


Chapter 2

Identification of Features in the Application of Gamification in Teaching Children of Different Ages

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ABSTRACT

The article analyzes the use of digital educational games in school education, starting with the classification and detailed examination of various types of games. The advantages and disadvantages of their application in the educational process are explored, which helps identify the potential and limitations of this approach. To ensure the practical significance of the research, specific recommendations are provided

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for the development of educational games, considering the age characteristics of primary, middle, and high school students, obtained through Poisson distribution and equations for measuring motivation. Problems faced by educators in implementing educational games are discussed, ranging from methodological unpreparedness to challenges in integrating games into existing curricula. Possible solutions to these issues are also discussed, and strategies and recommendations are proposed for the broader and more effective use of educational games in school practices.

INTRODUCTION

The history of gamification in education dates back to the early 20th century, when the first attempts were made to use game-based approaches to enhance learning effectiveness. One of the earliest examples is the Montessori method, which utilized educational games and materials to foster children's independence and creative thinking. With the development of computer technology in the 1980s, the first educational video games, such as Oregon Trail, emerged, allowing students to explore historical and geographical topics through gameplay. In the 1990s, gamification received a new boost with the proliferation of personal computers and the advent of internet technologies. During this period, developers began actively creating educational platforms and games, such as Carmen Sandiego and Math Blaster, which gained popularity among students and teachers.

Since the beginning of the 21st century, gamification in education has grown increasingly popular due to advancements in mobile technology and social media. The emergence of platforms like Duolingo, Khan Academy, and Minecraft Education Edition marked a turning point, enabling the integration of game elements into the learning process at a new level. Today, gamification is a rapidly evolving field that offers broad prospects for improving the educational environment. The evolution of gamification demonstrates its high potential in teaching and learning, as well as the need for further research to optimize its use in various educational contexts.

Gamification in education is a methodology aimed at increasing student engagement by integrating game elements into the learning process. The essence of this approach lies in creating a learning environment where the level of student involvement is comparable to that typically achieved in a game (Alsawaier, 2018). In other words, gamification seeks to make learning more engaging, motivating students to actively participate and deeply absorb educational material through game mechanics and strategies.

Digitalization has transformed every aspect of modern life, profoundly affecting all areas of human activity. In the field of education, technological advancements have brought substantial changes to teaching approaches across numerous disciplines

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