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Integration of Kazakh National Games into the Physical Education System as a Factor in Increasing the Physical Activity of Students in Rural Schools

This article examines the potential of Kazakh national games to increase physical activity levels among students in rural schools. The study is relevant due to the growing prevalence of physical inactivity among schoolchildren, declining interest in organised physical education classes, and the need to incorporate ethnocultural elements into the educational process. The study aimed to provide a theoretical rationale for and experimentally evaluate the effectiveness of incorporating Kazakh national outdoor games into the physical education programme of rural schools. The study involved Year 5 and Year 6 students from a rural comprehensive school. Research methods included classroom observation, physical fitness testing, questionnaires, comparative analysis, and statistical analysis. The results of the pedagogical experiment demonstrated that the systematic inclusion of national outdoor games in physical education lessons increased students' physical activity levels, improved physical fitness, and fostered sustained motivation for participation in physical education. The proportion of students with low levels of physical fitness decreased, while the proportion with average and high levels increased. These findings confirm the effectiveness of integrating Kazakh national games into the physical education system for rural schoolchildren. Such games represent an effective means of developing physical abilities, promoting health, and preserving ethnocultural traditions.

Keywords: physical education, physical activity, national outdoor games, motor activity, rural school, physical fitness, ethnocultural education.

Introduction

The education system in the Republic of Kazakhstan is currently characterised by an increased focus on promoting the health of young people, encouraging sustained motivation for physical education and enhancing the quality of physical education programmes. Kazakhstan's regulatory documents emphasise the importance of improving children's and young people's health, increasing their physical activity and promoting a healthy lifestyle. These issues are particularly noticeable in rural schools, where limited access to sports facilities and equipment often makes it difficult to organise comprehensive physical education and health-related activities. The Law of the Republic of Kazakhstan "On Education" highlights the importance of creating learning conditions that support the overall development of students, safeguard their health, and encourage regular participation in physical activity. In practice, however, teachers are still seeking more effective and context-appropriate ways to increase pupils' physical engagement during school hours [1, 2].

Recent studies have reported a steady decline in the level of physical activity among school-aged children. Alongside this, researchers have pointed to a deterioration in physical development indicators and a growing prevalence of sedentary lifestyles. Motivation for regular physical education lessons also appears to be weakening. These challenges are especially evident in rural areas, where limited infrastructure, insufficient equipment, and a narrow range of extracurricular activities restrict opportunities for systematic physical activity [3–6].

At the same time, current reforms in education have placed greater emphasis on incorporating ethnocultural elements into teaching practice. In this regard, traditional Kazakh games are of particular interest, as they combine physical movement with cultural meaning and elements of folk tradition. When used in physical education lessons, such games tend to increase pupil engagement and help maintain interest in active participation throughout the class. In practice, such activities are usually perceived by pupils as more engaging than repetitive physical exercises [7, 8].

Both domestic and international researchers have examined the use of traditional games in physical education in the scientific literature. They note that traditional games contribute to the development of physical skills, coordination, reaction time, endurance and strength. They also emphasise their educational value in developing collectivism, responsibility, mutual assistance, and respect for cultural traditions [9, 10, 11].

Of particular interest are the pedagogical ideas of M. Dulaty, who considered physical education to be a vital component in the harmonious development of a child's personality. In his works, he emphasised the importance of strengthening children's health through active physical exercise, spending time outdoors and taking part in traditional outdoor games. According to the scholar, such activities contribute to the development of observation skills, dexterity, speed, and independence [11, 12].

Despite the growing number of publications devoted to folk games and ethnopedagogy, their practical implementation in rural school physical education has received considerably less attention. In particular, further research is required into the methodological support, pedagogical conditions and effectiveness of using Kazakh national games to increase student physical activity.

This study's scientific novelty lies in its theoretical substantiation and experimental verification of the effectiveness of using Kazakh national outdoor games to increase students' physical activity in rural schools with limited material and technical resources.

The study's practical significance lies in its potential to enable physical education teachers in rural schools to use the developed set of national outdoor games to organise in-class and extracurricular activities aimed at improving students' physical fitness and motor activity.

This study aims to provide a theoretical basis and experimental evidence for the effectiveness of using Kazakh national outdoor games to improve the physical fitness of students in rural schools.

Methods and Materials

An educational experiment was conducted from September 2024 to May 2025 at a comprehensive school in the Karkaraly district. Thirty-six Year 5 and Year 6 students participated in the study and were assigned to experimental and control groups. These groups were formed to ensure comparability of the study indicators during the ascertainment phase of the experiment.

Standardised educational testing methods were used to determine the students' level of physical fitness, including:

- a 60-metre run to assess speed;
- a 3x10-metre shuttle run to determine agility;
- a forward bend from a standing position to assess flexibility;
- a run 1000 metres to assess endurance;
- boys did pull-ups on a horizontal bar and girls did push-ups from a low support to assess strength.

The following methods were used in the study: analysis of scientific and methodological literature; pedagogical observation; questionnaires; pedagogical testing; comparative analysis; and mathematical statistics.

Mathematical statistics were used to analyse the results of the study, including calculating arithmetic means, percentage distribution and comparing the results of the experimental and control groups. The analysis of the indicators' dynamics was carried out at the ascertaining and control stages of the pedagogical experiment. Statistical processing of the data revealed positive dynamics in the physical fitness indicators of students in the experimental group.

Throughout the study, particular attention was paid to adhering to the pedagogical and ethical principles of the experiment. Participation in the study was voluntary for students and was carried out with the consent of parents (legal guardians) and the educational institution's administration. All diagnostic procedures took into account the age and individual characteristics of the students, as well as safety and health requirements for children during physical education and health activities. The confidentiality of the results obtained and the anonymity of the personal data of the study participants were fully maintained.

Results and Discussion

It was established that the limited material and technical resources available to rural educational institutions significantly complicate the implementation of the physical education curriculum.

In these conditions, traditional outdoor games have several advantages: they do not require complex equipment, they are accessible, and they allow students to engage in physical activity in a variety of settings.

An analysis of student medical records revealed that 40 % of students were in the primary health group and 60 % — in the preparatory group. These data suggest that a significant proportion of students have an

insufficient level of physical fitness and highlight the importance of finding effective ways to increase physical activity.

A study of the factors contributing to hypokinesia in students found that the main reasons for declining physical activity were a lack of interest in PE classes, heavy academic workloads and limited use of traditional outdoor games in education.

Before the educational experiment began, the physical fitness indicators of students in the experimental and control groups were similar. Low levels of physical fitness were detected in 50 % of students in the experimental group and 51 % of students in the control group (Tab. 2).

Alongside the established levels of student physical fitness, the results of educational testing revealed an insufficient development of physical qualities. The most pronounced difficulties were observed in tasks requiring agility, strength, flexibility and endurance. The data obtained suggest that the current volume of physical activity undertaken by students is insufficient for these physical skills to be fully developed in a traditional physical education classroom. This indicates the need to develop additional pedagogical tools aimed at developing students' core physical skills.

The following pedagogical principles were considered when selecting national outdoor games for the study:

- comprehensive development of physical skills;
- variability of physical activity;
- the emotional appeal of game forms;
- appropriateness to the age characteristics of students;
- preservation of the ethnocultural content of the games.

The selected Kazakh national outdoor games (Tab. 1) were introduced as part of one of three weekly physical education lessons for the experimental group. The pedagogical experiment lasted one academic year. The outdoor games were incorporated into various sections of the lesson, depending on the learning objectives. The games aimed to develop students' speed, agility, flexibility, strength and endurance.

Table 1

Kazakh national outdoor games used in the experimental physical education programme for students

Direction of development of physical qualities	National outdoor games
Games primarily aimed at developing speed skills	<i>Qara Bōrik</i> ("Black hat"), <i>Aue Tayaq</i> ("Flying stick"), <i>Zhūzik Alu</i> ("Raise the ring"), <i>Tayaq Oyini</i> ("Playing with a stick"), <i>Qas Kulaq</i> ("A sensitive ear")
Games primarily aimed at developing dexterity and coordination of movements	<i>Tartys</i> ("Tug of war"), <i>Sokyr Teke</i> ("Blind goat"), <i>Tōbetay Tastamaq</i> ("Throwing the hat"), <i>Oramal Tastau</i> "Throwing a handkerchief"), <i>Tau Meniki</i> ("My mountain")
Games primarily aimed at developing flexibility	<i>Aralmen</i> ("Between the islands"), <i>Toqta</i> ("Stop!"), <i>Qara Bōrik</i> ("Black hat")
Games primarily aimed at developing general endurance	<i>Qas Kulaq</i> ("A sensitive ear"), <i>Bōrik Telpek</i> ("Cap"), <i>Atshylar Zharysy</i> ("Horsemen's competition"), <i>Tekeler Urysy</i> ("Goat fight"), <i>Kōgen Tartys</i> ("Tug of war")
Games primarily aimed at developing strength skills	<i>Kindik Sandyk</i> ("Box"), <i>Tōrt Ayaqtap Tartysu</i> ("Tug of war on all fours"), <i>Kisi Kōteru</i> ("Raising a Man"), <i>Audaraspak</i> ("Horsemen's fight")

A comparative analysis of the results from the initial and control stages of the experiment reveals positive trends in the physical fitness indicators of students in the experimental group. The most significant changes were observed in the low physical fitness indicator, which decreased from 50 % to 13 %. Conversely, the proportion of students with moderate (increasing from 31 % to 62 %) and high (increasing from 19 % to 25 %) levels of physical fitness increased (Tab. 2). In the control group, the changes were less pronounced. These results suggest that the use of Kazakh national outdoor games has a positive impact on students' physical activity and fitness. After the completion of the educational experiment, differences between the experimental and control groups tended to be statistically significant ($p \leq 0.05$).

Table 2

Physical fitness indicators of students in the control and experimental groups before and after the educational experiment (%)

Physical fitness level	Experimental group before the experiment	Experimental group after the experiment	Control group before the experiment	Control group after the experiment
High level	19	25	17	18
Intermediate level	31	62	32	38
Low level	50	13	51	44

The results obtained suggest that the positive changes are due to the combined effects of traditional outdoor games, which are characterised by high levels of physical activity and emotional engagement, as well as being competitive. Furthermore, the game-based nature of the lessons fostered favourable conditions for enhancing students' motivation to participate in regular physical education.

During pedagogical observations, it was found that students in the experimental group demonstrated higher levels of activity, initiative and interest in completing physical exercises. Participation in traditional games contributed to the development of teamwork, responsibility, and mutual support skills.

An additional parent survey revealed increased student interest in physical education classes and sports clubs. Many parents noted that their children were becoming more proactive in organising outdoor games outside school hours.

The findings obtained during the study suggest that traditional Kazakh games may be regarded as an effective component of physical education in rural schools. When these games were introduced into physical education lessons, pupils became more actively involved in movement-based activities and showed greater interest in regular exercise. In addition, participation in traditional games helped pupils interact more actively with one another during lessons.

The practical value of such games becomes especially evident in rural schools, where the organisation of physical education is often complicated by limited material and technical resources. For many rural schools, this approach may be more useful because traditional outdoor games can serve as a practical and accessible way of organising active lessons. The accessibility, emotional appeal and cultural significance of these games make them an effective tool for modernising the physical education system.

Conclusions

The results of the study confirm that integrating Kazakh national outdoor games into the physical education curriculum in rural schools is effective. The systematic use of national games was found to contribute to increased levels of physical activity and improved physical fitness, as well as developing sustainable motivation for physical education.

The pedagogical experiment revealed positive developments in students' key physical qualities, such as speed, agility, strength, flexibility and endurance. The significant decrease in the proportion of students with low levels of physical fitness demonstrates the pedagogical effectiveness of the approach.

These results suggest that Kazakh national outdoor games could be an important component of modern physical education, offering health and educational benefits. Using them promotes the development of teamwork and communication skills, as well as respect for cultural traditions and the formation of students' ethnocultural identity.

The practical significance of the study lies in the potential application of the developed set of national outdoor games in rural schools' educational activities, during both in-class and extracurricular physical education programmes. Therefore, integrating Kazakh national outdoor games into physical education can effectively increase student physical activity and improve the educational process in rural schools.

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