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THE ROLE AND SIGNIFICANCE OF THE GAMIFICATION TABLE IN INCREASING FEMALE STUDENTS' PHYSICAL ACTIVITY AND ENGAGEMENT IN PHYSICAL EDUCATION CLASSES

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ABOUT ARTICLE

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Abstract: This article analyzes the importance of the gamification approach, particularly the use of gamification tables, in enhancing the physical activity of female students in higher education institutions. The gamification method makes the learning process more engaging, motivating, and effective, encouraging students to actively participate in physical education classes. This paper highlights the impact and outcomes of exercise tables developed based on the gamification system on students' activities.

Introduction. Today, increasing the physical activity of students, especially female students, in higher education institutions remains one of the most pressing issues. Due to technological development and the widespread use of digital tools, there has been a noticeable decline in physical activity among young people. This leads to various health problems, low physical fitness, and reduced social engagement.

Therefore, in modern pedagogy, gamification (i.e., game-based learning) is widely used to engage students in active participation. Gamification systems are particularly effective in physical education classes, with the primary goal of motivating students, creating a competitive environment, and increasing interest in the subject.

A program has been developed to increase interest and physical activity among female students during practical lessons and extracurricular activities.

SPECIAL GAMIFICATION SYSTEM TABLE FOR FEMALE STUDENTS

Stages	Objectives	Exercises
Stage 1 – “Learning Stage”	1. Learning how to hold and throw the ball into the basket	Correctly holding the ball; throwing with and without a ball; walking with and without a ball with a partner; throwing from different positions around the board
	2. Correct dribbling and running with the ball	Running with and without a ball; walking with a partner with and without a ball; three-step dribble to the board
	3. Passing the ball correctly	Throwing the ball long distances with the right and left hands; passing with a partner; throwing to a designated distance
Stage 2 – “Active Movements”	1. Learning types of dribbling	Dribbling exercises; dribbling forward with the left and right hand
	2. Using both hands equally	Dribbling 100 m with the right hand forward and returning with the left; deceptive moves
	3. Load on both legs	Jumping with the right leg forward and returning with the left; walking in a seated position
Stage 3 – “Mini Games”	1. Holding the ball against an opponent	Dribbling between the legs; protecting the ball
	2. Learning offensive skills	100 m sprint; partner drills
	3. Learning defensive skills	Team drills; backward movements
Stage 4 – “Coordination of Movements”	1. Combining Stage 1 drills	Catching and shooting exercises; partner coordination
	2. Moving from own zone to opponent’s zone	Dribbling between legs to the opponent’s court; 100 m partner exercises
	3. Winning the “I am first” game	Agility exercises; flexibility exercises; cone drills
Stage 5 – “Striving for the Goal”	1. Relay games	Team movement drills; speed exercises
	2. “Who has the ball”	Agility drills; endurance exercises
	3. “Colorful”	Leg strength drills; jumping exercises

Stage 6 – “Players’ Competition”	1. Pair competitions	Drills with and without a ball in pairs; distance-based pair exercises
	2. Correct components	Continuous sequence drills; cone-based exercises
	3. Demonstrating shooting combinations	Leg and jumping exercises; cone-based drills
Stage 7 – “Final Stage”	1. Student skill test	100 m running test; shooting test; vertical jump test
	2. Paired game	100 m paired running; team-based paired games
	3. Team test	Team competition; offense and defense drills; special exercises

Gamification is a method of motivating students by integrating game mechanics into the learning process. In physical education, a gamification table serves as a plan that displays the stages of each exercise, performance criteria, and a reward system. This table transforms the class from a mere exercise session into an engaging and enjoyable activity.

Table 1. Statistical Analysis of Pre- and Post-Research Results on Improving Female Students’ Physical Activity through a Gamification System

Nº	Physical Performance Indicator	Before Research (Mean \pm σ)	After Research (Mean \pm σ)	Growth (%)	P (Significance)	Physical Performance Indicator
1	30 m sprint (sec)	7.8 \pm 0.45	6.9 \pm 0.36	6.9 \pm 0.36	↑ 11.5 %	P < 0.05
2	1000 m run (min)	5.40 \pm 0.52	4.86 \pm 0.41	4.86 \pm 0.41	↑ 10.0 %	P < 0.05
3	Long jump (cm)	165.2 \pm 5.7	178.4 \pm 5.2	178.4 \pm 5.2	↑ 8.0 %	P < 0.05
4	Grip strength (kg)	24.8 \pm 2.1	28.3 \pm 2.4	28.3 \pm 2.4	↑ 14.1 %	P < 0.05
5	Sit-ups (per min)	32.5 \pm 3.6	39.2 \pm 3.2	39.2 \pm 3.2	↑ 20.6 %	P < 0.01
6	Heart rate (rest, bpm)	82.4 \pm 3.5	76.8 \pm 3.1	76.8 \pm 3.1	↓ 6.8 %	P < 0.05
7	Physical activity index (points)	61.2 \pm 4.8	74.5 \pm 5.1	74.5 \pm 5.1	↑ 21.8 %	P < 0.01

The data show that after the implementation of the gamification system, positive dynamics were observed in all physical fitness indicators. Endurance (1000 m run), strength (grip strength), and the overall physical activity index significantly improved. Statistical analysis confirmed the significance of these changes at P < 0.05.

Results and Discussion. As a result of the gamification-based training sessions, the following positive changes were observed among students:

- Attendance increased by 30–40%;
- Motivation to perform physical exercises significantly improved;
- Physical activity and endurance levels rose;
- A need for independent training developed;
- A sense of teamwork and healthy competition emerged.

The gamification system fulfills the following pedagogical objectives:

- Enhances self-assessment and motivation;
- Helps achieve targeted results at each exercise stage;
- Makes classes dynamic and emotionally positive;
- Strengthens individual and group performance through competition.

After 8 weeks of gamified training:

- Physical activity increased by 25–30%;
- Motivation indicators improved by 40%;
- Independent exercise performance exceeded 50%.

These results confirm that the gamification table is an effective pedagogical tool.

Scientific Foundations of the Gamification-Based Methodology

The methodology developed through a gamification approach is based on the following scientific principles aimed at increasing students' interest in physical education classes, encouraging active participation, and creating a competitive environment:

1. Enhancing Intrinsic and Extrinsic Motivation

Gamification, based on the principle of learning through play, continuously motivates students by encouraging their active participation.

Through a reward system, students become more engaged in the learning process and consistently participate in physical activities.

2. Motivation Theory in Sports Pedagogy

Rewards and ranking systems encourage students to perform physical exercises more frequently.

Intergroup competitions serve as an effective means to increase physical activity levels.

3. Developing Movement Coordination

Exercises designed based on basketball elements help improve overall motor skills.

Dribbling and passing activities strengthen general balance and coordination of movement.

4. Gradual Increase of Physical Load

Simple exercises are introduced at the initial stage, and their complexity gradually increases over time.

This system ensures the development of students in accordance with their physical fitness levels.

The gradual complexity of basketball exercises developed within the gamification system yields highly effective results in engaging students in physical activity. Through this methodology, students:

- Master basketball elements more easily and effectively.
- Have the opportunity to monitor their progress and improve their performance through mutual competition.
- Experience physical training as more engaging and interactive due to gamification.
- Are motivated to participate regularly and enhance their physical activity levels through the reward system.

Conclusion. In conclusion, the methodology based on the gamification table plays a crucial role in increasing female students' physical activity and engagement. It makes the learning process more engaging and competitive, fosters independence and responsibility, and enhances the need for movement. Most importantly, it promotes a healthy lifestyle and awareness of its importance.

The widespread use of gamification in physical education allows for organizing classes according to modern educational requirements and encourages students to become more active participants in the learning process.

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