Խ.ԱԲՈՎՅԱՆԻ ԱՆՎԱՆ ՀԱՅԿԱԿԱՆ ՊԵՏԱԿԱՆ ՄԱՆԿԱՎԱՐԺԱԿԱՆ ՀԱՄԱԼՍԱՐԱՆԻ ԳԻՏԱԿԱՆ ՏԵՂԵԿԱԳԻՐ
УЧЕНЫЕ ЗАПИСКИ АРМЯНСКОГО ГОСУДАРСТВЕННОГО ПЕДАГОГИЧЕСКОГО УНИВЕРСИТЕТА ИМ. Х. АБОВЯНА

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THE PECULIARITIES OF THE THINKING OF PRIMARY SCHOOL PUPILS STUDYING CHESS

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SUMMARY

The relevance of the research is due to the lack of experimental data aimed at studying the level of explicit – illustrative thinking of students studying the subject of "Chess" at school.
The aim of the research is to find out the level of explicit – illustrative thinking of primary school students.
The results of the survey: Summing up the analysis of the results of the methods used during the experiment, we conclude that Chess as a subject has a positive effect on the development of students' logical thinking, on the development of the stability of attention, which contributes to the effectiveness of mental activity, in particular the ability to analyze and compare, as well as spatial orientation.
Key words: Chess subject, elementary school, explicit – illustrative thinking.

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Introduction. The initial period of school life covers the period from 6-7 years old to 10-11 years old. The socio-psychological boundaries are not the same in this age group. They may change depending on when the school starts and the child's school preparation period. Various mental qualities of a person are formed and developed in primary school age. Therefore, in the context of modern educational reforms, psychologists have focused their attention on the issue of intellectual development and the problem of studying age opportunities [2].

The educational activity is leading in the primary school age, because it forms the main relations of the child with the society, and in the field of that activity the formation of the main personal qualities of the school-age child, as well as the separate mental processes are carried out. Attitudes towards oneself, the world, society, and other people are formed through the elementary school educational activities. These relationships are primarily shaped by attitudes toward teaching content, methods, teacher, classroom, and school [7].

The thinking of a primary school learner in the first stage is in many ways similar to the thinking of a preschooler, it is obvious-practical. Children rely on real objects or substitute images when thinking. Considering this feature, elementary classes give a lot of importance to observational teaching, which is mainly built on the basis of ideas. However, the nature of the thinking of the students transferred to the 3rd grade changes to some extent. Gradually, primary schools learners master the concepts that are formed on the basis of individual features, previously accumulated ideas, perform mental analysis, comparisons, and generalizations [2].

Since 2011 Chess has been taught as a compulsory subject in the 2nd-4th grades of the secondary school of the Republic of Armenia. Naturally, this educational innovation immediately attracts the scientific attention of researchers to find out what is the role of this subject in the field of general education. Experimental studies in various psychological fields have been conducted in Armenian schools since the beginning of the teaching of chess and continue to this day. We are more interested in the results of research conducted to identify the development that takes place in the thinking processes of primary schoolchildren during the teaching and mastery of chess.

Thus, in 2012, in one of the schools of Yerevan, Chess was taught for 2 months on an experimental basis as a subject in the 2nd and 3rd grades, and then the students' logical thinking was studied through experimental research. The analysis of the results shows that the current level of a number of components of the logical thinking of primary school students who have studied chess, such as awareness, similarity, repetition of numbers, is higher compared to their peers who have not studied chess as a subject [5].

The results of the research conducted with the students in the fourth grades of schools No. 7 and No. 1 in Stepanakert, the capital of the Artsakh Republic, for the purpose of comparative analysis are also interesting. Having only one classroom in that region, where, unlike all other schools, Chess was not taught as a subject, the "Raven Progressive Matrices" methodology was used. It was found that according to the principles of progressive change in the similarity between pairs of figures, 4th graders passing chess were better able to demonstrate the ability to find symmetry, quick observation, constant change in their decision, and later developed their logical thinking [8].

Another group of researchers finds that in chess lessons and games, convergent and divergent thinking types are manifested in combined forms, which determine the role of chess in primary school as an intellectual game. It is possible that depending on the situation, thinking will transition from divergent to convergent and vice versa, which are included, are typical, go beyond stereotypical thinking. Depending on the situation, it is possible that thinking will move from divergent to convergent and vice versa, which are included, typical and go beyond stereotyped thinking [1].

The structure and methods of the research: In 2018, a group of psychologists from the Chess Research Institute organized and conducted a diagnostic experiment. The target group of the study was the group of pupils studying Chess in primary school, in particular, 2nd and 3rd graders. The research was conducted among 30 students with high, medium and low

academic achievement of the basic school of the Kh. Abovyan Armenian State Pedagogical University.

The purpose of the diagnostic experiment was to record and analyze the level of explicit – illustrative thinking of the pupils, to reveal the existence of visual ideas during the solution of cognitive problems.

The stages and methods of experimental research.

The research was conducted in two stages.

1 . Selection of appropriate methods from the "Egoscope" complex of objective psychological analyzes and testing, experimental application to reveal the cognitive style of learners [6]:

2. Analysis of research results.

In accordance with the purpose of the research, the children's version of the "Raven Progressive Matrices" method was selected from the "Exoscope" complex of objective psychological analyzes և testing complex [6]:

The Raven Progressive Matrices are a non-verbal test of intellect and are based on gestalt psychology, “Perception of Form” [4], and Ch. Spearman's “Theory of Neogenesis”[**3**]: The test was proposed by L. Pentoluz and J. Raven in 1936. It was developed in the English school in accordance with the traditions of intellect research, according to which the best way is to discover the relationship between abstract images. By developing tests that would be a useful tool for identifying hereditary and environmental conditions for the development of intellect, Raven has consciously set himself the task of creating tests that will be both theoretically grounded, straightforward, easy to conduct, and applicable at laboratory, home and school.

The two most popular are the black and white and colorful matrices. The color version is designed for children aged 6-9. It is sometimes permissible to use it for rehabilitation purposes with persons over 65 years of age. The colorful version consists of 3 series: A, AB, B, each with 12 matrices.

- In series A, the subject must fill in the missing part of the image. During the work with the matrix of this series, the following main speculative processes are carried out:
  - ✔ Distinguishment of the main elements of the structure and identification of the connections between them
  - ✔ Identification of the missing part of the structure and comparison with the presented examples.
- The process of performing the tasks of the AB series is the analysis of the main and missing figures in the picture (analytical-comparative thinking activity).
- When working with series B matrices, the experimenter looks for similarities between two pairs of figures. He discovers this principle through the gradual discovery of its components.

According to the theory of form perception, each task can be considered as a certain set of interconnected elements. It assumes that the matrix is initially a global evaluation of the task, followed by an analytical perception by revealing the principle underlying the development of the series by the subject. In the final stage, the separated elements are combined into a complete image, which helps to find the missing part of the image.

In the Raven Progressive Matrices test, the test subjects solved the specially complex specific problems that were gradually becoming more complicated through the "Egoscope" objective psychological analysis and testing complex. The primary school learners were asked to find the order of the particles in the matrix and mark one of the pictures below the screen. Studying the structure of the large matrix, the child had to choose the part that best corresponded to the logic of horizontal and vertical alignment of the picture.

The instruction given to the subjects particularly mentioned: "We are starting the game. We need an electronic pen for the game. One of the pictures is missing. On the left you will see 6-8 numbered images, one of which you have to place in the open part, indicating the image number on the right side of the screen".

Figure 1. Experimental research with Egoscope complex

The "Ego Scope" complex has made it possible to mechanically calculate the number of correctly solved matrices and present the correct answers according to them, expressed in percentages (%). Below is the conclusion of the scientific-experimental research, with the example of one subject with average progress in the 2nd grade of school N 57 in Yerevan.

Intermediate level of intelligence was registered- test scores are 14 and the number of correct answers is 58 out of 100. The percentage was 50% in A Series and 67% in AB series.

The quantitative results obtained after the end of the experiment are presented in the form of a diagram, which shows the average values of the correct answers of the students in the 2nd and 3rd grades, expressed in percentages (%).

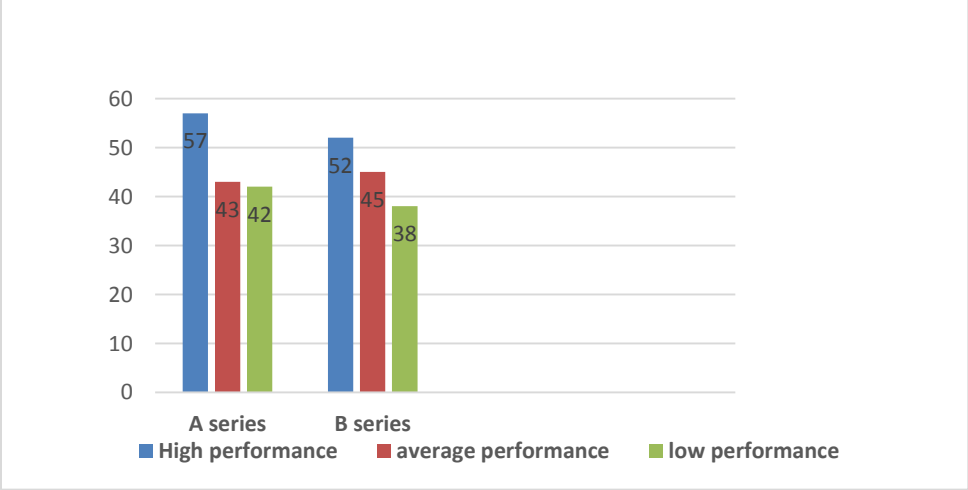


Diagram 1. "Raven Progressive Matrices" methodology results analysis, 2nd grade

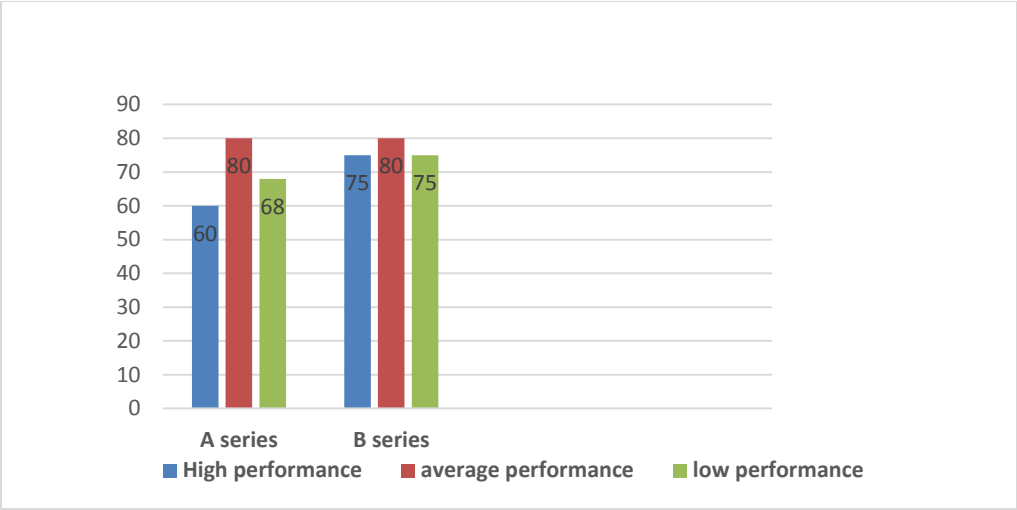
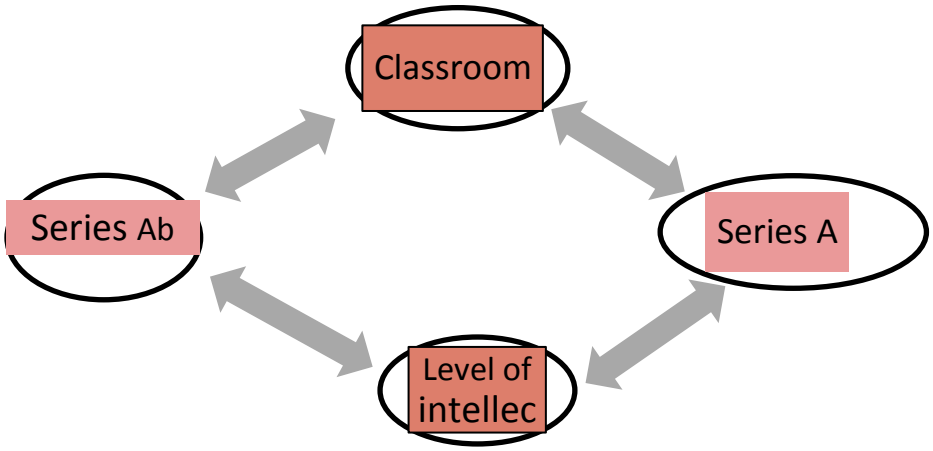


Diagram 2. "Raven Progressive Matrices" methodology results analysis, 3rd grade

Quantitative analysis of the results of the "Raven Progressive Matrices" method reveals that in the conditions of teaching and mastering the "Chess" educational subject, in comparison with the 2nd, in the 3rd grade, regardless of the academic progress, a positive movement of indicators was observed. the number of correct answers has increased, the number of wrong answers has decreased. The results of the experimental studies were subjected to correlation analysis.

Figure 1. External correlation manifest



The analysis of the results shows that there is a high correlation / above 0.7 / between the level of intellect of the learners and the combination of images, the ability to analyze, as well as the indicators of spatial orientation. There is also a high correlation between 2nd and 3rd graders and their level of intelligence. We conclude that Chess as a subject enables the learner to develop logical thinking and stability of attention creates conditions to discover new aspects and connections of the observed object, which as a precondition affects the implementation of effective mental activity.

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ԱՄՓՈՓՈՒՄ

ՇԱԽՄԱՏ ՈՒՍՈՒՄՆԱՍԻՐՈՂ ԿՐՏՍԵՐ ԴՊՐՈՑԱԿԱՆՆԵՐԻ ՄՏԱԾՈՂՈՒԹՅԱՆ ԱՌԱՆՁՆԱՀԱՏԿՈՒԹՅՈՒՆՆԵՐԸ

ԽԱՉԱՏՐՅԱՆ Ա., ՍԱՐԳՍՅԱՆ Ա., ԳԵՎՈՐԳՅԱՆ Ն.

Հետազոտության արդիականությունը պայմանավորված է դպրոցում «Շախմատ» առարկան ուսումնասիրող սովորողների ակնառու-պատկերային մտածողության մակարդակի ուսումնասիրմանն ուղղված փորձարարական տվյալների սակավությամբ: Հետազոտության նպատակն է՝ բացահայտել կրտսեր դպրոցականների ակնառու- պատկերային մտածողության մակարդակը: Հետազոտության արդյունքները: Ամփոփելով գիտափորձի ընթացքում կիրառված մեթոդիկաների արդյունքների վերլուծությունը՝ եզրակացնում ենք, որ Շախմատը որպես ուսումնական առարկա դրական ազդեցություն է ունենում սովորողների տրամաբանական մտածողության, ուշադրության կայունության զարգացման վրա, ինչն էլ նպաստում է մտավոր գործունեության արդյունավետությանը, մասնավորապես վերլուծելու, համադրելու կարողությանն ու տարածական կողմնորոշմանը:

Հիմնաբառեր՝ Շախմատ ուսումնական առարկա, կրտսեր դպրոցական, ակնառու-պատկերավոր մտածողություն:

РЕЗЮМЕ

ОСОБЕННОСТИ МЫШЛЕНИЯ УЧАЩИХСЯ НАЧАЛЬНОЙ ШКОЛЫ, ИЗУЧАЮЩИЕ ШАХМАТЫ

ХАЧАТРЯН А., САРГСЯН А., ГЕВОРГЯН Н.

Актуальность исследования обусловлена отсутствием экспериментальных данных, направленных на изучение уровня образного мышления учащихся, изучающих предмет «Шахматы» в школе.

Цель исследования - выяснить уровень эксплицитно-иллюстративного мышления младших школьников. **Результаты исследования:** Подведение итогов анализа результатов проведенных в эксперименте методов, заключаем, что «Шахматы» как предмет положительно влияет на развитие логического мышления учащихся, на развитие устойчивости внимания, что и способствует эффективности умственной деятельности, в частности способствует формированию умения анализировать, синтезировать и ориентироваться в пространстве.

Ключевые слова:предмет «Шахматы», начальная школа, образное мышление.

Approved for publishing by researcher of CSRI Sona Nersisyan
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