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Integration of Active Games into The Educational Process of Physical Education in Higher Education Institutions

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ABSTRACT

The article explores the integration of active (movement-based) games into the educational process of physical education in higher education institutions. The study examines theoretical foundations, pedagogical conditions, and practical effectiveness of using active games as a tool to enhance students' physical, social, and psychological development. A system-based approach is applied to analyze the role of games as complex interactive systems influencing student engagement and learning outcomes. The research includes an experimental component conducted among university students, comparing traditional teaching methods with game-based approaches. The results demonstrate that active games significantly improve motivation, teamwork, physical activity levels, and communication skills. The findings support the effectiveness of integrating active games into physical education curricula in universities.

Keywords: Active games, physical education, higher education, game-based learning, student motivation, system approach, teamwork.

INTRODUCTION

Modern higher education increasingly emphasizes innovative pedagogical technologies aimed at improving student engagement and learning outcomes. Physical education (PE), as a fundamental component of student development, requires new approaches that go beyond traditional training methods.

Active games represent a dynamic and interactive form of physical activity that combines movement, rules, and social interaction. They are widely used in educational environments and contribute to physical, emotional, and cognitive development.

In recent years, the integration of game-based approaches in PE has gained attention due to their effectiveness in increasing motivation and participation. Studies show that game-centered approaches improve decision-making, engagement, and physical activity levels compared to traditional teaching methods.

The concept of integrating games into physical education is closely related to the system-activity approach, where learning is viewed as a dynamic system of interactions between participants.

Research indicates that sports and games can be analyzed as complex systems involving multiple interacting elements such as players, environment, and rules. This perspective allows educators to design more effective teaching strategies.

Furthermore, system thinking has proven effective in promoting physical activity and developing comprehensive educational programs. Game-based learning approaches, including Teaching Games for Understanding (TGfU), emphasize student-centered learning and active participation.

Kozlova (2025, 2026) highlights the importance of

collaborative learning and digital feedback in physical education, emphasizing the role of interaction and communication in student development.

The study was conducted at Fergana State University and involved 60 students aged 18–22 years. Participants were selected from undergraduate physical education courses and had comparable levels of physical fitness at the beginning of the study.

The sample was divided into two groups:

Control group (n = 30): students followed traditional physical education methods, including standard exercises, drills, and instructor-led training.

Experimental group (n = 30): students participated in a program that integrated active games into each physical education session.

The study was carried out over a 12-week period. Both groups attended regular classes with the same frequency and duration; however, the experimental group's curriculum emphasized game-based activities such as team games, coordination exercises, and cooperative physical tasks, while the control group followed conventional training without the use of active games.

Preliminary and final assessments were conducted to compare the effectiveness of the two approaches.

Table 1.

Comparison of student engagement levels

Indicator	Control Group (%)	Experimental Group (%)
Attendance	72	91
Participation	65	88
Motivation	60	90
Team interaction	58	92

The results show a significant increase in student engagement in the experimental group.

Table 2.

Physical performance indicators

Indicator	Before Experiment	After Experiment
Endurance (min)	10.5	14.2
Speed (sec)	12.8	11.1
Strength (reps)	18	26

The integration of active games positively influenced physical performance.

The findings confirm that active games are an effective pedagogical tool in higher education. They contribute to:

- Increased motivation
- Improved teamwork
- Development of communication skills
- Higher physical activity levels

Game-based approaches create a student-centered learning environment, encouraging autonomy and creativity. This aligns with modern educational paradigms emphasizing active participation.

Moreover, the system-activity approach allows viewing active games as structured educational systems that integrate physical, cognitive, and social components.

Successful integration of active games requires:

- Proper selection of games
- Alignment with educational objectives
- Teacher competence
- Student involvement
- Continuous feedback

The integration of active games into physical education in universities is a highly effective approach that enhances both physical and personal development of students.

The study confirms that game-based methods:

- Increase motivation
- Improve physical performance
- Strengthen teamwork
- Enhance communication skills

Thus, active games should be considered an essential component of modern physical education programs in higher education institutions.

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