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

## Հումանիտար գիտություններ №-3 (41) 2021 Гуманитарные науки

## SOCIO-PSYCHOLOGICAL ANALYSIS OF THE INFLUENCE OF TEACHERS' AND PARENTS' CHARACTERISTICS ON CHESS KNOWLEDGE

## SARGSYAN T. A., GEVORGYAN S. R., MOVSISYAN N. N., MANUKYAN S. A., SARGSYAN V. Zh., KHACHATRYAN E. A. Armenian State Pedagogical University After Khachatur Abovyan "Chess" Scientific Research Institute

E-mails: sargsyan.tamara@gmail.com, abovyanchess@mail.ru, elyakhachatrian@gmail.com

As teachers and parents have direct responsibility for students' academic achievements, they are considered to be the most important school factors to influence on their educational results. And it's natural to assume that different characteristics of both – teachers and parents may affect on educational outcomes, such as their age, gender, educational grade, experience etc. In this paper we present the social-psychological mechanisms of interconnection of students' school chess achievements and factors that affect them. For the study we have used the data received from teachers and parents during Republican Research of Chess Knowledge Assessment.

**Key words:** Stakeholders, school-based factors, chess achievement, social-psychological characteristics.

#### Submitted to the editor 24.11.2021

#### Rationale for the relevance of the research.

There is no doubt that learners' educational outcomes are influenced by a variety of factors, including family life, community, diet, involvement in various extracurricular activities etc. It goes without saying that teachers and parents are significant actors in this context.

Since teachers are directly responsible for learner's academic achievement, they are the most important school-building factor influencing education. And we can assume that the educational progress can be influenced by the different characteristics of teachers: gender, age, educational level, experience, etc[1].

The problem of the influence of different characteristics of learners' parents on the achievement of learning outcomes is the subject of this educational research. Factors of parental influence on learner's academic achievement are studied from two main perspectives: 1) parents' academic ability, and 2) socio-economic status, which can make a significant difference to pupil's educational opportunities [2, p.88].

Relying on various studies in this area, as well as taking into account the fact that the influence of teachers and parents in Armenian education, especially in primary education, is incomparably greater than other levels of education, also bearing in mind that various challenges are often raised by parents in connection with the teaching of the subject of chess, the collection of research-based and reliable data is important for the continuous improvement of the process of training and retraining of chess teachers. In the framework of this nationwide survey conducted in 2021, we have addressed these issues.

The aim of the research is to reveal the socio-psychological mechanisms of the correlation between chess achievements and the factors influencing them.

**Research hypothesis**. It is assumed that the knowledge of the subject of chess in elementary school is influenced by a number of socio-psychological characteristics of chess teachers and parents of pupil.

**Research questions**. The following questions arise from the purpose of the research:

- 1. What qualities of chess teachers affect chess knowledge and semester grades?
- 2. What is the interaction between the social-psychological characteristics of the pupils' parents and their chess success at school?

**Research methods:** In order to find the impact of many factors on chess education in Armenia, empirical research has been conducted. During the research, the following methods and tools of quantitative and qualitative research have been applied: questionnaire, test, practical research.

Questionnaires were prepared for the beneficiaries - pupils, teachers, parents - which included questions about the child's chess experience, parents' attitude towards the chess subject, the teacher's effectiveness in teaching chess. Psychologists, chess players, teachers took part in compiling the questionnaires, who clarified and discussed each task to get a definite version.

In addition to the above mentioned, a test on the chess knowledge was compiled, the purpose of which was to determine the level of knowledge acquired by pupils during the three years of learning the chess subject.

It is noteworthy that the teachers' questionnaire was addressed to the chess teachers who taught chess to the 4<sup>th</sup> graders of the previous academic year.

The questions mentioned in the questionnaires were formulated in such a way that there was no possibility of double answers, all the questions required a definite answer, which allowed to get a real picture during the results' analysis.

The survey questionnaires were maximally adapted to the pupils so that both the questionnaires for them and the parents' questionnaires were placed in individual brochures, thus facilitating both the pupils' and parents' completion of the questionnaires and the data entry process.

The survey was conducted by random sampling with the participation of all regions of the Republic of Armenia, including the capital Yerevan. There were 42 selected schools.

## Figure 1 Number in schools in regions involved in current research



Number in schools in regions involved in current research

The figure 1 shows the number of regional schools included in the research, moreover, in the 3rd column are presented the additional schools offered by the intern-students of the Faculty of Educational Psychology and Sociology of the Kha. Abovyan Armenian State Pedagogical University. The number of such schools is 10.

Therefore, as a result, about 500 pupils from 50 schools, 500 parents, 50 teachers participated in the republican research.

## Criteria for forming a chess related test

 a) The test includes tasks that contain knowledge from all sections of the content component of the subject: 1. Chessboard, 2. Pieces, 3. Check, mate, and Stalemate, 4. Tactics, 5. Strategy,

6. Endgames

b) The following chess skills and the expected final results of the chess subject were tested in the test: 1. Create mate positions, 2. Create tactical patterns, 3. Assess the situation, compare the facts, emphasize the main from the secondary, make a decision, 4. Create an algorithm, plan the stages, present the order of implementation of the process, 5. Search, find, implement alternative solutions, 6. Predict the opponent's idea, prevent it, 7. Understand the requirement of the problem, seek and find the solution, 8. Recall previously received information, apply knowledge in practice.

The analysis of the test results showed that primary school pupils find it difficult to solve tasks that contain predictive and preventive actions. Predictability and prevention skills in chess shape the study of the following topics:

2nd grade program.

- 1. "Defense".
- 3th grade program.
- 1. "Defense of Mate", 2. "Avoiding the Stalemate", 3. "Pawn finals", 4. Realization of material advantage.

4th grade program.

1. Strategy. Plan, 2. Strategy. Ongoing prevention plan, 3. Final games: Rook against pawn, knight against pawn, Queen against pawn.

In fact, it can be deduced that the ability to predict and prevent is not gradually developed in the elementary school pupil through the subject of chess, the principle of graduality (from simple to complex) is not observed. The topics that shape these skills are not gradually integrated into the various topics, which is a serious omission in terms of content and method.



Chart N1- Paint the pieces so that you get a double attack- "fork"



Chart N3 - Paint the pieces so that you have "checkmate"



Chart N2- Paint the pieces so that there is a "pin"



Chart N4 - The blacks start, take the best steps and register here



Chart N5- The next step is for "White's": Win!

Write the answer here.

1.\_\_\_



#### Chart N7- The turn is "Whites" Circle the correct answer.

Whose position is the best?

- a) The whites'
- b) The blacks'
- c) Both positions are equal



## Chart N-6- Circle the correct answer

To win in this position, the "whites" must:

- a) Give checks constantly and there will be a checkmate
- b) Take the king to the g7 field and checkmate
- c) the "whites" Queen and King must take the black King to the edge then checkmate
- d) Sacrifice the Queen



### Chart N8- The turn is "Whites" Circle the correct answer. Whose position is the best?

- a) The whites'
- b) The blacks'
- c) Both positions are equal

Chart N1 tests the learner's knowledge of the knight step, double attack, the knowledge of the "fork" and the ability to create it. The learner applies the double attack model and creates a similar structure.

Chart N2 checks the knowledge of the bishop step and the "pin". The second chart has one piece more than the first. The learner applies the pin model and creates a similar structure.

Chart N3 tests the concepts of check, checkmate, "control", as well as knowledge of the steps of the rook, queen and king, the ability to create a checkmate position.

Chart N4 checks the learner's attention, whether he / she sees the threat of the checkmate, also checks the learner 's ability to predict (predict), and whether he / she is able to find protection from the given threat (prevention). This diagram is solved with an intermediate check, and it is necessary to calculate 2 steps.

Chart N5 tests the learner's alternative thinking, as there are dozens of possible continuations in the position: e.g. Rd8, Rfc1, Qb7 etc. but you have to make an alternative step out of the molds, an impossible one at first sight.1. 1.Qe8+ sacrificing the Queen Re8 2.Re8#

Chart N6 checks whether the learner is imagining the plan and the implementation of the plan (algorithm).

Chart N7 checks whether the learner has sufficient knowledge of the following topics: open line, double pawn, active king, passive king, single pawn, double pawn, and whether the learner is able to combine facts and assess the situation. 50% of the pre-tested pupils (Abovyan N7 basic school) just counted the pieces and said that the position was equal. Only the other half of the pupils paid attention to the double pawns, the open line, the good white rook, and the king.

Chart N8 tests the learner's critical thinking. The learner, seeing the tangible advantage of black, does not rush to record the fact, but by questioning, deepens the analysis of the fact and comprehensively perceives it. The learner not only evaluates, but also finds the best continuation by the whites, and only then gives a final evaluation.

Thus, let's look at the analysis of the impact of the characteristics of parents and teachers on the knowledge of pupils.

Parents' attention to the child's preparation for the lesson was assessed by the following provisions: Pupils:

- Learn lessons with parents
- Talk to parents about class work
- Parents help with chess tasks
- Parents check homework
- Parents are busy, thus they are preparing for classes alone.

The distributions of the variables expressing the level of parental attention are given in Figure 2.

Our goal is to find out the influence of parents' level of attention on the chess test score.





Figure 3 shows the five provisions that reflect the degree of parental attention in case of Yes or No answers based on the chess test scores.

The t-test did not reveal statistically significant differences between the "Yes" and "No" answers to each of the chess test scores.

However, it was on the verge of statistical certainty that the effect of the "Parents help with chess homework" clause (grade point average "-0.39", significance level - 0.071), but not in the expected direction, the chess test scores of other pupils whose parents helped them complete their chess tasks were lower than those whose parents did not.

We tend to explain this pattern by the fact that in many cases learners acquire chess knowledge on their own. Our observations have shown that often children's knowledge is more sound and professional than their parents ', which on the one hand leads to a misunderstanding of the parents' own help, and on the other hand increases the probability of their inadequate help. The problem should probably be analyzed from the socio-psychological point of view of the communication between the generations.

Figure 3 Relation of chess test scores to pupils from the characteristics that reflect the degree of attention of the parents



Below are the diagrams showing the answers to the question "Did you try to teach chess to your child before teaching chess at school?"



Figure 4 "Did you try to teach chess to your child before teaching chess at school?"

The t-test showed that when a parent tries to teach a child to play chess before the child goes to school, it statistically raises the score of chess knowledge: t (476) = 2.755, p = 0.006. We think that on the one hand it is conditioned by the growth of positive tendencies towards the subject, and on the other hand it may also be conditioned by the presence of certain preconceptions, psychological adaptation to the subject and other factors.

Figure 5 How much time do you spend playing chess with your child per day?



Figure 5 shows that an increase in time spent playing chess with a child increases the average value of a chess knowledge grade.

Knowing or not knowing whether the child asked by the parent to play chess does not affect the child's chess knowledge assessment.

Let us now turn to the interaction between the teacher's teaching experience and the learner's chess knowledge.



Figure 6 How many years have you been working at the school, including this school year?

Figure 7 The average rating of problem solving



The testing showed that in the groups of teachers formed by seniority: 1-5 years, 6-10 years and 11 years and older, the average scores of the pupils' test differed statistically significantly (Table 1 and Table 2):

- One-dimensional dispersion analysis showed that there was a statistically significant difference between at least two of these three groups: (F (2, 475) = [28.086], p = 0.000
- Tukey's HSD test showed that .
- Between groups with 1-5 and 6-10 years of experience (p = 0.000, 95% CI = [0.4234, 1.4447])
- Between groups with 1-5 years and 10 years or more experience (p = 0.000, 95% CI = [-1.6879, -0.3144])
- With 6-10 years and 11 or more years of experience (p = 0.00, 95% CI = [-2.5720, 1.2984]) The highest value is among the pupils of teachers with 10 and more years of

experience, the second among the pupils of teachers with 1-5 years of experience and the third among the pupils of teachers with 6-10 years of experience.

ANOVA									
The number of correctly solved problems with counted assessments									
	Sum of Squares	df	Mean Square	F	Sig.				
Between Groups	247.406	2	123.703	28.086	0.000				
Within Groups	2,092.106	475	4.404						
Total	2,339.512	477							

Table 1 The number of correctly solved problems with counted assessments (ANOVA)

MULTIPLE COMPARISONS									
Dependent Variable: The number of correctly solved problems with counted assessments									
Tukey HSD									
(I) Teaching	(J) Teaching	Mean	Std. Error	Sig.	95% Confidence Interval				
experience	experience	Difference (I-			Lower	Upper			
		J)			Bound	Bound			
1-5	6-10	0.93404*	0.21720	0.000	0.4234	1.4447			
	11+	-1.00115*	0.29208	0.002	-1.6879	-0.3144			
6-10	1-5	-0.93404*	0.21720	0.000	-1.4447	-0.4234			
	11+	-1.93520*	0.27087	0.000	-2.5720	-1.2984			
11+	1-5	1.00115*	0.29208	0.002	0.3144	1.6879			
	6-10	1.93520°	0.27087	0.000	1.2984	2.5720			
* The mean difference is significant at the 0.05 level									

\*. The mean difference is significant at the 0.05 level.

*Table 2 The number of correctly solved problems with counted assessments (*MULTIPLE COMPARISONS)

The gender of the teacher also contains some interesting characteristics from the point of view of chess knowledge.

Figure 8 Teacher's gender- Male, Female







The T-test showed that the average value of pupils' chess knowledge scores was statistically dependent on the teacher's gender: The grades of male teacher students are statistically significantly higher than those of female teachers. t (476) = 6.07, p = 0.000



#### Figure 9 Teachers' age

#### The average rating of problem solving

From the point of view of teacher age characteristics, it is interesting to note that the testing showed that in the age groups of teachers, the average grades of pupils differ significantly.

The age groups can be grouped into two larger groups, in which the pupils' grades differ statistically significantly from each other, and within each group they do not. The first of them are the groups of teachers aged 25-29 and 40-49, and the second are the groups of 30-39, 50-59, 60+ and under 25.

#### REFERENCES

- (Rockstroh, Angela H., "Teacher Characteristics on Student Achievement: An Examination of High Schools in Ohio" (2013). MPA/MPP Capstone Projects. 49. <u>https://uknowledge.uky.edu/mpampp\_etds/49</u>):
- (Smyth E., Whelan C., McCoy S., Quail A., Doyle E., Understanding Parental Influence on Educational Outcomes Among 9 Year Olds in Ireland: The Mediating Role of Resources, Attitudes and Children's Own Perspectives//Child Indicators Research, VL-3, 2009, pp.85-104, Doi: 10.1007/s12187-009-9051-9):

#### *ԱՄΦ*Ω**Φ**ԱԳԻՐ

# ՇԱԽՄԱՏԱՅԻՆ ԳԻՏԵԼԻՔՆԵՐԻ ՎՐԱ ՈՒՍՈՒՑԻՉՆԵՐԻ ԵՎ ԾՆՈՂՆԵՐԻ ԲՆՈՒԹԱԳՐԵՐԻ ԱԶԴԵՑՈՒԹՅԱՆ ՍՈՑԻԱԼ-ՀՈԳԵԲԱՆԱԿԱՆ ՎԵՐԼՈՒԾՈՒԹՅՈՒՆ

ՍԱՐԳՍՅԱՆ Թ.Ա., ԳԵՎՈՐԳՅԱՆ Ս. Ռ., ՄՈՎՍԻՍՅԱՆ Ն.,Ն., ՄԱՆՈԻԿՅԱՆ Ս. Ա., ՍԱՐԳՍՅԱՆ Վ.Ժ., ԽԱՉԱՏՐՅԱՆ Է. Ա.

Քանի որ ուսուցիչներն ու ծնողներն ուղղակիորեն պատասխանատու են սովորողների ակադեմիական ձեռքբերումների համար, նրանք կրթության վրա ազդող դպրոցահեն ամենակարևոր գործոնն են համարվում։ Եվ կարելի է ենթադրել, որ կրթական առաջընթացի վրա ներգործել կարող են ուսուցիչների և ծնողների ամենատարբեր բնութագրերը՝ սեռը, տարիքը, կրթական մակարդակը, փորձառությունը և այլն։ Հոդվածում ներկայացված են շախմատային ձեռքբերումների և դրանց վրա ազդող գործոնների փոխկապվածության սոցիալ-հոգեբանական մեխանիզմները։ Հոդվածի գիտելիքների համար հանդիսացել Շախմատային գնահատում hhup են ուսուցիչներից և ծնողներից համահանրապետական հետազոտության արդյունքում ստացված տվյայները։

**Հիմնաբառեր.** շահագրգիռ կողմեր, դպրոցահեն գործոններ, շախմատային նվաձումներ, սոցիալ-հոգեբանական բնութագրեր։

#### РЕЗЮМЕ

# СОЦИАЛЬНО-ПСИХОЛОГИЧЕСКИЙ АНАЛИЗ ВЛИЯНИЯ ХАРАКТЕРИСТИК УЧИТЕЛЕЙ И РОДИТЕЛЕЙ НА ШАХМАТНЫЕ ЗНАНИЯ САРГСЯН Т. А., ГЕВОРГЯН С.Р., МОВСИСЯН Н.Н.,МАНУКЯН С. А., САРГСЯН В. Ж., ХАЧАТРЯН Э. А.

Поскольку учителя и родители несут прямую ответственность за академические достижения учащихся, они считаются наиболее важными школьными факторами, влияющими на их учебные результаты. Естественно предположить, что разные характеристики учителей и родителей, такие как возраст, пол, уровень образования, опыт и т. д. могут влиять на результаты обучения. В статье представлены социальнопсихологические механизмы взаимосвязи шахматных достижений школьников и факторы, влияющие на них. Для исследования мы использовали данные, полученные от учителей и родителей в ходе республиканского исследования оценки знаний шахмат.

**Ключевые слова:** заинтересованные стороны, шахматные достижения, социальнопсихологические характеристики

> Approved for publishing by expert of education Serob Khachatryan 14.12.2021