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NATIONAL GAMES AND METHODS OF INTELLECTUAL
DEVELOPMENT IN EDUCATION: ETHNOCULTURAL ASPECT

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Abstract

The revival of intellectual national games, the popularization and realization of their didactic potential, and the dissemination of original teaching methods recognized by the pedagogical community, aimed at developing mental activity in the learning process, can enrich the education system. In the context of growing globalization and the mutual influence of educational systems, the reverse process is also taking place, the preservation of the unique, original, and reflected in the culture of the people, the preservation of the cultural values of the people for solving modern problems of upbringing and education. The task of preserving cultural traditions and ethnocultural diversity is facilitated by the holding in the Russian Federation this year of the Year of the Cultural Heritage of the Peoples of Russia. National intellectual games in the modern multicultural educational space are a resource for the mental development of schoolchildren in various forms of additional education. The article gives a brief overview of intellectual games in the history of the Kalmyk people, reveals the potential of using national intellectual games in educational institutions of an ethnocultural orientation, as well as an analysis the most famous puzzles aimed at developing logical thinking in children, speed, and accuracy of mental operations. The variety of approaches to the development of training and education in regional educational institutions, and the mutual enrichment of the education system make the national system of the country more stable, open, and adaptable in a changing world.

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1. Introduction

The problem of the development of human intellectual skills throughout the history of society has always been significant. In the past of peoples, these skills were pragmatic, determined by several factors, such as lifestyle, a form of economic subsistence, and the preparation of the younger generation for life. The development of intelligence, logic, and creative abilities in the history of the culture of peoples was carried out, among other things, in a playful way, fixed in national games, proverbs, and sayings. In the history of peoples, with the help of games, the skills necessary for survival were developed: dexterity, efficiency, and rationality in finding solutions to game situations. In these games, the function of leisure was accompanied by competition not in the physical strength and endurance of the player, but in the ability to solve complex logical problems and puzzles. In the content and methods of education of innovative schools and national schools, when developing general education programs, programs for the creative development of children, teachers need to take into account not only the achievements of modern pedagogical and psychological science but also national and regional specifics when organizing the learning process and national cultural activities.

The game as a phenomenon of human life is studied by various scientific areas, such as philosophy, psychology, cultural studies, and pedagogy. According to the philosophical ideas of Huizinga (2001), the game principle is ontologically inherent in a person. In the study of the psychology of the game, the most important provisions are outlined in the works of Huizinga and Rubinshtein. Pedagogy as a science of education and training has its origins in public education. According to the founder of ethnopedagogy Volkov (1999), the total culture of many millennia, generations, races, nationalities, ethnic groups, classes, and estates is important for humanity. Each social group and each nationality enriches the culture of mankind.

2. Problem Statement

The development of intellectual skills in children must begin from an early age, involving this game forms of activity at all levels, including the leisure of children and adults. In solving this problem, Kalmyk national games, puzzles that require ingenuity, the flexibility of thinking, and heuristics are being revived in the republic.

The great heritage of the Kalmyk people, national puzzles, has been lost. It is necessary to conduct a study on the restoration of puzzles forgotten among the people, the popularization of Kalmyk puzzles among young people, and in the tourism sector. In the modern multicultural educational space, the ethnocultural component of the formation of intellectual skills has not been sufficiently studied, and the educational resource of national games in education and training is not used. The displacement of national intellectual games in the context of the spread of gamification in the youth environment can be disastrous not only for education but also for culture as a whole.

To solve the problem, it was important to answer the following questions: What is common between the game and learning, what components of game situations are transferable to education, and what teaching methods aimed at the formation of cognitive activity have become widespread in the region.

In education, it is important to use learning methods, including games, to purposefully develop mobility and flexibility of thinking in children. Among such methods of intellectual development in teaching mathematics and natural sciences, the method of transforming tasks, solving direct and inverse actions, and entering a system of interrelated tasks becomes relevant. These techniques are central to the enlargement technology of didactic units developed by Erdniev. The commonality of game situations and techniques of this technology allows considering the problem posed from different angles, which makes learning interactive and requires reasoning and justification. Thus, when setting a didactic task, the game becomes meaningful and can become a means of developing intellectual skills.

At the level of primary and secondary schools, teachers of the republic apply the methods of technology for the enlargement of didactic units, originally developed for teaching mathematics in primary grades by Erdniev. The commonality of logical operations, the focus on performing direct and inverse actions, direct and inverse tasks, and the transformation of tasks made it possible to adapt the enlargement of didactic units in teaching other academic subjects at school, as well as to transfer individual methods of enlargement of didactic units in teaching students the disciplines of the natural and mathematical cycle (Vasileva et al., 2019). The national intellectual games can become an important means of education and upbringing, a resource for preparing students for solving complex and non-standard tasks.

3. Research Questions

In the concept of global education, the emphasis is on universality, on the underestimation of the ethnic factor in education, as if dissolving in the universal, in the supranational. In the current socio-cultural situation in Russia, processes of alienation of a person from their cultural and historical heritage (especially among young people) are outlined (Afanas'eva, 2008). The problem of developing the intellectual skills of the younger generation in the history of the development of peoples manifested itself in national games that require ingenuity, dexterity, speed of decision, and practical expediency. In the modern educational process, the ways of developing intellectual skills are implemented through developing learning technologies.

Intellectual games have always been associated with lifestyle and life support. The nomadic way of life of the Kalmyks, animal husbandry, and seasonal leisure activities determined the types of play activities, the subject of which was the choice of the most rational way to solve a practical problem. To tie the horses, the “Kalmyk” loop was used, which, along with the “marine” knot, has firmly entered the everyday life of people associated with a certain type of activity. The history of the nomadic Kalmyk people, as well as other peoples of the world, was characterized by minimalism in the choice of means, limited household items, and game features. Omakaeva (2003) notes the types of board games such as chess (shatr). Chess terminology testifies to the nomadic life of the Kalmyks: a rook is a cart (tergn), an officer is a camel (temen), etc. Kalmyk chess has its own game rules, for example, there is no castling, and the khan (king) always occupies a white square. Another type of game is the puzzles games, among which the game nern shinj (“twelve horn rings”) is popular. An example of a game situation: on the plate, there are sequentially fixed horn rings connected. It is necessary to free all rings from the die in a short time.

It has long been a tradition among the Kalmyks to hold games-competitions with lamb bones. The folk game has not lost its significance and at present, only the rules and means of gaming activity are changing. Folk games aimed at physical development and endurance are diverse. The article deals with intellectual games that develop such qualities as endurance, the ability to concentrate at the right moment, navigate in any situation and quickly make the right decision. National intellectual games contributed to the development of intuition and logic of thinking. In the culture of many nations, sayings reveal certain qualities of the mind, reflecting its sharpness, and speed of thinking. These qualities are expressed in the concept of “kersyu”, which is translated from Kalmyk as “sharp mind”. The variety of ways of thinking development is influenced by social factors, such as the lifestyle and life experience of the nomadic people, reflecting the importance of practical skills.

Since ancient times, intellectual games and riddles, puzzles, and jigsaw puzzles have been widespread in the Kalmyk environment. It is necessary to consider the influence of the most popular Kalmyk puzzles and intellectual games on the education and culture of the people, as well as the historical aspect of their formation. And the first among them is the “Mongolian” puzzle, a widely known national puzzle in the world (Zakharov, 2021). This game develops imagination, creative thinking, and fantasy, so it is designed for children of preschool and primary school age. Its application is the same as that of the famous tangrams. The puzzle is a square divided into eleven geometric shapes, from which various shapes are assembled. The most important condition of the puzzle is that all parts of the puzzle participate in the construction of any figure; because of this condition, imagination develops in children. The children's passion for assembling the puzzle was manifested in speed and the ability to create various complex figures that were not in the instructions.

The next puzzle, translated from Kalmyk (“bøghz niilulkh”), is called “connect the rings”. This is a classic rope puzzle that is common to many nomadic peoples, both in Asia and Africa. Its essence is that two shagai (among nomadic peoples, sheep vertebrae were used for their manufacture) were in the same loop. This puzzle develops spatial thinking, and creativity, and talks about the nature of the “knots” and their application in life. The Kalmyks attached special importance to games that helped improve the ability to tie and untie a knot. These kinds of puzzles have evolved from people's knowledge of ropes, knots, and how to tie cattle as securely as possible. Therefore, rope puzzles mainly prevail among the nomadic peoples of the world: Similar problems and puzzles are found among the peoples of the Great Steppe and are also common in Africa.

The pride of the Kalmyk intellectual thought is the “subtle consideration” puzzle (“narn shinzh”). The task of this puzzle is to free the plate from the rings. An easy game situation becomes a difficult practical task. The “narn shinzh” is multifaceted, there are several varieties of this puzzle, two types of the game are popular among Kalmyks: for adults with twelve rings and with eight rings for children. The puzzle teaches patience, which needs to be formed in children, and perseverance in achieving their goals (Zakharov, 2021).

The game as such is always emotionally saturated, in the game a person tests and trains his abilities. According to researchers, the game exists as a state, structure, and mechanism (Yakovleva, 2010). Game activity is always associated with competitiveness, emotionality, and variability, it helps to develop fantasy, imagination, intelligence, and spatial thinking.

Based on the development of intellectual skills of schoolchildren in the educational process, the technology of enlargement of didactic units uses hidden reserves of thinking, which significantly increase the effectiveness of the learning process. The development of mental operations in learning is achieved through the targeted application of the following techniques of this technology: solving direct and inverse problems, simultaneously studying opposite concepts (addition and subtraction, multiplication and division, differentiation and integration in mathematics, compound and decomposition reactions, oxidation, reduction in chemistry). In the process of applying the technology, conditions are created for the manifestation of fundamental patterns of thinking: the principle of feedback, systemic and cyclical processes, and reversibility of operations. The technology of enlargement of didactic units is also based on considering the psychological and physiological grounds for the circulation of information in the phase of working memory and the asymmetry of the functions of the cerebral hemispheres in mental activity.

4. Purpose of the Study

The article aims to revive the Kalmyk national games in the region, explore them for popularization, hold puzzle competitions, and create an independent league for solving puzzles. The task was set to develop a manual on the essence, types of national puzzles, functions, purpose, and application for different age groups of children, for teachers and parents. National intellectual games can be used in ethnocultural gymnasiums and lyceums to study the culture of the Kalmyk people and become a tourist attraction for the region. Another goal was to create an exhibition of national puzzles to develop the logical thinking of children, contributing to the revival of the national heritage of their ancestors, popularizing and promoting them in modern education and upbringing. A promising task is to systematize and generalize the pedagogical experience of teachers and researchers in the region to disseminate the technology of enlarging didactic units.

5. Research Methods

In the study of intellectual games, the culturological approach that considers educational, upbringing, and cultural phenomena as a way of socio-cultural activity was used. The historical and comparative approach was applied to analyze the phenomenon of intellectual national games from the standpoint of the history of the past people, lifestyle, and dominant activities. The subsequent introduction of intellectual games into the educational process in the system of additional education in the study of the culture of the peoples is important for the educational and upbringing tasks of educational institutions of an ethnocultural orientation.

The intellectual development of a person depends on the ability to assimilate information and use it effectively. This is the education task. In the psychophysiological mechanisms of human development, scientists in the field of cognitive psychology study the mechanisms of thinking. The study of the mechanisms of mental processes is based on the difference in types of thinking according to the predominance of the development of the right or left hemisphere (Sperry, 1968). Science has revealed that people with a left-brained type of thinking are more active in logically solving a problem, as in in-game situations, including in intellectual games. Right brain thinking is responsible for an intuitive, sensory

approach to problem-solving. In substantiating the psychological foundations of the technology for enlarging didactic units, taking into account the asymmetry of the functions of the cerebral hemispheres in mental activity, the author of the technology concluded that the element of complementarity is important in solving the problems of teaching mathematics, which consists, in particular, in the “geometrization” of mathematical knowledge (Erdniev & Erdniev, 1986).

Mind games are studied by heuristics, the science of qualitative thought processes. Heuristics (translated from Greek “I discover”) is the science of the patterns of constructing new actions in a new situation, that is, the organization of productive thinking, based on which the process of generating ideas (hypotheses) is intensified and their plausibility (probability) is consistently increased (probability and certainty) (Huizinga, 2001).

6. Findings

To achieve the goal of reviving intellectual Kalmyk games, an independent puzzle league was established to popularize and hold competitions in national puzzles. Zakharov developed the project “Puzzles are a national treasure”, recognized in September 2017 as the winner of the All-Russian competition of youth projects. Within the framework of the project, three large national puzzles have been created, four tournaments among schoolchildren, and a tournament among students have been held. Starting in 2018, tournaments among schoolchildren of the republic have become regular. Participants and teams of fans showed their readiness to improve their results and revealed their skills in quickly solving game situations, ingenuity, and resourcefulness. The latest tournaments were attended by representatives of the media and business, which contributed to the popularization of folk games. The communication of the participants of tournaments in Kalmyk mind games in social networks was noted.

Among the souvenirs in the region, board games appeared on “narn shinzh”, on puzzles in the assortment, three art objects of puzzles were made, which became exhibits of the Museum “Unique Kalmykia”.

In the region, teachers widely use the technology of enlargement of didactic units when studying subjects of the natural and mathematical cycle at different levels of education. This technology has gone beyond the region, gained recognition, and entered the encyclopedia of educational technologies. Every year in the republic Olympiads in mathematics are held to enlarge didactic units.

7. Conclusion

Summing up the results, it can be concluded that intellectual national games are the best exercises for developing mental activity and creative and spatial thinking.

The use of the idea of ethnocultural education means the creation of such a system of education and upbringing, which is based on the idea of cultural pluralism, combines the guidelines for the development of the world educational system and the use of resources of ethnocultural upbringing and education (Absalyamov, 2004).

Participation in intellectual games, competitions, and olympiads develops the speed and accuracy of mental operations, stability of attention, and realizes hidden reserves of mental activity.

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