

PRELIMINARY EXPLORATION OF EDUCATIONAL GAME DESIGN

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The actual paper distinguishes the peculiarities of game-based learning through the use of certain small games or multimedia in the classroom and in extracurricular activities; and using other methods to engage inactive students in the classroom.

Keywords: creative ability; gamification; primary school teaching; promotion of information technology; teaching methods.

ПРЕДВАРИТЕЛЬНОЕ ИЗУЧЕНИЕ ДИЗАЙНА ОБРАЗОВАТЕЛЬНЫХ ИГР

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В статье рассматриваются особенности обучения на основе игр на примере использования определенных небольших игр или мультимедиа в классе и на внеклассных занятиях; а также использование других методов для привлечения неактивных учащихся в классе.

Ключевые слова: творческие способности; геймификация; обучение в начальной школе; продвижение информационных технологий; методы обучения.

With the development of the times, the educational models of various countries are also constantly changing. Educators are also continuing to study the most suitable educational model. Nowadays, game based teaching is widely used in various countries, and its main feature is that it allows students, especially primary school students, to focus their attention. For example, it is not easy for them to learn a foreign language, but through game based teaching, it can stimulate students' interest in the course [1]. The meaning of game-based teaching is to let the content of the course be presented in the form of competitions or role playing, and then answering questions. This will make the classroom less boring, enable students to learn knowledge by playing games, and enable them to learn new knowledge in a relaxed and active atmosphere. Due to the ingenious integration

of knowledge into educational games, the combination of knowledge and fun in games is gaining popularity in the educational world.

It is not difficult to find that educational games have increasingly become a research hotspot in recent years, and the number of papers published on this topic is also increasing, which shows that educational games have become increasingly important in the field of education. Even though the use of gaming in domestic education is a bit late, certain results have been achieved. This process is currently not ideal. Teachers focus on the teaching process, and some courses cannot be easily integrated into games, such as politics, and other subjects. Most students learn by rote, which makes it easy to cope with exams [2]. However, this can lead to students being unable to draw inferences from one example when encountering reasoning problems. Moreover, there is a lack of communication between teachers and students, and students' interest in learning cannot be raised, which leads to low classroom teaching efficiency. There are also teachers who apply game-based methods in teaching, most of which fail to integrate teaching and games. The education department manages to promote such teaching methods, but there are no targeted documents to train teachers, and there is no encouragement for advanced teachers. This restricts the development of game based teaching.

Design principles of educational games. In game-based teaching, certain principles must be observed to achieve better teaching results, the most important of which are the following:

1) *educational.* The ultimate goal of using any method is to enable students to learn knowledge. Therefore, in the process of game-based teaching, it should not only be concerned about whether the students are focused or not disruptive or the level of activity in the classroom, but rather should pay attention to whether the students have actually learned knowledge points.

2) *Student oriented.* Gamification of education is mainly aimed at primary and secondary school students, and students at this age are also at a time when they love to play [3]. Especially with the rapid development of electronic products, their appeal to students far exceeds that of ordinary teaching methods. Therefore, changing teaching methods is an effective strategy to improve teaching quality. Students are the main body of learning and teachers play an organizing and guiding role in the teaching process, responsible for helping and supervising students' learning behavior. They can also participate in students' activities to fully understand their psychological activities, in order to better conduct teaching design. This can not only fully mobilize students' interest in learning, stimulate their learning motivation, meet their desire for expression, but also achieve the teaching purpose of

“teaching with pleasure” [4]. Make the teaching atmosphere lively and interesting.

3) *Gaming*. Interesting games quickly attract students and they do not feel bored. They devote themselves wholeheartedly to the game, learn knowledge through the game, and feel happy in the process of learning. Gammability refers to the use of games that meet the needs of players, divided into levels. Moreover, games should be challenging, and games that are not challenging can make students feel boring. Therefore, the difficulty of games should vary depending on the learning content.

Design process of educational games. The ultimate goal of educational games is to enable students to learn knowledge in a way that interests them, so it is the most important part of the entire process. In game-based teaching, educators play a very important role. They cannot follow the traditional teaching methods for cramming, nor can they just play games unrelated to the teaching content in order to activate the classroom atmosphere. For educators, the teaching content is clear, and the teaching objectives are also determined [5]. In order to conduct game-based teaching, it is necessary to combine the teaching content with the language of life, organically integrate the teaching content and the game scene, to avoid the separation of the two and transfer the attention of students, which can neither achieve the due learning effect nor meet the curriculum requirements. Therefore, educators should hold a good balance when conducting game-based teaching, and teaching design should be aimed at achieving teaching goals, rather than playing games for the sake of games.

Game format. There are many categories of educational games, such as role playing, quiz, action games, desktop games, online games, and other types. It can also be divided into categories such as individual participation, competition, cooperation, etc. Personal participation means that players understand and learn content during the game. There will be a level like design that will motivate learners to constantly break through and gain a learning experience from it. According to M. D. Dickey, competition refers to students divided into several groups or two or three classmates in the same game, through competition to play the game [6]. The characteristic of this type of game is that it stimulates the students' instinct to win, thereby becoming more involved in the game. According to K. M. Lee, cooperation refers to two or more students working together to complete the same game for the same goal [7]. In this process, such students will help each other and discuss with each other. Learners will learn to have different understandings of the same knowledge content and also help students learn qualities such as teamwork and team spirit.

Analysis of learner characteristics. Different learning groups have different characteristics, such as age, intelligence, and so on. Students in the first and sixth grades have completely different cognitive characteristics. Moreover, individuals also need to pay attention to observation. For example, each student's personality and physical characteristics are different, and some students may have physical defects that prevent them from completing action games [8]. Moreover, some students have psychological problems, and this should be paid attention to when placing students without a sense of teamwork in cooperative games. Only by understanding the learning and physical characteristics of students and designing games based on this can we meet their desires and needs for games.

The development of today's era emphasizes innovation, and students' innovation ability is not only related to the development of education in Kazakhstan, but also has a certain impact on the development of various industries in our country. According to the physical and mental characteristics of students in primary school, primary school students are more interested in game learning than basic theoretical learning. Therefore, when carrying out relevant teaching work, primary school science teachers can better stimulate the learning interest of primary school students by integrating games into the teaching process, so that students can learn happily, achieve the goal of improving the classroom teaching effect of teachers, and achieve primary school students' active learning. The enlightenment education for primary school students has a very important impact on their future development. Gaming teaching methods have a very important impact on cultivating students' autonomy and open thinking, lifting the shackles of exam-oriented education in Kazakhstan, and promoting the continuous progress of education in Kazakhstan. In the future development, education departments and educators will inevitably shift their attention to the implementation of gaming teaching, which will have a huge impact on Kazakhstan's education.

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