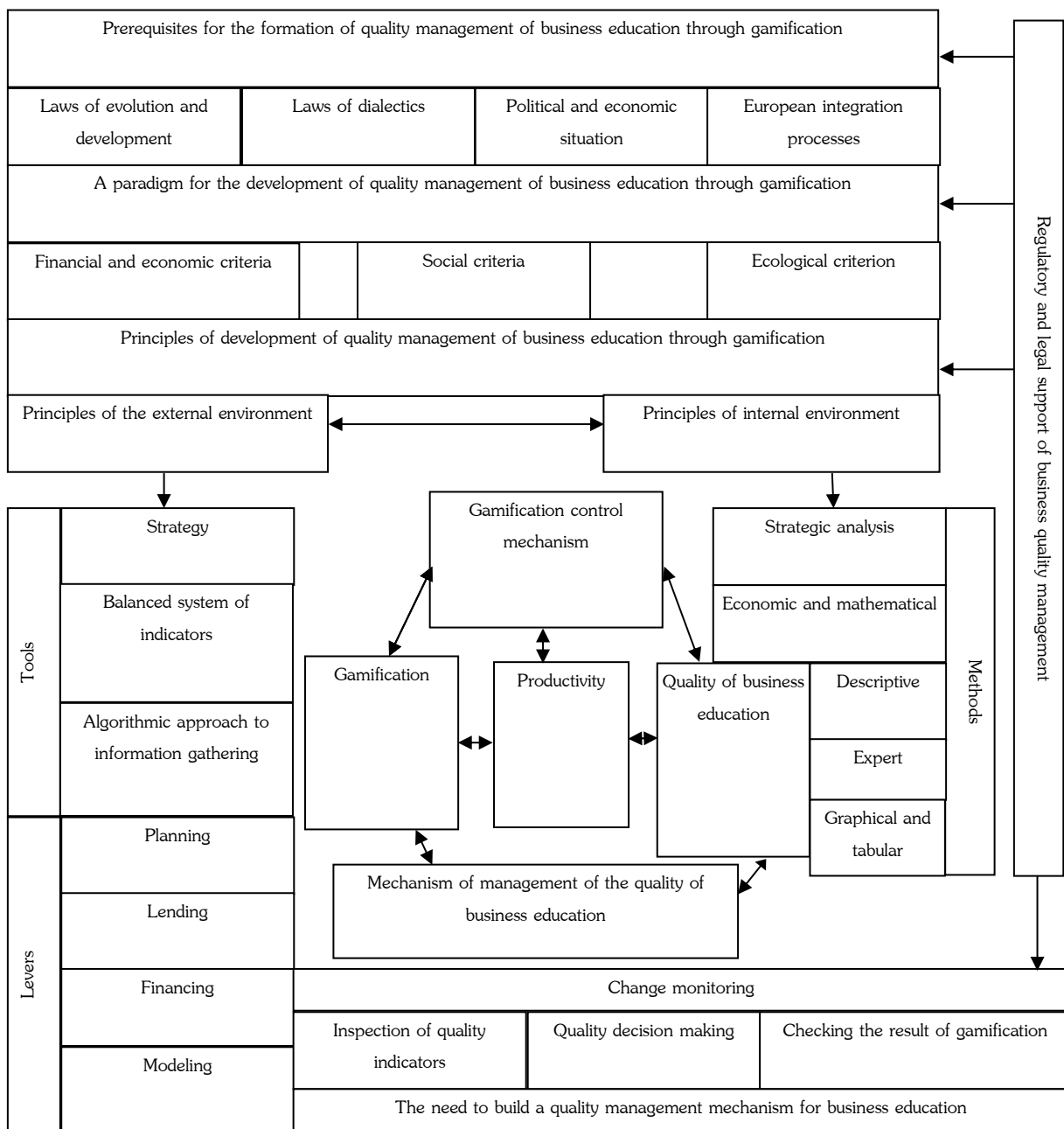


Fig. 2. Mechanism of quality management of business education through gamification

The main elements of the quality management mechanism of business education through gamification should be:

1. Target formation block. Here, the main goals of gamification, as well as the goals of the quality of business education, are defined.
2. Analysis block. It involves the study of the main indicators of the quality of education, indicators of measuring the activity of the enterprise as a result of the gamification process.
3. Audit block. It compares the planned indicators with the actual ones.
4. Control unit. Management of quality and gamification processes at all levels of management is assumed.

5. Controlling block. Contains a system of indicators, thanks to which it is possible to diagnose deviations of actual indicators from planned ones at the early stages.

6. Correction and implementation block. It analyzes deviations and develops a strategy to overcome these deviations.

The mechanism for managing the quality of business education should include a philosophy that should be based on awareness, loyalty to the environment, and its positive perception by all stakeholders. An exception is an increase in labor productivity and profit, which should be directed to business development. Work on productivity growth must continue constantly. The basis of the quality management mechanism of business education is labor productivity, which is the main measure of the successful operation of the enterprise and determines development priorities. Monitoring is a mandatory element of the mechanism.

The business education quality management mechanism and the gamification management mechanism are two different but interdependent blocks. They involve different approaches and set different goals. The goal of the business education quality management mechanism is to provide and receive quality services in the shortest possible time with minimal costs. The goal of the gamification management mechanism is to involve personnel in training based on the principles of motivation, interest, development, and self-improvement, rather than coercion and obligations.

It is worth noting that in business, consumers are looking for gamified systems that bring them pleasure, reward, competition, social interaction and recognition, customization, and a sense of community. Gamification also allows companies to collect spontaneous and valuable data about consumer thoughts and interactions. In general, gamification can be considered an innovative tool for popularizing the quality of business education by facilitating the interaction of consumers with other market participants.

In the book "For the Win: How Game Thinking Can Revolutionize Your Business" there are 6 steps for implementing gamification, taking into account the characteristics of the quality of business education (Werbach, Hunter, 2012):

1. Set gamification goals using SMART goal settings. Goals should be measurable, specific, relevant, achievable, and time-bound. Gamification tasks (such as increasing conversions, promoting products and services, increasing engagement on a website or social media, etc.) should have these five characteristics. In the future, when developing a game system, you should constantly adhere to the established goals and bring each element of the system into line with them.

2. Determine the target behavior of the players. Think through the behavior that is expected from the participants of the gamification system. The specific steps they need to take to achieve their business goals in the first phase. It is necessary to describe the chain of actions of the players, which will serve as the basis for designing the system.

3. Describe the players. Based on the information of web analytics, it is possible to determine the main types of consumers, their interests, and habits. At the stage of implementing gamification, it is necessary to investigate the problems more deeply, to understand their relevance.

4. Develop the structure of the gamification system. According to Hunter and Werbach, the structure of the game system has two levels (Introduction). At the micro level, there are engagement cycles. This is the chain "motivation to action → action → feedback". At the macro level, the "player's journey", the name of which was given by the authors of the methodology, creating an exciting story on

the basis of which the gamification system was created, is the story of the player's development from a beginner to a master.

5. Give players pleasure. There is a risk of shifting attention to the development of gamification mechanisms and system structure, although the game should be a pleasant activity, entertainment. Sometimes there is a need to look at the system being created through the eyes of a participant in order to understand whether a certain game will be enjoyable. The system will not work if the developer does not ensure that the needs of the players are met.

6. Build a gamification system. Considerable use of technologies is necessary for the full operation of the game system. In particular, the implementation of gamification on the website, in applications on mobile devices or even with the help of physical devices. It is necessary to combine all the structure and information prepared in the previous stages of development, adding game dynamics and mechanics to them, creating a system.

5. Discussion. An important aspect of the quality of higher education is the formation of leadership qualities among employees, planning and defining a development strategy, awareness and openness of information, customer orientation, and evaluation of results. These elements are defined in various education quality management systems, in particular: ISO, EFQM, MBNQA, SQAf, CFfBE, ABEF, TQM. In Ukraine, gamification in business education is just beginning to develop. It is used not only by educational institutions, but also by enterprises: Ukr Post, Vodafone UA, KFC, Alfa Bank, Teple misto, Interpipe, cafe "Desyatka", McDonald's, PwC, "Nova Poshta", Netpeak, Promavtomatyka Vinnytsia, Silpo, Furshet, 100ok and ATB. In them, gamification occurs in the form of quests, rating points for completed tasks and the opportunity to receive a reward for this, strategic, situational and corporate games and tournaments, simulation games for training and stimulants. In general, the research carried out in the article confirmed the following provisions that can be used in personnel management with the help of gamification tools.

It is noted that the role of gamification in quality management of business education is growing. Current programs provide for the presentation of simulation samples in management, which can be used for educational purposes at enterprises. Gamification is primarily related to incentives that motivate employees to achieve better results. In turn, game learning is associated with games that have a developmental effect – they provide certain knowledge or develop skills. Elements of games and social networks to manage the quality of business education are powerful tools for increasing staff engagement and effective performance of professional tasks. Examining different types of gamification makes it possible to define the principles of gamification in terms of the rules that players must follow in order to achieve the goals of the activities embedded in the game. One of the powerful tools of business education quality management for increasing staff engagement and effective performance of professional tasks are elements of games and social networks. Gamification can be of different types (external and internal). It makes it possible to define the principles of gamification in terms of the rules that players must follow in order to achieve the goals of the activities embedded in the game. Gamification is most often used to ensure the quality of business education the method of competition to motivate employees and encourage them to improve the quality of work; Win-Win strategy – a method of rewarding employees depending on the quality of the work performed; aesthetics and emotional coloring, a method that uses the

aesthetically visualized dimension of the company's employees; and quests – a method that helps not only to determine the team leader, but also to unite the team by solving typical situations and participating in the decision-making process. During gamification, team members can be multi-generational, that is, the manager must determine the individual level of technical skills of each employee and decide whether they will be able to use the game as a performance indicator. Gamification is relevant not only at the enterprise level, but can also be used for educational processes at universities. The main measures for the introduction of gamification at the enterprise level are training, creation and development of appropriate digital platforms, ensuring the compliance of these actions with the strategy and plans of the organization, improving the gamification environment and motivating employees to participate in the gamification process to perform personnel management functions. Gamification should be considered in the context of digital transformation.

Business education primarily differs from the traditional level of practical application, when the student is in a constant mental process, sees mistakes, shortcomings and makes the right decision. The quality of business education is ensured by the following programs: at classical universities, at advanced training, professional retraining and MBA programs, at corporate universities. Corporate universities arose in the companies McDonald's, Disney, Coca-Cola, Motorola, Procter & Gamble, General Electric.

The quality of education is the factor that determines the economic development and competitiveness of the country, increases the world rankings.

The authors proposed the main directions of action on the quality of business education with gamification, including staff certification, staff motivation, staff training and development, strengthening of corporate culture and internal communication. They can be implemented through the proposed mechanism for managing the quality of business education through gamification. It contains such blocks as goal setting, analysis, auditing, management, controlling, correction and implementation. It contains indicators of gamification, labor productivity, and quality of education.

In the future, it would be worthwhile to consider in detail the relationship between gamification and the quality of education, to highlight the main indicators for evaluating these components. Also, the authors of the work did not raise questions about differences or similarities in approaches to providing business education at enterprises and in educational institutions. This is the subject of further research.

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