MANAGING COGNITIVE MOTIVATION USING GAMIFICATION ELEMENTS IN A DIGITAL LEARNING ENVIRONMENT

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Annotation. This article examines the problem of managing cognitive motivation of students using gamification elements in a digital learning environment. Maintaining and increasing educational motivation in modern conditions of digital education is one of the urgent pedagogical tasks. The study analyzes the theoretical foundations of the concept of cognitive motivation, describes the main elements of gamification and their impact on the learning process. The influence of the use of gamification elements on the learning activity, interest and learning outcomes of students is determined. In addition, the advantages and limitations of introducing gamification in a digital learning environment are reflected, and the conditions for its effective pedagogical application are substantiated. The results of the article will make it possible to develop scientific and methodological recommendations aimed at improving the digital educational environment and increasing educational motivation.

Keywords: cognitive motivation, gamification, digital learning environment, academic activity, learning management, pedagogical technologies, digitalization, learning outcomes.

Introduction

The role of the digital learning environment is increasing in the modern education system. The intensive development of information and communication technologies has created new forms of organization of the educational process. Increasing the educational motivation of students in this process has become one of the urgent problems. In particular, the development of cognitive motivation is a key factor determining the effectiveness of learning in a digital environment. In this context, the use of gamification elements is considered as an effective mechanism for increasing students' interest in the learning process.

Cognitive motivation is a psychological and pedagogical category that characterizes the student's inner desire for learning activities, the conscious need to acquire knowledge. It manifests itself in the individual's desire to acquire new knowledge, overcome intellectual difficulties and develop himself in the process of cognitive activity. Cognitive motivation is one of the main factors that ensure the student's activity, constant interest and creative search in the learning process.

In the pedagogical and psychological literature, cognitive motivation is often considered as the most important component of intrinsic motivation. In conditions of internal motivation, the student carries out educational activities not for the sake of external reward or control, but for the sake of cognitive interest and self-satisfaction. In this sense, cognitive motivation directly contributes to the stability of learning outcomes and deep learning.

In the works of scientists, the structure of cognitive motivation consists of several interrelated components:

1. Cognitive interest – the student's intellectual interest in a particular educational material or problem.

2. Conscious understanding of the purpose of learning – students' awareness of the importance of learning activities.

3. Search activity – the ability to independently search, ask questions and analyze new information.

4. Reflection and self-assessment-evaluate learning outcomes and monitor their development.

Results and discussion. Cognitive motivation is one of the main factors determining the effectiveness of the educational process. Cognitive motivation students of higher education actively perform educational tasks, strive to solve complex tasks and positively perceive difficulties arising in the learning process. The learning outcomes of such students will be stable and long-term.

Cognitive motivation is the student's inner desire to acquire knowledge, understand new information, and engage in intellectual activity. It manifests itself through activity, interest and constant attention in the learning process. With high cognitive motivation, the student consciously perceives the educational material and is inclined to independent search.

The role of cognitive motivation in the digital learning environment is particularly increasing. Since the student has a high degree of independence and independence in Online and mixed learning, cognitive motivation serves as the main driving force of the learning process.

The formation of cognitive motivation is influenced by a number of internal and external factors. Internal factors include personal interests, abilities, learning

experiences, and the student's own goals. And external factors include teaching methods, the content of teaching, the pedagogical skills of the teacher and the peculiarities of the learning environment.

Gamification is a pedagogical and technological approach based on the use of elements and mechanisms inherent in the game in non-game areas, including in the educational process. The main goal of gamification is to increase students' interest in learning activities, strengthen their activity and constantly form learning motivation. In modern scientific literature, gamification is considered as an effective means of organizing a digital educational environment.

The term "gamification" first became widespread with the development of digital technologies and interactive systems. According to the definition of the scientist S. Deterding, gamification is the use of game design elements in a non-gaming context. This definition clearly shows the essence of gamification, that is, the use of game mechanisms in a non-gaming learning or work environment.

Gamification elements allow us to manage cognitive motivation as an effective mechanism of these external factors. Game elements make learning tasks more attractive and increase student engagement.

From a pedagogical point of view, gamification makes the learning process emotional, interactive and result-oriented. The elements of the game contribute to the presentation of educational content in an attractive form, ensuring the active participation of students and enhancing the inner essence of learning activities. Gamification creates conditions not only for training students, but also for developing their skills of self-regulation, cooperation and problem solving.

Materials and methods: In scientific research, gamification elements are divided into several groups:

1. Motivational Elements-Scores – Scores, levels, achievements and awards;
2. Social elements-ratings, leaderboards, group assignments, collaboration;
3. Structural elements – missions, scenarios, stages and learning paths;
4.Feedback elements – visual indicators, progress indicators, instant results.

The effectiveness of gamification is closely related to theories of motivation. In particular, the theory of self-determination forms the scientific basis of gamification. According to this theory, intrinsic motivation is enhanced if the needs for autonomy, competence, and social affiliation are met. Gamification elements enhance cognitive motivation by supporting these needs.

The digital learning environment provides ample opportunities for the formation and development of cognitive motivation. Interactive tasks, multimedia materials, and gamification elements increase students' interest in the learning process.

However, in order to maintain motivation in a digital environment, the learning content must be pedagogically correct.

Thus, cognitive motivation is one of the main factors determining the quality and effectiveness of a student's learning activities. The development and management of cognitive motivation requires the purposeful use of effective pedagogical technologies in a digital learning environment, including elements of gamification.

Maintaining and managing cognitive motivation in a digital learning environment is challenging because there are many distractions in the online environment. Therefore, it is necessary to introduce pedagogical technologies aimed at increasing motivation.

The digital learning environment creates favorable conditions for the introduction of gamification elements. Online platforms, mobile applications, and educational systems allow you to visualize learning activities and manage learning through gamification. Gamification increases the activity of students in the digital environment, makes the learning process more interesting and productive.

The benefits of gamification include increased motivation to learn, increased student engagement and interest, and improved learning outcomes. However, excessive use of gamification can lead to a predominance of external motivation, replacing educational content with a game. Therefore, gamification should be applied in harmony with pedagogical goals and on a scientific basis.

Thus, gamification is an effective pedagogical tool for managing cognitive motivation in a digital learning environment. This allows you to make the learning process more active, interactive and personalized. The purposeful and systematic use of gamification elements contributes to improving the quality of education.

Gamification is the use of game-specific elements and mechanisms in an in-game environment, including in the educational process. The main goal of gamification is education. Gamification elements perform several important functions in managing cognitive motivation.(Table-1)

Arousing interest.
- The elements of the game help to make learning tasks more attractive and attract the student's attention.

Support for internal motivation.
- Levels and achievements form a student's sense of self-development.
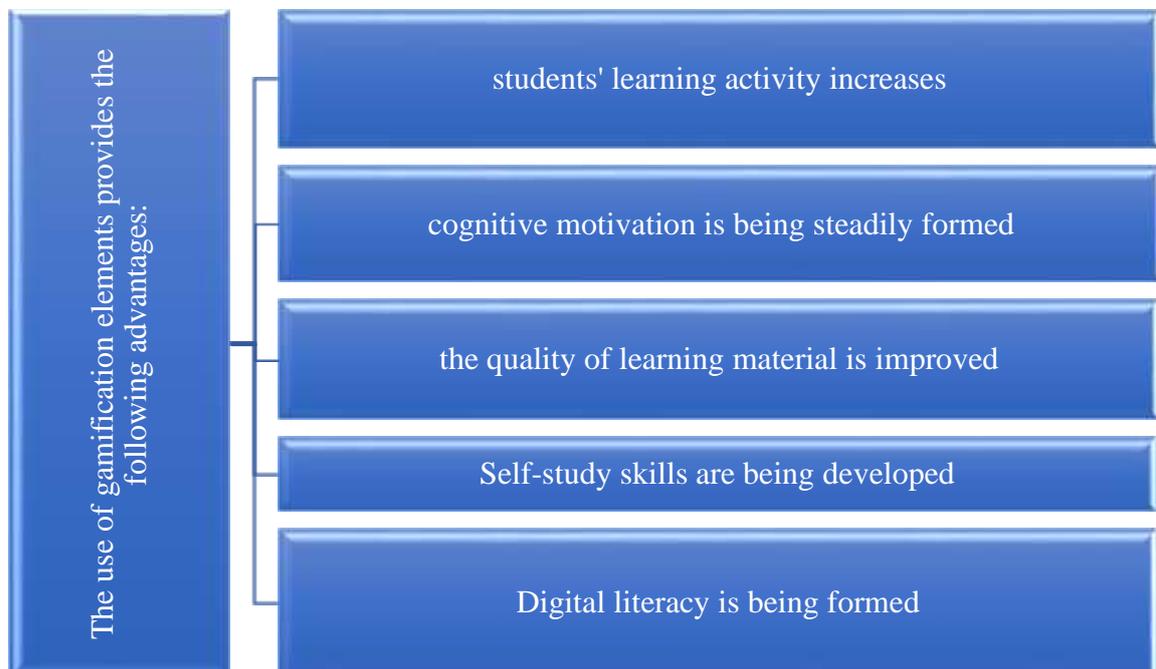
Speeding up feedback
- Scores and visual indicators allow you to immediately see the learning outcome.

Coordination of competition and cooperation
- Ratings and group assignments promote social interaction.

Gamification of education is a strategic approach aimed at awakening the student's inner potential by introducing game elements and mechanics into the learning process.

Gamification technology has several important pedagogical priorities compared to traditional education formats.:

The use of gamification elements provides the following advantages:
- students' learning activity increases
- cognitive motivation is being steadily formed
- the quality of learning material is improved
- Self-study skills are being developed
- Digital literacy is being formed

Gamification transforms the student from a passive listener into an active subject. The principles of "seeing again" or "next opportunity" in game mechanics eliminate the feeling of fear that the student is wrong. This encourages him to experiment, look for new solutions, and actively complete tasks. Scores and levels allow the student

to see the result of their actions at the moment, which ensures that activity is maintained at a high level.

The "flow theory" of M. Csikszentmihalyi is implemented here. Gamified tasks maintain a balance between the student's abilities and difficulty level. This leads to the full involvement of the student in the process and the acquisition of a long-term cognitive interest. Although rewards (badges, ratings) serve as an external incentive, a sense of accomplishment in the game enhances the internal "motivation to succeed."

Interactive game scenarios transform abstract theoretical knowledge into a real practical context (missions and quests). The student perceives knowledge not as a dry fact, but as a means of solving a certain game problem. This has a positive effect on the preservation of information in long-term memory and the ability to transfer (apply in other cases) knowledge. Dividing complex topics into small game levels makes it easier to learn information.

Gamification increases the student's autonomy. Game formats often allow students to choose the path of completing assignments or the direction of character development. This will help you feel responsible and develop your own learning skills (Self-regulated learning). The level-to-level transition strategy teaches the student to set specific goals and plan ways to achieve them.

Since Gamification is often carried out within the framework of digital platforms, it indirectly enhances the technological training of the student. Students hone their skills in the digital environment using various educational applications, LMS platforms, and virtual worlds. Complex game tasks require algorithmic thinking, data analysis, and decision-making speed.

Gamification is not the transformation of education into "entertainment", but a scientifically based means of increasing the effectiveness of learning through game dynamics. This approach is particularly consistent with the cognitive characteristics of generations Z and Alpha, translating education into a more democratic and personality-oriented format.

In addition, there are certain limitations in the use of gamification. Excessive use of game elements can lead to students becoming dependent on external motivation. In addition, not all game elements are effective for all students. Therefore, gamification should be applied in harmony with pedagogical goals and on a scientific basis.

Although Gamification (enriching learning with game elements) is an effective tool in education, its haphazard use can have unpleasant consequences.

Gamification is not just a game, it is a complex psychological and pedagogical process. When implementing it, the following fundamental issues must be taken into account:

The biggest gamification risk is the "over-justification effect." The student loses his inner interest in acquiring knowledge and begins to work only for external rewards (points, badges, ratings). If the elements of the game stop, the student's motivation to learn decreases dramatically. Instead of delving into the content of the material, the student can start looking for ways to score points faster using game algorithms.

In order for gamification to be compatible with pedagogical goals, it is recommended to adhere to the following principles: game elements should help in achieving it, and not replace the educational goal. To offer students various "game paths" (competition to one, an individual development plan to another). The reward should be not only an assessment, but also meaningful feedback reflecting the student's progress.

The main goal of introducing gamification is not to turn a student into a player, but to awaken his inner passion for knowledge through the dynamics of the game.

Conclusion. Thus, the management of cognitive motivation using gamification elements in a digital learning environment is an important mechanism for improving the effectiveness of the educational process. Gamification makes the learning process fun, interactive, and results-oriented. However, when applying it, it is necessary to take into account the individual characteristics of students, pedagogical goals and the possibilities of the digital environment.

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