

# Innovative Models of Teaching in Training of Adolescents Chess Players

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**Abstract:** The development of computer technologies, specialized software and Internet deepens the connection between them and the chess. Its relatedness increases both on educational and training and on competitive level. The contemporary training of adolescents players has very unified character and a comprehensive innovation methodology would be applicable to players, who are different at strength and age. Increasing the massiveness in junior chess implies a higher quality of coaching work, related to the use of IT innovation and modern software chess products. **HYPOTHESIS:** The use of computer innovation would increase the effectiveness of the educational and training process in chess. **OBJECTIVE:** To prove the improvement of the effectiveness of the educational and training process through the development and testing of innovative education model for adolescents players with predominantly using of specialized chess software analytical module and web-based learning. **METHODOLOGY:** Pedagogical experiment, expert evaluation, questionnaire survey, sports pedagogical testing and mathematical and statistical methods. **CONCLUSION:** The experimental methodology for the training of adolescents players by using specialized chess software, internet and web-based forms of training leads to higher efficiency of the training sessions and higher results, compared to traditional ones.

**Key words:** Computerization, chess software, chess training.

## 1. Introduction

The entry of the IT innovation and the related software chess products in the chess training system, places in a new way the question not only about the strategy of preparation of players, but also about the future of the chess game itself. The problem about the development and sustainability of modern chess in the dynamic era of computers and Internet is gaining currency.

The study is entirely directed to the effects of development and testing of innovative methods of training adolescent players, with advantageously use of specialized chess software ChessBase 12, Houdini 3 and Web-based forms of training. It is also directed to the way this methodology contributes about the disclosure of the new phenomena in the training and in chess practice.

GM Burgess considers the entering of the computer technology in the chess sport. It is no exaggeration to

say that computers and the Internet have revolutionized almost every aspect of chess. Gradually they became more successful, and chess computers appeared in many homes, providing useful playing opponents for children and lower-club players.

Then the first game database programs were released, which rapidly changed the way professionals prepared for their games and stored information. This also made research a good deal easier, and the technical aspects of writing about chess—or both amateurs and professionals—became more straightforward [1].

Axel Smith analyzes the importance of technical training and the methods for contemporary using of appropriate software in one of the most popular chess books for 2013—"Pump Up Your Rating". He is the first who passed the idea, that the combinational vision shall be improved not by solving selected chess combinations with different tactical motifs, but by applying the method of iteration—the same set of combinations, for example 500 that follows to be

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solved in a defined time interval, until achieving success rate, close to the absolute [2].

Poloudin reveals peculiarities in the process of chess training with predominantly use of computer technologies in adolescents. According to his thesis, children develop adequate volitional qualities, which occur both during game and sessions, and during tournaments with educational and sport purposes [3].

One of the leading trainers Vladimir Tukmakov analyzes the meaning of modern technologies for the occurred amendments in training. He describes specific situations, in which the solution of a debut problem in very short time affects the choice of debut and even the choice of the coach which competitor to join the team for the next meeting of the Chess Olympiad [4].

## 2. Methods

Based on the analysis of literature sources, questionnaire survey and the experience of leading specialists, as well as own experience, we created an author methodology for training adolescents players. To appropiate this methodology, we formed two groups—control group and experimental group. Both groups consisted of 20 children, between the ages of 8 and 10 years. The groups were identical in the strength of the players, and the material was taught to them by the same methodology. The only difference was the use of innovative models of training in the experimental group.

The chess training was conducted in 10 months and followed certain scientific and educational style of realization. 10 chess tests were developed for the purposes of the experiment, each composed by 6 tasks, aiming to determine the level of success rates of the control and the experimental group. They were divided into 3 main modules—tactics, strategy and endgame. The test tasks were chosen according to the educational material, as we used appropriate chess literature for their selection.

## 3. Results

At the work with both groups in the first two months, we emphasized on the formation of attacking style of play, with predominant combinational motives and approaches. To calculate the options for finding the right solution time we have, tactics are especially important. The computer technologies give opportunities to save time, that would otherwise be spent on movement from one to the next position, etc. It is evident by the applied graphic (Fig. 1), that the learners from the experimental group have used effectively this time, as almost half of them (9 children) have achieved 100% success rates.

In Tests 2-6 (Fig. 2), the tendency to positive results in both groups continues. It even deepens as a result of the fact, that the created lasting habits of using interactive tools give opportunity to the students to use them much more easier and available. Also, they perceive them much more felicitous and as a consequence the effectiveness affects more positively on their results.

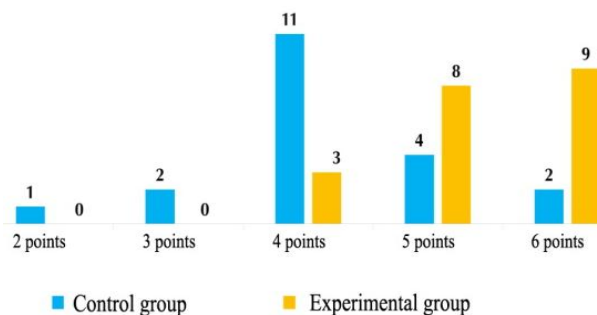


Fig. 1 Distribution of correct answers of Test 1.

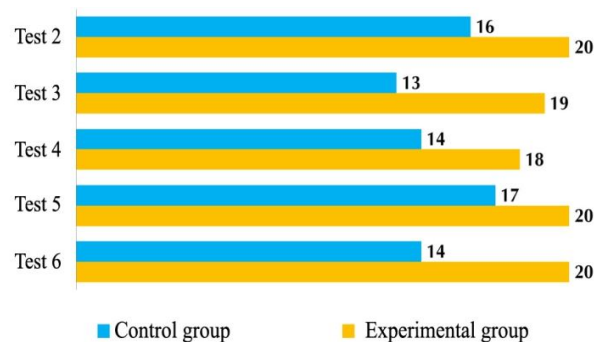


Fig. 2 Number of children that successfully passed Tests 2-6.

Task 2 from test 5 is presented in diagram 1 (Appendix A), where the results in the experimental group are excellent—100%. In the control group, the children, who have done successfully with the task, are 65%. There is a significant difference between the results of both groups. The theme of the task was related with “Open and semi-open lines and attack of the king”—a theme that assumes tactical motives. According to us, the results of the experimental group are better due to the use of a specialized chess software.

In Test 7, we have quite similar results in both groups, as the reason for that is the specificity of the material, on which the test was made. It has a purely strategic character, i.e. it has not so many options for calculating and saving of time is not a factor with such importance. The complexity of the topics is due to abstract elements, extrinsic for the age of the learner, which hinders to show excellent results. The data analysis shows that in Test 7, we have the lowest number of excellent results (with maximum number of points) compared to all tests of the children from the experimental group, which is a sign of the complexity of the strategic chess mastery (Fig. 3).

Diagram 2 represents task 3, which has a strategic character. In order to solve the assigned task correctly, it is necessary to determine a game plan. The results of both groups, who did excellent with the task, are relatively similar—80% in the experimental group and 85% in the control group. In the field of chess strategy, the advantages of the experimental method are not that distinct.

If we report the particularities in the shown results in Test 7, in all other tests at least eight of the twenty children in the experimental group resolve the maximum number of examples of each test. We can certainly not say the same about the control group, in which such cases are single. Gradually, in Tests 8-10, the children in the control group began more widely to have full success rates. This comparison is especially vivid at the results of the experimental group in these

last three tests (Fig. 4).

In Fig. 5, we have presented distribution of average grade of children from all tests. The results show that there are no children in the experimental group, with average grade under 4. On the other hand, there are 5 children in the experimental group with a maximum average success against none in the control group. Consequently, the average success rate of the children in the experimental group is higher.

We can reach to the same conclusion if we consider the opposite section—the average results of each group

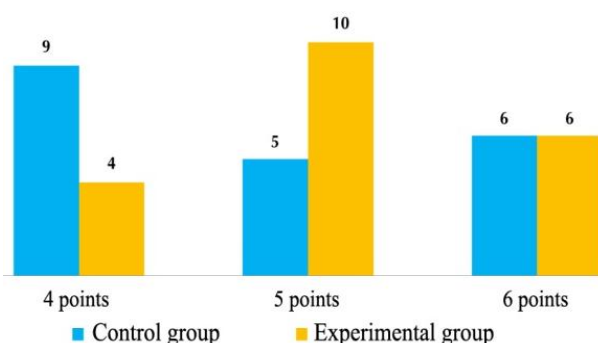


Fig. 3 Distribution of correct answers of Test 7.

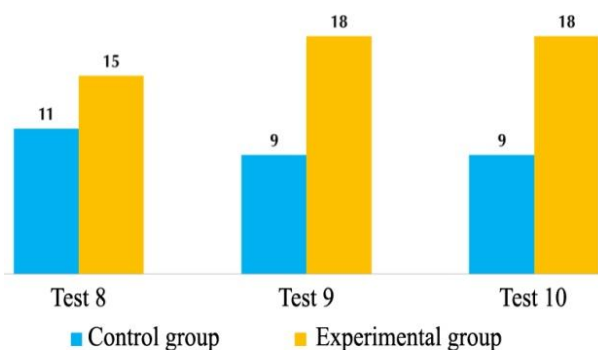


Fig. 4 Number of children with maximum success rates of the last three tests.

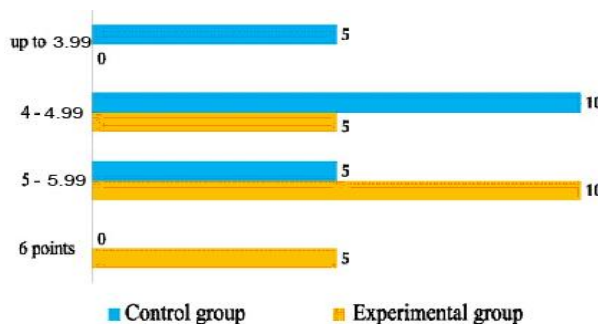
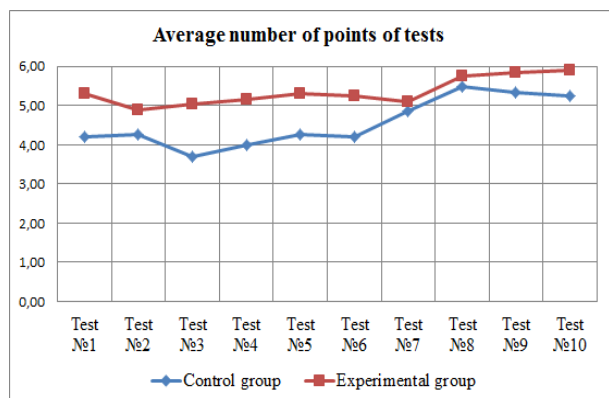


Fig. 5 Average success rates of all tests of children in both groups.



**Fig. 6** Average number of points at the tests.

in the relevant tests (Fig. 6). The experimental group performs better. Only in Tests 7 and 8, the average value of both groups was almost identical.

The results of the experiment show that the children who were trained in the experimental group through specialized chess technologies, are doing significantly better than the children who were trained through traditional and classic methods.

#### 4. Conclusions

In the course of theoretical and experimental research, the following conclusions have emerged:

(1) Chess, as an ancient game, evolved into one of the most popular contemporary sports, continues to develop, but in conditions of changed environment.

The cyberspace creates conditions and prerequisites for changes in the theory of chess, in the methods of educational and training activities, as it increases their dependence on the resources that it offers.

(2) The experimental methodology for the training of adolescents players by using specialized chess software, internet and web-based forms of training, gives better results in education in the field of tactical approach.

(3) In the field of chess strategy, the advantages of the experimental methodology are less visible, according to the specifics of this matter

(4) The proposed improved training models based on the results of the pedagogical experiment, lead to higher efficiency of training sessions and to higher sports racing results, compared to the traditional ones.

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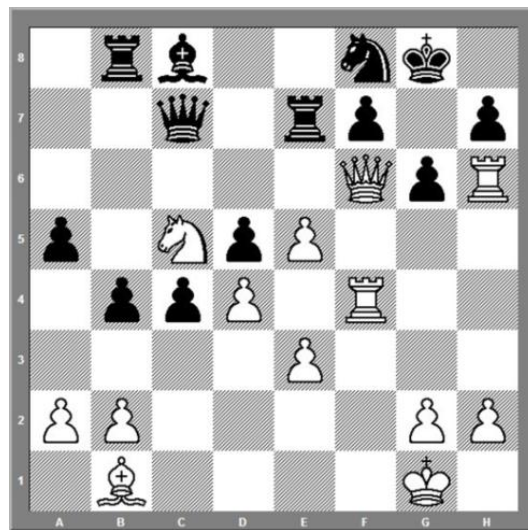


Diagram 1 Open and semi-open lines and attack of the king.

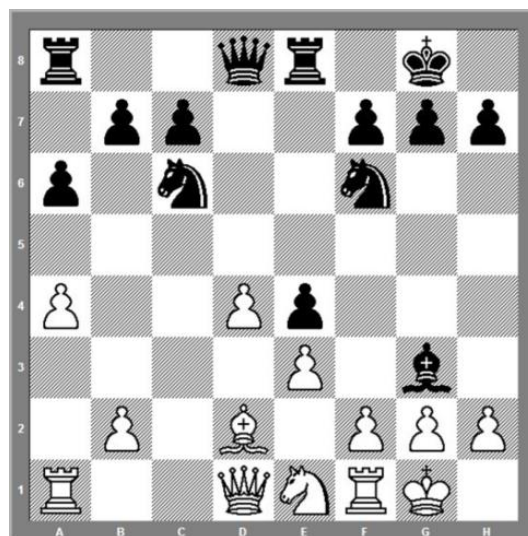


Diagram 2 Swap “hg-fg”.