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# Organizational I Mathematical and Statistical Analysis Pedagogical Experimental Work Detail Preschool Education Organization 5-7 Years

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**Abstract.** This article defines the criteria for assessing the physical fitness of preschool children; determining the results of an experiment among preschoolers using mathematical and statistical methods. Research stages, research methods, analysis of scientific literature sources, the effectiveness of the proposed methodology in pedagogical research, which is confirmed by a mutual comparison of indicators recorded based on the results of the experimental work, and advanced mathematical and statistical methods of reanalysis. results.
**Keywords:** research, method, teaching aid, physical exercises, physical qualities, elements of a sports game, exercise, walk, physical training, outdoor games.

**Introduction**. The purpose of the research is to achieve the effectiveness of developing the physical qualities and abilities of 5-7-year-old children in Preschool education organization mainly through physical exercises, active games and team games. Based on this, to study the characteristics of children and physical fitness indicators in Preschool education organization Determining the criteria for assessing the physical fitness of 5-7-year-old children in Preschool education organization The results of the experiment conducted among preschool children were determined using mathematical and statistical methods.

In the first stage of the research, i.e., the scientific and practical problems of the work to be carried out in the 2020-2021 academic year, the purpose and tasks of the research, and the sources of improving the physical training of children in Preschool education organization were studied. In addition, research documents and an oral questionnaire were prepared in order to study the level of preparation. A research model was created by analyzing the literature on measuring the performance of physical fitness tests conducted in Preschool education organization.

In the second stage of the research, i.e., in the 2021-2022 academic year, the results of the levels of physical training results of 726 children aged 5-7 of the 25th and 48th Preschool education organization in the city of Karshi, Kashkadarya region were obtained. 394 children of the 48th preschool educational institution, of which 220 are boys, 175 are girls, and 332 children of the 25th preschool educational institution, of which 192 are boys, 140 are girls, the 26th and 34th schools in Navoi, Navoi region 96 of the foster children of the educational organization are boys 50 girls, 115 children of the 26thPreschool education organization, of which 58 boys, 57 girls.

Children of preschool educational institutions No. 11 and 71 in Bukhara city, Bukhara region. The total number of children of preschool educational institutions No. 11 was 113 children, and the number of children of state preschool educational institutions No. 71 was 319. The level of physical fitness was determined by special tests (“Alpomish” and “Barchinoy” tests) was determined. On this basis, a system for improving children's physical education was developed.

In the third stage of the study, i.e., in the 2022-2023 academic year, the scientific research work carried out was reviewed and compared with all the results, and the data was processed using mathematical and statistical methods.

In the process of conducting the study, this We are convinced that methods for conducting activities with children were developed only after a thorough study of the contingent for the research conducted to identify the spiritual and moral characteristics of children. This conclusion was confirmed by our research, conducted in various places (Karshi, Navoi and Bukhara cities), and surveys. The results of the observation showed that even children who are considered by many preschoolers to be physically inactive and inattentive, engage in group and active games. The interest in the project grew. Proper organization The emotional impact of classes on children in the

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given conditions, on the formation of children, on increasing the effectiveness of their upbringing in a free moral spirit, is undoubtedly very positive.

Research methods

1. Analysis of scientific literature sources and generalization of scientific and methodological experiences:

a) Analysis of scientific and methodological literature;

2. Evaluation of the results of physical training;

3. Filling out a questionnaire and conducting oral questions and answers.

4. Conducting pedagogical experiments

a) Comprehensive assessment of children at the beginning of the experiment;

b) Pedagogical observations are determined by the natural method.

6. Analysis of the data obtained by the mathematical method.

Analysis of scientific literature sources and generalization of practical experiences It is known from the observations of a number of scientists that optimal movement provides a great opportunity for the physical development and increase in the abilities of children.

According to a group of scientists and practitioners, the most favorable period for the comprehensive development of physical qualities in children, increasing their attention to national values, and forming spiritual and moral qualities is the younger school age. The results of research conducted by many scientists show that the dynamics of a person's physical formation and physical training depend on the nature of the physical exercises performed consistently by the student. The most important issue for the development of physical qualities of preschool children is the correct organization and conduct of exercises based on active play and with elements of team sports.

In order to further revitalize the health-improving and educational work of 5-7-year-old children through team games, it is necessary to determine their increasing interest in physical exercises.

This will allow for the selection of effective means and subsequent pedagogical testing and experimentation.

The literature on the physical education of 5-7-year-old children in the pedagogical, physiological, and biological fields was analyzed and summarized. In the course of the analysis, the improvement of innovative technologies for the formation of physical qualities in 5-7-year-old Preschool education organization pupils and their movement activity in physical training were studied.

The influence of experiments on the process of physical education was analyzed and generalized in the pedagogical and physiological literature.

In order to generalize practical experiences, the types of exercises were determined in cooperation with a team of teachers and parents.

There is no doubt that physical education plays a special role in the formation and development of preschool children as individuals, complete people. Physical education was one of the main tools in the formation of children and adolescents at the very early stages of human development. However, it is evident that there is little information about physical education in preschool education in Uzbekistan in the scientific and methodological literature.

**Pedagogical observation and control tests**

In the study, preschool children aged 5-7 were selected based on the exercises of the “Alpomish” and “Barchinoy” tests in improving the means of education in physical education, innovative technologies for the formation of physical qualities.

To implement the above tasks, pedagogical experimental work was carried out in state preschool educational organizations 11-71 in Bukhara, 26-34 in Navoi, and 24-48 in Karshi.

In this case, physical education classes, outdoor team games, and classes were conducted in a way that was aimed at increasing the motor activity of children and preventing injuries.

**Method.** The effectiveness of the proposed methodology in pedagogical research was demonstrated by comparing the indicators recorded at the end of the experimental work. According to the idea put forward in the mathematical-statistical methods of re-analysis of the

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results, the re-analysis was carried out by determining the difference between the indicators of the experimental and control groups participating in the experimental test.

In the study, methods for assessing the effectiveness of the teaching process were used to process the experimental results using the method of mathematical statistics. In the process of statistical analysis of the results of the experiment, in order to verify the hypothesis, specific data were obtained through observations and experiments, and theoretically expected data were compared according to the hypothesis.

As a criterion for determining the physical training activity of the students, the knowledge levels of working in "Numerical methods" science based on blendlearning technology were evaluated in a 5-point method.

**General results of the experimental work of the trainees of the preparatory group of Kashkadarya region**

| Region | Index | In experimental groups | | | | In control groups | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Number of trainees at the beginning of the experiment | % | Number of pupils at the end of the experiment | % | Number of trainees at the beginning of the experiment | % | Number of pupils at the end of the experiment | % |
| Kashkadarya region | Excellent | 2 | 4 | 8 | 16 | 2 | 4 | 3 | 6 |
| | Good | 7 | 14 | 16 | 32 | 16 | 31 | 18 | 35 |
| | Satisfactory | 35 | 70 | 25 | 50 | 25 | 49 | 23 | 45 |
| | Unsatisfactory | 6 | 12 | 1 | 2 | 8 | 16 | 7 | 14 |

**The results of the trainees at the beginning of the experiment:**

$$\chi^2_{emp} = 50 \cdot 51 \cdot \left[\frac{(\frac{6}{50}-\frac{8}{51})^2}{6+8} + \frac{(\frac{35}{50}-\frac{25}{51})^2}{35+25} + \frac{(\frac{7}{50}-\frac{16}{51})^2}{7+16} + \frac{(\frac{2}{50}-\frac{2}{51})^2}{2+2}\right] \approx 5{,}46;$$

$$\overline{x} = \frac{1}{50} \cdot [2 \cdot 6 + 3 \cdot 35 + 4 \cdot 7 + 5 \cdot 2] \approx 3{,}10;$$

$$\overline{y} = \frac{1}{51} \cdot [2 \cdot 8 + 3 \cdot 25 + 4 \cdot 16 + 5 \cdot 2] \approx 3{,}24;$$

$$\eta = \frac{3{,}10}{3{,}24} \approx 0{,}96.$$

The obtained empirical value is less than the critical value, i.e. 5.46<7.81. This shows that the hypothesis H_0 can be accepted at the beginning of the experiment. That is, in the experimental and control groups, there is no significant change in the training of the students before the experiment.

**The results of the trainees at the end of the experiment:**

$$\chi^2_{emp} = 50 \cdot 51 * \left[\frac{(\frac{1}{50}-\frac{7}{51})^2}{1+7} + \frac{(\frac{25}{50}-\frac{23}{51})^2}{25+23} + \frac{(\frac{16}{50}-\frac{18}{51})^2}{16+18} + \frac{(\frac{8}{50}-\frac{3}{51})^2}{8+3}\right] \approx 2{,}58;$$

$$\overline{x} = \frac{1}{50} \cdot [2 \cdot 1 + 3 \cdot 25 + 4 \cdot 16 + 5 \cdot 8] \approx 3{,}62;$$

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$$\overline{y} = \frac{1}{51} \cdot [2 \cdot 7 + 3 \cdot 23 + 4 \cdot 18 + 5 \cdot 3] \approx 3{,}33;$$

$$\eta = \frac{3{,}62}{3{,}33} \approx 1{,}09.$$

The empirical value is greater than the critical value, i.e. 2.58<7.81. It follows that the proposed methodology is effective, which indicates that hypothesis H_1 can be accepted. That is, after conducting experimental work in the experimental and control groups, a change was noticed in the activities of the students.

From the above results, it was found that the indicators in the experimental group were 13% (1.09-0.96=0.13) higher than in the control group.

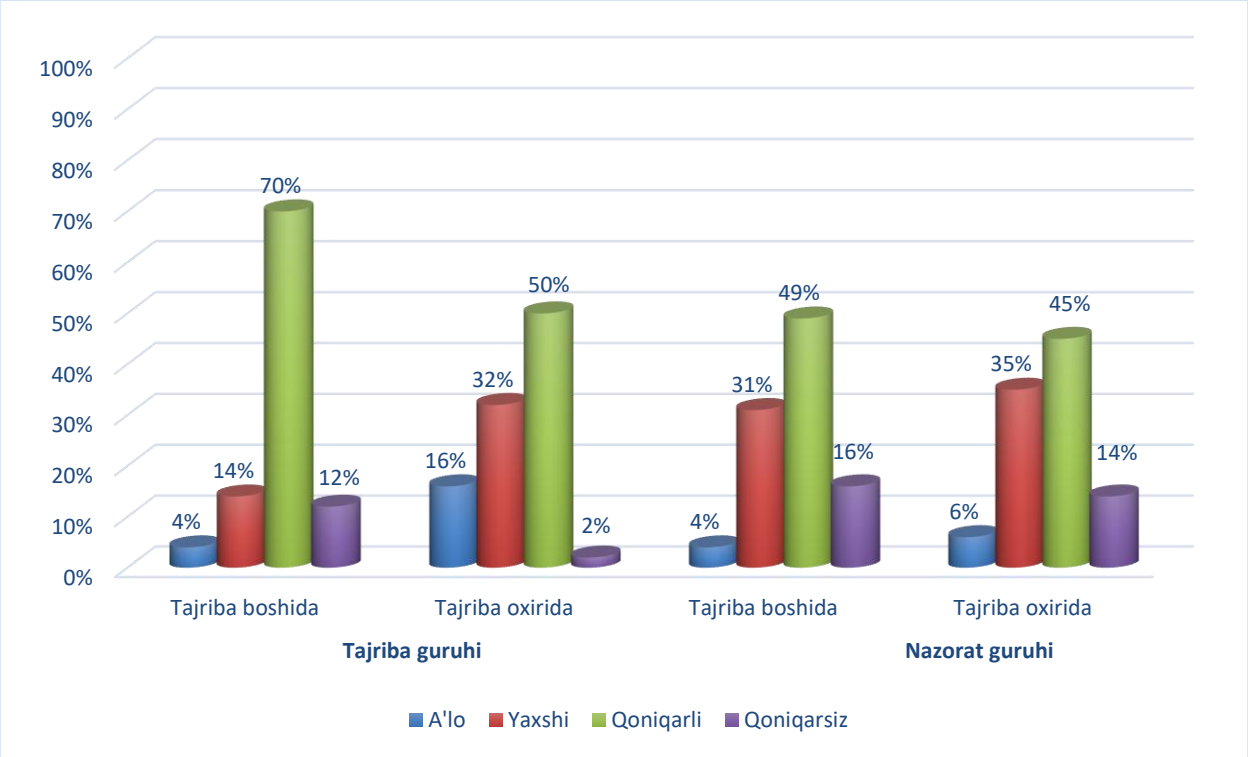


**Diagram of mastering indicators of the students of the preparatory group who participated in the experimental work of the Kashkadarya region**

**Conclusion:** From the above, it can be seen that the correct selection of active games helped to make the activities based on them interesting, increased the level of physical development and preparedness of children. Also, the data obtained showed that planning and control were carried out correctly. At the same time, the health of boys and girls in the experimental group improved and the level of illness decreased. From this we can draw the following conclusion: more and more effective use of folk national games also affects children's health, and their widespread implementation greatly contributes to the development of physical culture.

The use of such methods and techniques allows children to deeply understand the essence of active and team games, physical exercises in physical education, and to study them with interest.

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