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The Potential of Folk Tabletop Games in the Development of the Intelligence and Creativity of Children

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Abstract

The modern education is dominantly targeted at the left hemisphere. It draws insufficient attention to the harmonization of the functioning of both brain hemispheres. This has a negative impact on the development of the abilities of children and is especially detrimental to boys and those children who are brought up in the natural environment. In this regard, one of the solutions is folk tabletop games, but their potential in the development of the intelligence and creativity of children has been insufficiently explored. The goal of the research is to identify and substantiate the potential of the Sakha's tabletop games for the development of the intellectual and creative abilities of children aged 5-7 years. The scientific novelty of the research consists in the fact that the problem under study enriches the theoretical and methodological bases of using tabletop games in the intellectual development of children in preschool education. The study was carried out longitudinally. The following was studied: the influence of games on the development of intellectual, creative, and insight abilities of children aged 5-7 years, as well as their interconditionality. The obtained results are discussed from the point of view of their correspondence with both the data available in science and the hypothesis of the study. The discussion emphasizes that the tabletop games of the Sakha are the most meaningfully represented in the study as the functional space for the development of intellectual and creative abilities of children. In the conclusion, it is emphasized that folk tabletop games are the means for qualitative enrichment of all the basic factors of intelligence in operations, contents, and final products of thinking. The study has proven the idea of treating tabletop games as a substantial source of development of the harmonious activity of both brain hemispheres.

Keywords: *Tabletop games, Preschool child, Development, Intelligence, Creativity, Insight ability, Harmony, Two cerebral hemispheres.*

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Introduction

In the Sakha's philosophical Doctrine of Aiyy ("Aiyy" comes from the word to create), it is emphasized that a person must achieve wisdom not only through the rational and logical approach, but also through the intuitive, irrationally eidetic way. Various research proves this statement and emphasizes that any creativity is based on intuition and insight (Tarman & Tarman, 2011). In this respect, there are some contradictions in the intellectual development of children:

– Ignoring the mental living principles has a negative impact on the intellectual development of the personality. It is necessary to take into account the peculiarities of the national psychology, natural and climatic conditions that determine the personality development.

– For a child who has not yet lost his connection with nature, the right hemisphere is stimulated naturally. Ensuring the harmonious activity of both cerebral hemispheres stimulates the thoughtful mental activity.

– The figurativeness of the mother's speech requires the active processing of information and assimilation of the conceptual side of the speech in the right hemisphere of the brain. The Yakut speech is known for its figurativeness. Children raised in the conditions of the priority of figurativeness of thinking encounter considerable problems in "left-hemisphere-based" education.

– The insight as the basis of creativity and talent certainly develops based on intuition. However, the value of intuitive cognition, which "limits" the intellectual and creative uniqueness of the person, is still underestimated.

These really existing factors in science and education virtually have not been approached yet.

Of particular importance in the research are the publications that study the intelligence in terms of thinking and creativity, including that of children aged 5–8 years: Piaget (1996), Gilford (1967; 2003), Gardner (2006), Sternberg (2012), Vygotsky (2010), Rubinshtein (2009), Leontiev (2012), Elkonin (1999), Kholodnaya (2002), Berulava (2009), Zack (1996), Veraksa (2003), Korchitsky (2011), Mikhaleva and Stozharova (2013) Houdyshellm, (2017), Yurtseven & Altun, (2015) and others. In the above publications, the intellectual development is disclosed through different approaches and aspects: sociocultural, educational, genetic, process-activity,

information-based, etc. In this respect, we have the opportunity to compare our ideas and experience with the authors of fundamental research.

Tabletop games of the Sakha, as sources of intellectual development of children, are considered in the studies of Barakhsanova (1995) and Golikov (1997). Concerning the purpose of our study, Barakhsanova (1995) found that the Yakuts' intellectual tabletop games develop the flexibility of thinking. The author paid special attention to the study of the child's assessment of the position as the main type of the intellectual activity of children. The studies of Golikov (1997) substantiate the pedagogical conditions for the use of dynamic games of pursuit as the means of developing the mathematical thinking in preschool and primary school age children. He believes that "dynamic games of pursuit built on the well-known and native to children folklore and ethnographic material have a significant potential... and the system of solving the problems of pursuit games based on maneuvering the moves of the fleeing and the pursuing players with the correct methodological instrumentation develops spatial imagination, logical reasoning, flexibility, depth, and rationality of thinking, as well as the counting skills".

Nevertheless, we believe that the potential of the Sakha's tabletop games: Khabylyk, Khayamyska, Tyryynkay, Bagda, Baaya, Dyugdyuur, Tyxaan, in the development of the children's intelligence is not sufficiently studied.

Therefore, the goal of the research is to identify and substantiate the potential of the Sakha's tabletop games for the development of the intellectual and creative abilities of children of the senior preschool age.

At the same time, we assume that the potential of folk tabletop games (based on the Sakha's materials) in the development of the intellectual abilities of children aged 5-7 will improve qualitatively in the following case:

– The thinking activity involves the development of a variety of options of assumptions, prediction of their results, and achievement of the arbitrariness of intellectual skills.

– Games encourage children to switch from the end result of the activity to the ways of achieving it and to apply their skills to new situations.

– The game process stimulates the transition of the external orientation of mental efforts to the internal one.

– Games provide for the flexibility of combining intellectual skills with the development of insight abilities and intuition of judgment.

The scientific novelty and theoretical significance of the research consist in revealing the potential of folk tabletop games in the development of intellectual abilities combined with the creativity in children aged 5-7 years, which enriches the theoretical and methodical bases of desktop intellectual games' application in preschool education.

Research methods

Research methods: theoretical, empirical methods, methods of processing the obtained data (mathematical, statistical). The theoretical methods include: the study and analysis of psychological, pedagogical, and ethnographic literature; description and classification of folk tabletop games of the Sakha; empirical methods and methods of processing the obtained data include: the study of the experience of nursery teachers in kindergartens; pedagogical experiments with subsequent statistical processing of its results; mathematical modeling, statistics, questionnaires, interviews, and conversations. The study was carried out longitudinally with children aged 5-7 years in seven basic kindergartens of the Republic of Sakha (Yakutia).

Research results

The obtained results are discussed from the point of view of their correspondence with both the data available in science and the hypothesis of the study, which allows us to draw the following conclusions:

In games, we purposefully focused children on the theoretical reasoning development: planning, predicting, memorizing, reasoning and identifying relationships and elementary regularities. Results: the children's visual and figurative thinking have been qualitatively developed. The performance of gaming operations actively stimulates the process of transition from the externally oriented mental activity to the internal one. Children began to identify independently common ties, relationships, derive elementary intellectual patterns in the games. Thanks to the theoretical reasoning, children became able to classify objects on a conceptual basis.

Folk tabletop games stimulate the development of creative and intellectual abilities. Berulava (2009) believes that in assessing the mental abilities of children, two aspects must be taken into account in the zone of proximal development: the learning activity and the creative independence of the child. Their interdependence is observed in games. Games that do not require flexibility and originality of judgments simply will not be exciting and interesting. Therefore, in the exciting versions of tabletop games, the child always develops his own game

strategy and tactics. For example, in Tyxaan (shooting chips), the child must first determine, which chips are interfering and must be removed in order to facilitate further shooting. In this case, the child is not limited to performing a single intellectual task. Consideration of several options of positions for convenient shooting requires the performance of a variety of intellectual operations. Several options of the precise destruction of chips from a variety of positions are considered: the location of the chips, convenience of the shooting methods with the estimation of various parameters of the chips' arrangement, convenience of aiming (visual estimation), assessment of personal abilities in terms of the fingers' involvement and their strike power relatively to the remoteness or proximity of the spatial arrangement of the chips, possibilities of turning the body and hands, etc. The game engages the process of forecasting, i.e. developing a strategy and testing the tactic options of the game that lead to a victory. As a result of active mental activity, the child generates numerous hypotheses. The desire to test them increases the motivation for creativity. And the growth of creativity in children generates gushing associations. Consequently, the child satisfies his cognitive need with not only the result, but also the solution of numerous intellectual problems, search for and discovery of a variety of options for solving the game problems.

Tabletop games require the correlation of the variety of intellectual operations that are responsible for specific types of abilities. At the same time, each specific intellectual ability can manifest itself separately, but in the course of the game, certain abilities are necessarily correlated. For example, in Tyxaan, as a result of intellectual operations, the child develops the ability to operate spatial relationships in his mind, memorize, reproduce, identify the correlation of the supposed results with the realistic results, operate arithmetic actions, reason, and identify regularities. As is seen, numerous intellectual operations are performed during the game, which give rise to a variety of options for solving difficult problems, heuristic discoveries, which qualitatively enrich the intellectual abilities of children.

In any desktop intellectual game, there are manifestations of convergent and divergent thinking. The necessity of these two types of mental operations proves the interdependence of the intelligence and creativity in games, although, as orthogonal factors, they manifest themselves independently of each other. In the game, the child is looking for the only correct solution among the suggested ones, i.e. demonstrates the convergence of mental operations. At the same time, the child makes the choice, generating as many possible solutions as possible.

This indicates the divergence of mental operations. As a result of the diversity of the content, ways of solving intellectual problems, intellectual products of various levels are obtained.

In folk tabletop games, two of the most popular kinds of activities among children are combined: the game and the experiment. The timely and fullest use of these children's activities ensures the amplification of the intellectual and creative development of the personality. In the process of popular intellectual tabletop games, it is necessary to pay attention to the intentionality of the cognitive enrichment of the content, materials, and teaching methods. It is necessary to constantly stimulate the children's perseverance and transfer of intellectual skills to other games and situations. It is necessary to know that it is the emotional and value-related motivation and favorable communicative and social interaction that directly influence the intensity of the children's creativity development (flexibility, originality, out-of-the-box thinking, etc.) in games.

It was observed that in games other than the externally oriented initiation, children experience a substantive internal initiation of the intellectual activity. Tabletop games allow the child to act in accordance with his inner motives, demonstrate rich internal initiation of the intellectual activity. These qualitative changes bring the child to the level of subjectivity and improve his readiness for the learning activity.

Discussion

Games of each ethnic group are endowed with special cultural meanings and developmental functions. According to Sternberg (2012), different cultures support creativity in different ways.

According to the concept of Heyzinga (2011), the game is a cultural and historical universal. In its essence, it is a purely childish activity with inherent characteristics.

In the Yakut folk tabletop games Khabylyk, Khaamyska, Tyryynkay, Bagda, Baaya, Dyugdyuur, Tyxaan, the intellectual activity of children is very high. But it has not virtually been studied. Today, the Khabylyk and Khaamyska tabletop games are treated as sport games and are mainly studied in this regard.

In our study, the pedagogical potential of folk tabletop games was first presented as a functional space for the development of intellectual and creative abilities of children aged 5–7 years.

Heyzinga (2011) believes that “within the game sphere, the rules and customs of everyday life are not valid. We are the essence, and we are doing ‘something else’”. Through the motivation for creativity and manifestations of flexibility, originality, and non-standard judgments in games, high levels of intellectual and insight abilities are achieved. It is traditionally considered that the cognitive activity of children of preschool age should be organized based on the practical operation with objects or their symbols. In our games, virtually all intellectual operations are performed theoretically. Games encourage children to actively model intellectual actions and engineer their results, develop intuition and a hunch to achieve the goal.

We agree that each ability certainly develops as a result of performing certain groups of intellectual operations. Observation of the games helped us find out that the various abilities in the games necessarily correlate with each other, causing higher levels of intellectual operations in the future.

In the process of children's games, divergent and convergent types of mental operations can be clearly traced. Such types of mental operations as estimation, memorization, cognition, etc. are also observed in them. It turned out that despite the seeming simplicity, tabletop games of the Sakha abound with interesting facts that had not previously been revealed in relevant studies.

In the thinking activity of children in the process of games, we observed the development of insight abilities, which are fueled by their emotionality (excitement). Games, in particular Tyryynkay, Khaamyska, Bagda, require the identification of a significant goal and problems for further advancement in the game, i.e. selective coding. Such games simply will not take place, if we do not provide selective combining, i.e. unification of unconnected actions in a single whole and their relevant consideration in order to achieve the goal. In games, we also observed a selective comparison, i.e. children linked the solution of new problems with their past experience in the game, including their previous erroneous judgments. Children's games provide for the flexibility of combining intellectual skills with the development of insight abilities and intuition of judgment.

Thus, we believe that with targeted stimulation, children successfully develop insight abilities in games, which, on the other hand, is evidenced by the interdependence of the intelligence and creativity.

Scientific research emphasizes that the interdependence, correlation of intelligence and creativity is a complex process. Of course, it is especially important in the correlation to study the manifestations of the intellectual range and intellectual threshold. Observation of the children's games clearly shows the interdependence of the intellectual and creative abilities of children. Active thinking activity in the game generates intensive creativity. Any tabletop game simultaneously develops the child's ability to detecting and defining the problem, generating, promoting, producing a variety of ideas, solving the defined problem, and obtaining a creative product. Gut (2007) pointed out that "creativity (the process of creativity) is a productive mental activity that yields a non-trivial (qualitatively new, unobvious) result".

The problem should be associated with the intellectual development of the children, depending on their gender-role features. It is known that for boys the right cerebral hemisphere, which is responsible for the figurativeness of mental processes, is typically more active. And as for girls, their left hemisphere dominates, which is responsible for the logical thinking. These specific features of children are not considered in the organization of their cognitive activities. In this case, it is appropriate to say that folk tabletop games are the excellent tools for ensuring the communication between the two hemispheres of the brain. They are especially important for boys in stimulating and developing their mental processes provided by the function of the right hemisphere. In this respect, ethnic games are a lifesaving means that stimulates the harmony of the functioning of the two brain hemispheres.

We believe that the main pedagogical mechanism that triggers the development of the intellectual, creative, and insight abilities of children in games are:

– Accessibility: the rules and content of all the above-mentioned games are comprehensible for preschool children;

– Multifunctionality: communicative, creative, developing, emotiogenic, combinatorial, etc.;

– The multivariance of games, gameplay, and intellectual operations to achieve the goal;

– The presence of excitement, intrigue, and a different level of complexity in achieving the game goal with a variety of ways of its achievement and the range of transformations.

Conclusion

Folk tabletop games, conditioned by the mental traditions of the ethnic group, specifics of national psychology, and natural and climatic features, are one of the most effective personality

development means, including the intellectual development. They are the source of the inquisitive mind of the ethnic group. Their direct purpose is the development of intellectual, creative, volitional, communicative, and other abilities in children.

The results of the research have proven that by means of folk tabletop games, all "basic factors of intelligence in operations, contents, final products of mental activity" are enriched qualitatively (according to Guilford).

The research has confirmed that the game process qualitatively enriches the visually figurative thinking, as well as basic principles of verbally logical, deductive and inductive, convergent and divergent, intuitive and creative thinking. It should be recognized that the introduction of folk games in the education content enables the successfully development of the basic principles of the divergent and convergent, intuitive and insight thinking.

The interdependence of creativity and intellectual abilities was clearly manifested in the games of children aged 5-7 years. The constantly winning children have the intellectual skill of looking at the problem from a new perspective and finding non-standard tactical and strategic solutions to solve the game problems.

The pedagogical idea of the intellectual development of senior preschool children is to teach them to think abstractly. Folk tabletop games without assistance contribute to analyzing the game operations in mind, i.e. theoretically.

A fundamentally new idea in the study of the games' potential is the assertion that folk tabletop games ensure the harmonious development of the two cerebral hemispheres. This is very important in the context of the priority of "left-hemisphere education," particularly for boys.

Our research does not pretend to provide a complete substantiation of the pedagogical potential of folk games in the intellectual and creative development of children. It is the next step on the way to their solution. In the long term, special attention should be paid to identifying the potential of games in the spiritual and moral formation and socialization of the personality, the mathematical development of children, and the development of their specific abilities. It is also necessary to analyze the structure and components of folk games in the context of intellectual development.

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