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IMPROVING THE SYSTEM FOR ASSESSING STUDENTS' PHYSICAL FITNESS LEVELS BY GRADE IN GENERAL EDUCATION SCHOOLS

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Abstract
This article focuses on improving the system for assessing students' physical fitness levels by grade in general education schools. The study analyzes the current state of physical education programs and proposes new approaches based on international experiences and Uzbekistan's regulatory documents. It explores ways to enhance the system's efficiency through age- and gender-adapted tests, the use of modern digital technologies, and teacher professional development. The research outcomes contribute to advancing physical education in schools and fostering a healthy generation.

Keywords: Physical fitness, general education schools, grade-based assessment, testing system, healthy lifestyle, digital technologies.

Introduction

Physical education and sports are key factors in fostering a healthy generation in modern society. The Decree of the President of the Republic of Uzbekistan dated January 24, 2020, No. PF-5924, "On Measures to Further Improve and Popularize Physical Education and Sports in the Republic of Uzbekistan," along with the Presidential Resolution dated November 15, 2024, No. PQ-392, "On Fundamental Improvements in the Teaching of Physical Education in General Secondary Schools and the Development of Professional Activities of Physical Education Teachers," and the Cabinet of Ministers' Resolution No. 355 dated July 4, 2022, "On Measures to Further Improve the System of Retraining and Professional Development of Physical Education and Sports Specialists," emphasize the need to enhance the system for assessing students' physical fitness.

Currently, the system for assessing students' physical fitness in general education schools faces several challenges: tests are not fully aligned with age and gender characteristics, there is a lack of objectivity in evaluation, and the use of modern technologies is limited. These issues not only affect the effectiveness of physical education classes but also reduce students' interest in sports. International experiences, such as those in Finland and Japan, demonstrate that physical fitness assessment systems based on individualized approaches and digital technologies increase student motivation.

The relevance of this study lies in its alignment with Uzbekistan's "Healthy Generation" strategy and the need to support students' physical development. By developing and

implementing a new system for assessing physical fitness, this research aims to promote a healthy lifestyle in schools. Thus, this work supports reforms in physical education and aims to create a system aligned with global standards.

Research Objective:

To improve the system for assessing students' physical fitness levels by grade in general education schools, thereby enhancing the effectiveness of physical education programs and contributing to the development of a healthy generation.

Research Tasks:

To successfully achieve the research objectives, the following tasks were identified. These tasks comprehensively address all aspects of the topic and are systematically presented in tabular form.

MATERIALS AND METHODS

1. Analysis of the Current State of Physical Education Programs

Studying the current state of physical education programs and assessment systems in Uzbekistan's general education schools is a primary task. This analysis includes reviewing state standards, textbooks, and the content of practical classes. For instance, the 2023 physical education curriculum of the Ministry of Preschool and School Education of Uzbekistan outlines general exercises and tests by grade, but their alignment with age groups and modern requirements remains a subject of discussion.

Table 1: Analysis of Physical Education Programs

Grade	Current Tests	Shortcomings	Recommendations
1–4	Running, jumping	Not age-appropriate	Add flexibility tests
5–9	Pull-ups, sit-ups	Lack of objectivity	Introduce digital monitoring
10–11	Complex exercises	Outdated standards	Align with international norms

2. Study of International Experiences

Examining international experiences to develop a model tailored to Uzbekistan's schools is crucial. In Finland, physical education classes are based on individualized approaches, while Japan has a well-developed system of school sports clubs. The following aspects were considered for adaptation to Uzbekistan's context:

- Alignment of tests with age and gender.
- Use of digital platforms (e.g., Fitbit or MyFitnessPal).
- Teacher professional development.

Table 2: International Experiences

Country	System Features	Adaptation to Uzbekistan
Finland	Individualized tests	Customize by grade
Japan	School sports clubs	Establish school sports teams

3. Development of Age- and Gender-Adapted Tests

Tests for assessing students' physical fitness should vary by grade and gender. For example, grades 1–4 should focus on basic motor skills, while grades 10–11 should emphasize endurance and strength tests. The following test types are proposed:

- **Grades 1–4:** 20-meter sprint, standing long jump, balance exercises.
- **Grades 5–9:** 100-meter sprint, pull-ups, 500-meter run.
- **Grades 10–11:** 1000-meter run, sit-ups, flexibility tests.

Table 3: Test Types

Grade	Test Type	Objective	Standard (Boys/Girls)
1–4	20m sprint	Speed	5–7 sec / 6–8 sec
5–9	Pull-ups	Strength	5–10 / 3–7 reps
10–11	1000m run	Endurance	4–5 min / 5–6 min

4. Integration of Digital Technologies

The use of modern technologies enhances the system's efficiency. Examples include:

- A digital platform (e.g., Maktab.uz) for recording student results.
- Sensors to measure heart rate.
- Video analysis to verify the correctness of exercises.

5. Teacher Professional Development

Improving the qualifications of physical education teachers is essential for the system's success. Professional development courses should focus on:

- Modern testing methodologies.
- Use of digital technologies.
- Safety regulations and individualized approaches.

6. Implementation of a Monitoring and Analysis System

A system for regular monitoring and analysis of students' physical fitness levels will be developed, with results aggregated at the school, district, and regional levels.

Table 4: Monitoring System

Level	Task	Frequency	Responsible Party
School	Record results	Quarterly	Teacher
District	Analysis	Twice a year	Education Department
Region	Reporting	Annually	Ministry

These tasks aim to comprehensively improve the system. The identified issues and proposed solutions will significantly contribute to the development of physical education in Uzbekistan's schools.

RESULTS AND DISCUSSION

The research was conducted using a scientific approach and various methodologies. The key components of the methodology are outlined below. The study combines qualitative and quantitative methods. Qualitative analysis was used to examine the content of physical education programs and teachers' feedback, while quantitative analysis involved statistical evaluation of students' physical fitness test results.

Table 5: Methodology

Method	Objective	Application
Qualitative	Analyze programs	Interviews, document analysis
Quantitative	Measure results	Statistical analysis, tests

1. Sample

The study was conducted in 10 general education schools in Fergana Province. The sample included 1,000 students from grades 1–11 (50% boys, 50% girls) and 50 physical education teachers.

Table 6: Sample

Grade	Number of Students	Boys	Girls
1–4	400	200	200
5–9	400	200	200
10–11	200	100	100

2. Data Collection Methods

- **Tests:** Standard tests (running, jumping, pull-ups) were conducted to assess students' physical fitness.
- **Interviews:** Discussions with teachers addressed system shortcomings and improvement strategies.
- **Surveys:** Students and parents' attitudes toward physical education were studied.
- **Document Analysis:** Existing programs and regulatory documents were reviewed.

3. Data Analysis

Data were analyzed using SPSS software, applying the following statistical methods:

- Mean values and variance analysis.
- Distribution of test results by age and gender.
- Correlation analysis (relationship between physical fitness and academic performance).

Table 7: Analysis Methods

Method	Objective	Outcome
Mean	Summarize results	Grade-based differences
Correlation	Identify relationships	Physical and academic performance

4. Test Structure

Tests were organized by grade as follows:

- **Grades 1–4:** Basic motor skills (20m sprint, standing long jump).
- **Grades 5–9:** Complex tests (100m sprint, pull-ups, sit-ups).
- **Grades 10–11:** Endurance and strength tests (1000m run, flexibility).

Table 8: Test Structure

Grade	Test	Duration	Measurement Unit
1–4	20m sprint	10–15 sec	Seconds
5–9	Pull-ups	5–10 reps	Repetitions
10–11	1000m run	4–6 min	Minutes

5. Safety Measures

Before testing, students' health was checked by school medical staff. Special programs were developed for students with specific needs. This methodology ensures the research's scientific rigor and facilitates the practical implementation of results.

ANALYSIS AND RESULTS

The research results helped analyze students' physical fitness levels by grade and identify system shortcomings. Key findings are presented below in tables and diagrams.

1. Results by Grade

Test results indicate that while grades 1–4 students show satisfactory physical fitness levels, endurance and strength indicators decline in grades 5–9. In grades 10–11, only 30% of students met the standards.

Table 9: Results by Grade

Grade	Test	Average Result (Boys)	Average Result (Girls)
1–4	20m sprint	6.5 sec	7.2 sec
5–9	Pull-ups	6 reps	4 reps
10–11	1000m run	4.8 min	5.5 min

2. Differences

Boys outperformed girls in strength tests (pull-ups, sit-ups), while girls showed better results in flexibility and balance tests.

Table 10: Differences

Test	Boys	Girls	Difference
Pull-ups	6 reps	4 reps	+2 reps
Flexibility	25 cm	30 cm	-5 cm

3. Teachers' Opinions

According to interviews, 80% of teachers noted that the tests are outdated and highlighted the need for digital technologies.

4. Digital Platform Testing

Testing the digital platform (Maktab.uz) reduced the time for recording and analyzing results by 50%. The results underscore the need for new tests, digital technologies, and teacher professional development to improve the system.

CONCLUSION AND RECOMMENDATIONS

The research analyzed the current state of the physical fitness assessment system in general education schools and developed specific recommendations for its improvement. The findings reveal that existing tests are not fully aligned with age and gender characteristics, evaluations lack objectivity, and the use of modern technologies is limited. Additionally, physical fitness levels vary significantly by grade, highlighting the need for an individualized approach.

Recommendations:

1. **New Testing System:** Develop age- and gender-specific tests by grade. For instance, focus on balance and flexibility for grades 1–4 and expand endurance and strength tests for grades 10–11.
2. **Digital Technologies:** Widely implement digital platforms (e.g., Maktab.uz) for recording and analyzing results.
3. **Teacher Professional Development:** Organize training courses for physical education teachers on modern methodologies.
4. **Monitoring System:** Establish a system for regular monitoring and analysis of students' physical fitness.
5. **Parental Involvement:** Regularly inform parents about physical education classes and involve them in sports events.

These measures will contribute to the development of physical education in schools, strengthen students' health, and increase their interest in sports.

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