Педагогическая
психология

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Characteristics of gamification as a method of adult education

The article presents the results of a theoretical analysis on the problem of gamification as a method of adult education. The topic of gamification is relevant for both children and adults, since the method of education is unique. The use of gamification in adult education is an underexplored field of scientific knowledge. The topic of using gamification in education has been actively developed over the past 10 years and during the pandemic the interest in this issue has significantly increased. As a result of the study the following characteristics of gamification as a method of teaching adults were identified: 1) the ability to train complex skills in an easy form; 2) the focus of a game on development of an individual, a specialist etc., and not only for pleasure; 3) the realized game is implicated into a real activity and reflects it; 4) the adult participants of a game are "well – motivated", i.e. the process of the game is meaningful and participation is voluntary; 5) the result of the game is associated with the presence of positive mental states of its participants; 6) the method flexibility: gamification gives the possibility to get feedback, to diagnose a situation and weaken or strengthen the impact, to adjust the elements of a game to the situation

with specific criteria, performance indicators; 7) adult participants have new interpersonal and business connections, new forms of relations.

Key words: gamification, adult education, characteristics of adult education, gamification as a teaching method

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Особенности игрофикации как метода обучения взрослых

В статье представлены результаты теоретического анализа зарубежных и отечественных авторов по проблеме игрофикации как метода обучения взрослых. Хотя тема использования игрофикации в образовании активно разрабатывается последние 10 лет, во время пандемии интерес к этой проблеме значительно вырос. В результате исследования были выявлены следующие особенности игрофикации как метода обучения взрослых: 1) возможность тренировать сложные навыки в легкой форме; 2) направленность игры на развитие личности, специалиста и пр., а не только ради получения удовольствия; 3) реализуемая игра вплетена в реальную деятельность и отражает ее; 4) взрослые участники игры мотивированы на участие в ней, т.е. процесс игры осмысленный, участие добровольное; 5) результат игры связан с наличием благоприятных психических состояний ее участников; 6) гибкость метода: игрофикация дает возможность получать обратную связь, диагностировать ситуацию и ослаблять или усиливать воздействие,

подстраивать элементы игры под ситуацию с конкретными критериями, показателями эффективности; 7) у взрослых участников игры возникают новые межличностные и деловые связи, новые формы отношений.

Ключевые слова: игрофикация, обучение взрослых, особенности обучения взрослых, игрофикация как метод обучения

Introduction

The topic of using gamification in education has been actively developed over the past 10 years and during the pandemic the interest in this issue has significantly increased. The main focus of research is aimed at teaching pupils and students [16; 24; 25]. There is little research on the characteristics of adult education. Meanwhile, at present with the advent of a new life – long learning concept, gamification has become a new norm for a modern person regardless of age. Nowadays the main emphasis in studying of gamification is associated with online resolutions [25], but the use of game elements in an offline – format can have a number of advantages due to their being no need to program complicated applications. In addition, the facilitator can creatively carry out the tasks of the game process and change them for the best way to achieve the goals and the assessment, although, includes formal criteria but takes into consideration more nuances.

In the English language there is a difference in definition of the word game. This division is not present in all languages. So, game is considered a game by the rules where there is a ultimate goal (a win), play is a game process itself, associated with pleasure and being in a "transitional space", there are no aims and rules here.

In Russian there are differences in the terms defining online and offline methods of game use in a non-gaming context. Gamification is a calque from English, it considers the understanding of a game in a digital space, mechanics and their impacts on a person are being studied. The Russian word "game" combines both words "game" and "play" and is used for a broader understanding of this phenomenon and, apparently, is more associated with considering communicative, interactive and perceptual aspects of communication in the context of the game interaction.

In this study gamification is understood to take into account a social component and is applicable to online and offline situations.

The term gamification was first defined in 2011 by S. Deterding: "gamification is the use of elements of a game design in non-game contexts" [7, p. 10]. The study of this phenomenon, its definition and methods started to be developed less than 20 years ago [12]. K. Kapp defines gamification as an educational technique that uses elements, planning, mechanics and reward systems from games or videogames in a non-game situation, for example, education [14].

In the opinion of C. Dichev and D. Dicheva, gamification in education is an approach to encourage students' motivation and involvement by incorporating game design into the learning environment [8].

A. Shirokolobova notes that gamification in learning makes it easier to achieve goals set by the educational process with the help of gaming elements by making traditional study activities more dynamic, flexible and attractive to students.

R. Landers suggests separating the definitions of game, serious game (or game for study as, for example, simulators of reality for mastering skills of doctors, pilots or military) and gamification. So, the main difference, in the author's opinion, is that gamification is not a method but a design of a learning process with the help of game elements that complement educational methods for achieving the best results [18].

In other words, a game is a thing a student gets information through and gamification is a tool that helps to improve the quality of the education level by reducing the effect of psychological barriers.

As O. Gilyazova and A. Zamoshchanskaya note that many researches focus on the studying of game elements but it is impossible to consider gamification only as a set of game mechanics. The phenomenon of gamification should be considered integrally, taking into consideration the process and result of education, as well as social context of players interaction [11].

However, at present, gamification is being developed methodologically that contributes to a more complex, comprehensive consideration of this phenomenon as a learning method, and its components underlie the methodology for designing the educational process.

R. Hunicke and others point to three components of gamification:

1) mechanics describes separate game components at the level of data representing and algorithms;

2) dynamics describes behaviour of mechanics at runtime that affects input data of the player and output data of each other over time;

3) aesthetics describes the desired emotional reactions evoked in the player when he interacts with a game system.

A. Marczewski points four key elements in the gamification system:

1) interaction with peers in a social context;

2) autonomy in making decisions;

3) development in the process of using game elements to increase one's level;

4) the purpose this interactions takes place for [20].

C. Dichev и D. Dicheva point three elements of gamification:

1) dynamics: contains a vivid narrative, united with the common topic to achieve an ultimate goal, appropriate development, emotions, restrictions and social relations;

2) mechanics: includes elements that promote development of an action such as rules, tasks, cooperation, competition, rewards or feedback before, during and after intervention. For example, tasks could be offered for individual or groups with different levels of difficulty inside or outside an educational institution;

3) components: these are symbols motivating the learner and indicating rewards – avatars, specific achievements, points, badges, leaders boards etc. [8].

As S. Nadi-Ravandi and Z. Batooli note, the phenomenon of gamification is characterized by three important criteria; motivation, learning and involvement [25].

A. Shirokolobova writes that for the effective application of gamification it is necessary to take into account the goals of education, the needs and abilities of participants and necessity to motivate them [27].

At this stage gamification is comprehended and conceptualized not only at the applicative, but also at the theoretical level [5; 17]. For example, both domestic and foreign studies actively use the theory of situational learning [19], the theory of goal achievement [10], social conceptual theory [4], the theory of activity and cultural-historical approach [32].

Authors, including western ones, actively use the term "the zone of the proximal development" but due to peculiarities in the translation of L.S. Vygotsky's studies into English, this phenomenon often loses depth [30]. In works on gamification, therefore, authors use this concept as a set of skills that can be formed with the help of well-thought-out mechanics and plot.

In addition, it is interesting to note that the understanding of gamification prevailing in modern science is in many ways similar to the definition of a game given by D.B. Elconin but applied to both children and adults and used both online and offline. D.B. Elconin defines game as "the reproduction of serious activity outside of a real utilitarian situation". The main elements of a game are role, game actions, game use of subjects, plot, rules, real relations between players [9, p. 13].

If we compare the understanding of a game by D.B. Elconin and developments of scientists in the field of gamification, it will be possible to draw

some parallels: dynamics of a game-role, plot, game actions; mechanics of a game-rules. The idea of gamification is expanded due to the study of rewards. At the same time little attention is paid to real relations between participants of the game. Even in online – games both in multiplayer games and single-player games teaming – up into communities is implemented and encouraged for best playing the games and gaining benefits.

As mentioned above, modern research in the field of learning gamification relates to children more than to adults. Based on the fact that different age groups have their own characteristics, it is impossible to fully extrapolate the obtained data to the gamification process for the older generation without additional research. Therefore, the study of gamification specific in relation to adults becomes significant.

Study

Until the moment when a child acquires enough skills, knowledge and experience to become independent, self-consistent and an active participant of society, learning is the main form of activity. Its whole life is built around attending educational institutions and developing events. As for an adult, education becomes a form of satisfying the highest needs associated with self-realization and self-actualization. This specific underlies the differences that are reflected in methods of organisation of learning environment for different age groups.

At present there are separate studies associated with related topics: gamification of learning in schools, special and higher educational institutions, differences in teaching children and adults, application of gamification in certain forms of adult activity (for example, marketing and advertising, loyalty increase, development of important skills in responsible areas of activity such as medicine, airplane and ship control, using of game technologies for developing skills in military and space industries – so called serious games).

As a result of the analysis of the sources the distinctive characteristics of gamification in adult learning have been identified. Let us consider them in more detail.

The ability to train complex skills in an easy form

M. Kara [15] points in the review that adults have specific learning difficulties associated with external and internal conditions. So, internal difficulties include such difficulties as organisational ones (difficulty in finding balance between study and work, family, social life), difficulty in learning process (lack of commitment, reduced interest, low concentration, decreased self-confidence etc.), technical difficulties (search for available and relevant materials etc.).

External difficulties include work – related problems (workload, time constraints due to study, financial issues etc.), domestic situation difficulties (lack of conditions to study, lack of understanding and support from relatives etc.).

The meaning of gamification is precisely the use of tools that help to overcome barriers in learning, get rid of "unnecessary difficulties" [11; 18; 21].

Thus, the principles of organising the educational environment for adults include work with difficulties that go beyond the educational context and the trained skills are more complicated and socially significant, from the success and well – being and even the life of an adult and one's environment may depend on their development (for example, if education is associated with workers' advanced training in production, transport, medicine etc).

Focus of a game on development of a personality, a specialist etc, but not only for pleasure (подзаголовок второго уровня)

Considering gamification through the prism of Vygotsky's cultural theory, it should be noted that the game acts as a mediating activity, provides the link between the social and the individual and the result is associated with development of a game participants identity [28].

The success of gamification is associated with a positive impact on the participant of the educational process, cognitive, motivation and behavioural outcomes of the educational process [26], i.e. the more consciously the participant approaches the educational process, then more noticeable (including for himself) the final result will be.

An adult, unlike a child, masters a game like a tool, makes it an instrument for satisfying his needs in learning.

In this sense the game for an adult acts as a means for the goal achievement [2; 13], but not an end of itself, becomes a controlled interiorization.

The realized game is implicated into a real activity and reflects it

A child due to its age characteristics cannot consider a game process in the context of life tasks, an adult, on the other hand, is always in this context, correlates with it and is guided by practicability in his activity. Based on this, it should be noted that an adult's motivation for the game differs from a child's one. Unlike a child, an adult doesn't lose the sense of reality, duty [11].

An adult's approach to the game can be creative due to the development of higher mental functions, his activity is associated with the principals of integrity, is directed to objectifying and satisfaction of needs, is connected with values and helps to complete current tasks that are associated with an individual context of a person [23].

Adult participants are "well-motivated",
i.e, the game process is meaningful, participation is voluntary

For a child a game is an involuntary, spontaneous process not associated with self-actualization. An adult will take part in the game only if it is associated with resolving his life tasks and helps self-improvement.

The effectiveness of gamification for adults is higher than for children [16]. A child cannot predict how useful the studied tools, skills and knowledge can be in the current and future activity, and the educational context is built by teachers, psychologists, parents who have this understanding.

An adult chooses or creates a learning context by himself due to mental development, surrounding tasks, experience, responsibility to society and gamification contributes to resolving these problems and does not play a leading role, as in learning children [33].

The result of game is associated with the presence
of the positive mental status of its participants

As noted in a number of studies, the motivation component of gamification is connected to a positive attitude towards a game [6], pleasure [1], an affective component based on value, significance and focus on an individual himself [17], dedication, voluntariness and joy [11]. It is the combination of feedback from the motivational and affective component of the game that allows us to speak about gamification effectiveness [3].

There is an idea that the older person is, the more monotonous the process of his education is. For a long time, the game was considered as something unique only to a child. However, as researches show, it helps also adults to overcome resistance to study, especially if it is perceived as important.

Unlike a child, an adult can create game situations and manage them on his own; he forms a game thinking and can actively take part in creating and fixing favourable mental states.

Method flexibility: Gamification gives the possibility to receive feedback, diagnose the situation and weaken or strengthen the impact, adjust the game elements to the situation with specific criteria, performance indicators (подзаголовок второго уровня)

Gamification effectiveness is associated with the fact that both the process and the result in its use are integrated with the ability to evaluate what is happening to a person [22].

Thus, the possibility of gamification is the study of learning as a form of building social knowledge that helps players of a community to develop new skills, by design provides evident, constant situational assessment and feedback [28; 29].

The game is a space of freedom and pleasure but with the help of gamification it becomes associated with the real activity of a person, can be flexible in relation to the goal and evaluation of effectiveness of the process and result of the learning process [17].

From this point of view offline forms of education can be more effective in comparison to more documented online – platforms and environments. With live interaction it is possible to instantly track an unlimited quantity of difficulties or requests and immediately work on them.

Adult participants in the game have new interpersonal and business connections, new forms of relationships

Motivation of adults for entering into the game interaction differs from children's one. If a child can make friends with peers to provide an interesting game, then for adults it is often a specially organised space that helps to interact.

Education is possible without a social context and the context of the game itself becomes a tool in learning and understanding the mutually influencing interaction between a person and a society [28]. The social elements of gamification are very important and used for achieving a common goal and support [17; 31].

The game mechanics can be specially used in business interactions or trainings, directed to work through problems in relations. But any activity including a well-thought-through system of participants involvement can serve as a good base for continuing communication outside of the training program.

Conclusions

Currently, the theme of studying gamification in educational environment is relevant and promising. Even though the number of studies on this topic is growing, there is a common view on the definition of gamification, further study of this phenomenon is needed at the philosophical, methodological and instrumental levels.

The use of gamification in learning adults is an underexplored branch of scientific knowledge. As a result of the study the following characteristics of gamification as a method of teaching adults were identified: a ability to train complex skills in an easy form; the focus of a game on development of an individual, a specialist etc., and not only for pleasure; the realized game is implicated into a real activity and reflects it; the adult participants of a game are "well-motivated", that is the process of the game is meaningful and participation is voluntary; the result of the game is associated with presence of positive mental states of its participants; the method flexibility:

gamification gives a possibility to get a feedback, to diagnose a situation and weaken or strengthen the impact, to adjust the elements of a game to the situation with specific criteria, performance indicator; adults participants have new interpersonal and business connections, new forms of relations.

As prospects for further research of gamification as a method for learning adults the following areas can be distinguished:

1. The significant gap in the research of gamification is the lack of development of the topic of psychological safety when using game technologies in non-gaming context.

There is an opinion that the game for children is inclusion in surrounding reality, and for adults it is an escape from it [11]. Such a development of events is possible when a person due to his mental characteristics and specifics of growing – up could not move from the level of literal reproduction of the game mechanic to creative rethinking, turned out to be "captivated" by the game [15].

In studies it is possible to specify the criteria of the game effectiveness, to search for potential difficulties and psychological prerequisites of game dependence. These points can be applied widely both in the situation of life action games and digital environment. In this context both short-term and long-term researches would be of interest.

In order for gamification to remain a useful, safe source of knowledge, it is necessary to keep a balance between the game and current tasks. In adult education the game can, retaining its properties, also be supplemented by the properties of work [1].

2. The context of gamification for adults shall be considered not from the position of "an adult becomes a child" but "an adults uses the tools he has mastered earlier". In this sense the possibility of gamification study based on a cultural-historical approach seems promising.

In foreign studies the essence of the cultural-historical conception by L.S. Vygotsky can be often significantly simplified. At the same time, it is the understanding of the game from the prospective of cultural means of learning that can ensure the development of philosophical level of the gamification phenomenon. Development and clarification of ideas on educational environment in connection with the game can then provide understanding of gamification at the methodological level. And concrete, instrumental level thus correlates to the components of gamification (dynamics, mechanics and rewarding).

3. More attention shall be paid to a social aspect of gamification. The study of people's behaviour in the game communities can significantly expand the idea of a person. The digitalization of contacts can affect communication not only in the context online educational programs but also when using offline gamification.

As studies for gamification show, the game can become for an adult a valuable resource that helps to overcome external and internal barriers when obtaining knowledge important for him serving the goals of self-development and self-actualization.

Despite the fact that more and more research is being carried out on the problem under study, there is still an understanding of all the mechanisms behind gamification, its use often does not take into account all the nuances of this phenomenon, since they have not been studied [7]. At the same time, it is necessary to clarify and expand ideas about the game in the life of not only children, but also adults.

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