

Preliminary communication

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CHESS AS AN EXTRACURRICULAR ACTIVITY

Summary: *Extracurricular activities as a variety of organizational forms of students gathering in free extracurricular time at elementary school have predominantly cultural, artistic, sporting, technical, recreational or scientific character (Cindrić, 1992). Through them, students meet their needs and develop the culture of using their leisure time. Thanks to its pedagogic potential, chess is increasingly used as an educational tool and taught in elementary schools around the world. This trend begins to follow Croatia, where chess in many schools is carried out as an extracurricular and/or extracurricular activity. In this paper we will present and analyze the advantages that chess has for the elementary school students and empirically determine the occurrence of chess as an extracurricular activity in the schools in the City of Zagreb. Also, based on the results of the qualitative research, the views of the chess teachers regarding advantages of chess implementation, ways of determining the interests of students, and teaching methods used in chess teaching will be presented.*

Keywords: *teaching methods, elementary school, student*

INTRODUCTORY REMARKS

Chess is a game for two players, played on a chess board, or chequerboard, according to the rules and regulations accepted throughout the world, as prescribed by the World Chess Federation (FIDE - Fédération Internationale des Échecs).

There are several theories about the origins of chess. The main reason for this is because chess boards (chequerboards) have been found in Egyptian and Chinese temples dating from the dawn of civilization (Cvetnić, 2014). However, the existence of chessboards at that time does not necessarily mean that chess existed as a game, so the theory that chess dates back to India in the 6th century

is more widely held and accepted by FIDE (2009). It developed from a game of strategy called *chaturanga* (army). In this game the army was represented by pieces consisting of infantry, cavalry, elephants and military vehicles, which we can compare to pawns, knights, bishops and rooks. From 600 AD the game of chess spread to Persia, and was known as *shatranj*. When the Arabs conquered Persia, chess also became a subject of interest to them, and they began to study it from the point of view of mathematics and geometry, and the first theoreticians began to appear. Through the Byzantine Empire and the Mediterranean, chess arrived in Western Europe and Russia in the 9th century, and by the year 1000 chess had spread throughout Europe (Golombek, 1980). The rules changed over time and acquired their present form at the end of the 15th century. Although it was at first a game played in royal courts and by nobles, in the 18th century it began to be accessible to the wider population. The first mention of chess in Croatia is to be found in the inventory of a trader in Zadar dated 1385. Moreover, there is also a record in Dubrovnik dated 1422 and later also in Split and Rijeka (Sušić, 2006).

Today chess is recognized as a mind sport by the International Olympic Committee and most countries of the EU. The reasons why chess is recognized as a sport are listed by Foley (2015): competitiveness, organization, the importance of physical preparation, its code of conduct, its global nature, the mental component, the rating system of players etc. According to FIDE, this, the most popular board game, is played by about 605 million people around the world (FIDE, 2012) and that figure is rising every day.

Chess is in essence a strategy game. To win, it is necessary to plan and consider one's own moves and those of one's opponent. The player makes decisions by analysing the factors and obstacles that may be encountered in a given position. If players make good decisions, they are rewarded by victory. However, if they make too many errors during a game, it is very likely that their opponent will make use of those mistakes and bring them to defeat. However, chess is so complex and full of possibilities that players have many other possibilities by which they can correct their mistakes and achieve their original goal.¹⁰ With the introduction of the clock as part of the game, players must make their decisions within a set time limit, and this also implies responsibility for time spent, and the need for a quick assessment of the current situation and the possibilities that exist. The possibility of correcting one's mistakes is an extremely important educational message of chess, which teaches the player not only concentration and taking various factors into consideration, but also the fact that every one of us can make wrong decisions, make mistakes, but life, like chess, almost always provides other possibilities leading to a positive outcome.

¹⁰ Already after the second move by the black player, 71852 different moves are possible. After the fourth move, that number rises to about 315 billion possibilities! (Shenk, 2007)

A person playing chess is playing a game that imitates his or her life (Kasparov, 2009). Playing chess, as in life, we make decisions, taking into account as many details as possible, but also the possible consequences that our decisions may cause. But chess is more than a game. It is an intellectual pastime which has artistic qualities and scientific elements, a game and a sport which is useful and applicable in many areas of life. The educational world has found applications for chess as a game and sport, and it is being used and implemented increasingly and offered as an extracurricular or after-school activity, and in some places even as a teaching subject. The main reasons for this are the many advantages that playing chess provides for students in various aspects of their personal development. The way chess is taught in educational establishments varies from country to country. In Croatia, it is predominantly in the form of an extracurricular or after-school activity, but there are countries where chess is a mandatory or elective subject.

RESEARCH INTO THE EFFECTS AND ADVANTAGES OF CHESS

Jelovica (2012) points out three reasons why chess is ideal for research. These are: the large chess playing population, the sufficiently simple rules which mean that anyone can learn it in a short period of time, but it is also so complex that no one will ever master it completely. This all provides researchers with a large population for research, comparison of results over a long period of time as chess skills are mastered, the existence of a rating system, which shows a chess player's level of expertise, and the existence of a large archive data base of all games and chess players' results. Chess, primarily due to the cognitive processes it involves, has been of interest to scientific researchers, but also practitioners, for more than 100 years. Dizdar (2014) collated experiences and opinions from chess practice and drew the following conclusions: chess teaches people problem-solving skills, rewards determination and patience in solving problems, promotes originality, inventiveness and imagination, develops self-confidence and a real evaluation of one's own capacities and respect for one's opponent, teaches responsibility, it is a model of a world in constant change to which individuals must adapt, it requires the ability to process information well and make decisions quickly, it quickly reveals superficiality and hastiness, it brings people together, regardless of their social and economic status, it aids socialization and prevents harmful habits...

Alongside the work of practitioners, many scientists have expressed an affinity for chess. The first recorded scientific research related to chess was conducted by Alfred Binet (1894). This psychologist, best known for producing the first intelligence tests, was inspired to research blindfold chess,¹¹ and he wanted to establish

¹¹ Blindfold chess is a variation of chess where the players do not have the right to see the board and the pieces, but they must memorize an image of the positions, and make moves by announcing them verbally.

if there is any connection between playing blindfold chess and human memory. Chase and Simon (1973) and de Groot (1978) conducted similar research. These studies showed that good chess players have a better developed memory regarding the positions on the chess board, where chess players remember the positions of chess pieces using the principles of logic (Binet, 1894), and the existence of differences in the memory of positions in practical chess between different categories of subjects in the research (uncategorised and Grand Masters). Chase and Simon (1973) in their research established that the exceptional memory seen in good chess players is not reflected in other fields of activity, and not even in chess positions with no logical sense within the realm of chess, whilst the research by de Groot (1978) established that the differences in memory would not differ significantly if the pieces were distributed without any logical sequence. From this research it could be concluded that chess does not necessarily improve memory skills in people, despite the fact that we often hear this as one of the advantages of playing chess. However, more recent research has found a certain level of correlation between playing chess and the development of certain cognitive fields in individuals and groups. So, Christiaen's research (1976) showed that a group of fifth grade students who studied chess for one hour a week (a total of 42 hours) achieved significantly better results in tests at the end of sixth grade than the group that did not play chess. Further, Frank (1978) conducted research on a sample of adolescents aged 16 to 18 years. The students who played chess (for one hour a week) alongside their classes, showed significant progress in spatial, numerical and verbal skills at the end of the research in comparison with the group that had not had chess training. Ferguson (1986, according to Ferguson 1995) showed that gifted students included in chess groups achieved better results in creativity than gifted students included in other activities. Gaudreau (1992, according to Ferguson 1995) researched the connection between inclusion of chess in the mathematics syllabus (on three levels: the syllabus does not include chess, chess instruction, and intensive chess instruction) and students' success. He showed that in tasks that included simple calculation there was no statistically significant difference between the results of any of the groups, but in more demanding tasks, the last two groups achieved significantly better results. Ferguson (1995) also established that after being taught chess, students achieved some progress in reasoning in comparison with the national standard, but significantly greater progress in memory. Marguiles (1996) researched the correlation between chess and reading skills in students, where the results showed that the group of students who had practised chess for two years showed greater progress in their reading skills. Liptrap (1998) conducted similar research, and the results showed that in third grade there was no statistically significant difference between the control and the experimental group, but in fifth grade the students in the experimental group (the chess players) achieved significantly better results in reading and mathematics. Trincherro (2013)

conducted research in which he established how members of a group that studied chess for the entire school year, with the help of a chess trainer and computer programs, achieved significantly better results in the PISA mathematics test. Although this research shows the advantages that chess provides in other spheres of life, there are still some who are sceptical of the quality of this research. The best-known study on the subject was written by Gobet and Campitelli (2006). They presented and pointed out the need for caution in asserting that involvement in any one activity contributes to cognitive development in other spheres.

Apart from these advantages of playing chess, Pavičić Vukičević (2013) also noticed that chess in essence is a game, and linked chess with the positive aspects of playing games in general. In the book *Homo Ludens*, Huizinga (1992, according to Pavičić Vukičević, 2013) talks about the historical importance of chess for mankind and concludes that play in fact preceded the development of culture. Here he points out three important dimensions of play: biological, psychological and ethnographical. The *biological dimension* refers to the physiologically conditioned psychological reactions, such as: release of excess life energy, the instinct for relaxation, preparation for more serious activities, passion for control, the desire to compete with others, practice in self-control, compensation for the unobtainable etc. The *psychological dimension* of play relates to the recognition of the human spirit, thanks to which play becomes possible. Through play man overcomes the physical realm, which can be seen in different degrees of intensity of tension, joy and relaxation in players. The *cultural dimension* of play is omni-present. In this context, play is an integral part of the culture of life, and is a meaningful, socially constructed activity (Huizinga, 1992, according to Pavičić Vukičević, 2013). Therefore, we may conclude that chess as a game also meets an immanent human need which maintains psychological balance, since it is a pleasant and relaxing activity, in which people take part in order to escape their everyday routine (Piaget, 1981).

METHODS FOR TEACHING CHESS

Following strong criticism of traditional teaching methods, at the beginning of the 20th century many alternative educational methods appeared, such as the Montessori system, Freinet schools, the Dalton Plan, the Winnetka Plan, the Jen School, Waldorf schools etc. (Matijević, 2001). The idea that is common to all these alternative methods is to change the “old school” model. That school is characterised by up-front work by the teacher, memorising information and its later reproduction in order to receive the best possible grade. Although this form is unfortunately still found in schools today, alternative teaching movements have launched a new wave of educational thought. For instance, many authors (Armstrong, 2008; Glasser, 2005; Matijević and Radovanović, 2011; Meyer, 2005; Sahlberg, 2011; Terhart, 2011; Vrcelj, 2000) write about the weaknesses of this practice, and

promote a new form of education, focused on the student. According to their way of thinking, teaching should combine various learning and teaching methods, the student should become an active subject of the learning process, whilst the purpose of the whole process is not simply memorising facts, but the development of a person who knows how to think critically, independently, solve problems, and apply what they have learned. Many authors have written about the importance of using different teaching methods (Bognar and Matijević, 1993; Meyer, 2005; Poljak, 1980; Terhart, 2001), and they are unanimous in saying that there is no perfect method of teaching but it should depend on a variety of factors, such as the specific character of the students, the content, the possibility of achieving the desired outcomes, the potential of the method for achieving several teaching goals, the furnishing of the classroom, the students' knowledge etc. Most traditional teaching methods are also used for teaching chess. The method using an oral presentation, followed by a demonstration is the first step used by teachers in instructing students about the rules and general principles of chess. The conversation method is constantly used in teaching chess, through a discussion which Poljak (1980) mentions as the highest form of conversation. Precisely this conversational method is most often used in practice, because chess is also a philosophical game in which there is always more than one solution, and frequently, on the basis of better arguments, we can assess the strength of a move. In relation to traditional methods of teaching, the student also learns in other ways, by inspection, analysis, observation, consideration, activity, and creating their own mode of learning, where feedback may be instant, but also obtained by analysis of their own actions. In this process, the role of the teacher is transformed into that of a helper, a critical friend, an advisor, a guide and one who remains a role model and expert, who is available and willing to help. We can also link all of this with the thoughts of Meyer (2005), who mentions diverse teaching methods as one of the characteristics of good teaching.

CHESS AS AN EXTRACURRICULAR ACTIVITY

According to Article 2 of the State Education Standard: "Extracurricular activities are a form of activities which a school plans, programmes, organizes and realizes, in which the student is included independently, optionally, and voluntarily" (OG, 2008a). Cindrić (1992) defined extracurricular activities as various organizational forms of gathering students together in their free, out-of-school time, in the school, which are mainly educationally cultural, artistic, sporting, technical, recreational and scientific in character. Through them, students meet their creative and recreational needs, and in particular learn how to use their free time. By including students in these activities, their needs, desires, interests and pursuits in terms of education, but also their up-bringing, are met. They are offered to students as a way in which they can use their free time, which is one of the areas of life with the most educational potential but which is often neglected in young people, where there

is room and the opportunity for interaction in the processes of individualization, socialization, and inculturation, which serves to develop self-actualization and the building of character (Previšić, 2000). Extracurricular activities must be provided by schools by law since 1953, when under the title “free activities” they were introduced into Croatian schools (Previšić, 1985). Mlinarević and Brust (2009) mentions as a prerequisite for good quality, educationally designed extracurricular activities, the support of the person running them in the choice of programme, the inclusion of students in the activities, and the continuous professional training of the leader in the activity they are organizing. The content and activity of chess belongs in the field of sports and health education, and is part of the Curriculum (2006). The procedure for organizing chess as an extracurricular activity is the same as for all other extracurricular activities. If students show an interest in chess, or if one of the members of the educational establishment (for example, a teacher, a professional associate, a parent etc.) suggests or recommends the introduction of chess to the school, the school board must decide on this, according to the Act on Primary and Secondary School Education (Zakon o odgoju i obrazovanju u osnovnoj i srednjoj školi), Narodne novine 2008b (Official Gazette, 2008b).

Encouraging the introduction of chess, and other extracurricular activities, to the school curriculum is not just the task of individuals and enthusiasts, who will “take the pulse” of the students. The first significant step in the implementation of the idea to introduce chess to the school curriculum was taken in 1984, when FIDE founded a special commission for introducing and implementing chess in schools. The greatest contribution to the project of chess in schools in Europe was definitely the Declaration of the European Parliament of 15th March 2012 on the introduction of the programme “Chess in School” into the educational systems of the European Union, declaring the benefits of chess in the development of children’s concentration, patience and persistence, creativity, intuition, memory, analytic and decision-making skills, determination, motivation and sportsmanship (EU 2012). We also must point out the special situations in certain countries such as Turkey, Armenia and Russia, who attribute increasing importance to chess, and give it a place within their educational systems, and have introduced chess into their educational curriculum in various teaching modes.

In Croatia, extracurricular work with students began in Zagreb in 1977, through small groups. The organizers were chess schools, and often today, under the authority of the home sports federation, they still participate in organizing extracurricular and after-school activities. In Croatia there are more than 40 chess schools, who work with students in cooperation with their schools. In addition, *the Association of Students’ Sports Clubs (Savez učenika sportskih klubova)* is the main body responsible for sports competitions, including chess, taking place at all levels (school, city, county and state). According to research from 2012, extracurricular chess activities take place in almost 200 elementary schools. More than

4000 students are involved in them, and a little under 150 trainers. The trainers are mostly people who work at the school itself, but about one third of them come from outside the school (Dizdar, 2014).

EDUCATION OF CHESS TEACHERS¹²

Implementation of chess and teaching it in elementary schools gives rise to the important question, “Who should teach it?” The problem related to this question is certainly the main reason why many schools do not organize chess activities. In practice there are usually two solutions. One is that a chess player comes to the school from outside and organizes chess groups, and the other is that a teacher who is already employed in the school does this, if they know at least the basics of the game of chess. However, the fact that a chess expert comes to the school does not necessarily mean they have the necessary teaching skills for working in school. On the other hand, if we leave this task completely up to teaching staff, there is a risk that they are not sufficiently competent in chess, and it is possible that some schools do not have any staffs who know how to play chess well enough. We will present some models below and analyse some possible solutions to this problem.

a) Education of chess trainers by FIDE

The World Chess Federation (FIDE) is the largest organization that deals with the question of chess in educational systems. This organization offers a solution by organizing courses and licensing those who attend their courses. Passing their course and obtaining their diploma should mean that the necessary skills have been acquired for teaching chess in schools. These seminars are held all around the world, but we would like to mention two different modes in particular: FIDE’s Trainers Commission seminars¹³ and Seminars for the Title of FIDE Instructor.¹⁴

FIDE Trainers Commission Seminars: The FIDE Trainers Commission was founded in 1998 with the aim of gathering together the world’s best chess trainers and provide recognition, education and licensing of chess trainers and instructors around the world. According to the Trainers Commission syllabus, passing the first two levels (developmental instructor and national instructor) is sufficient to teach chess in schools, since both have the character of teaching qualifications. From this syllabus it may be understood that acquiring even the two lowest level titles is sufficient for gaining competence as a chess teacher in schools, and the diplomas guarantee that the trainer/instructor is able to do that job after a four-day seminar and

¹² In this paper we will use the term „chess teacher“ for any person teaching chess at school. It differs from the term “chess coach / instructor” which is more commonly used in the context of chess as a sport. Chess coaches/ instructors work more often in chess clubs.

¹³ <http://trainers.fide.com/>

¹⁴ <http://cis.fide.com/>

15 hours of lectures. From an educational perspective, the problem with seminars of this nature is that they do not develop the sufficient educational methodological competence in teachers that is necessary for working with children.

Seminars for the title of FIDE School Instructor: The idea of launching seminars for the title of FIDE School Instructor dates back to 2012, and is a reversal of the first model. That is to say, whilst in the first model the participants were chess players who received licences on the basis of their chess skills, this model is aimed primarily at teachers, who only need to know the basics of chess. More precisely, the seminar may be attended by all those who: a) teach or will teach chess in schools, b) have been trained in psychology and education, c) have good knowledge of basic chess. The seminars last three or five days, during which the participants attend 15 hours of lectures (Introduction to Chess, Chess Culture, Pedagogy in Relation to Chess...), after which they take an exam. From this alone, it may be concluded that this form of training is more attractive than the previous model in the context of chess in schools. The advantage of this model is that participants are directly from educational practice and its focus is on future chess teachers in schools, whilst the previous model included education for chess trainers, who do not work in schools, but help in the development of professional chess players. Although it may be presumed that those who successfully complete this seminar and acquire the title of FIDE School Instructor truly have the necessary pedagogic, psychological, didactical and methodology skills, it is hard to imagine that 15 hours is sufficient to acquire the necessary skills in chess. Despite the fact that it is sufficient to master only the basics, chess is still a very complex game, so the main criticism of this model is the lack of chess training. Still, a model like this has the potential of resolving this problem with further expert training for chess instructors. As a potential solution, it could provide for the more intensive inclusion of the Croatian Chess Federation in the process of professional training of chess instructors in schools. The Croatian Chess Federation, in cooperation with the schools, could organize seminars and workshops where professional chess players would provide additional training to chess teachers. Through this kind of system a large number of teachers could be trained in a short period of time for high quality chess instruction in schools.

b) Education of chess instructors at faculties in Croatia

From a study of the syllabuses of Croatian universities, it may be established that only the University of Zagreb has the possibility of training future chess instructors in schools. This is at the Faculty of Education, that is, its subsidiaries in Čakovec and Petrinja. Since 2008 there has been an elective course there entitled “Chess in Elementary School 1” dealing with the basics of chess and the methodology for teaching it, and “Chess in Elementary School 2” which deals with deepening theoretical knowledge about chess, differences in perceptions of the

movements of the pieces and space, improving memory using chess, the possibility of using computer technology for chess etc. The founders are Prof. Dr. Sc. Đuro Blažeka and Prof. Siniša Režek.

After a review of the various possibilities of educating teachers for teaching chess in elementary schools, several conclusions may be drawn. First, the main dilemma is related to the question of whether chess players should be trained to become competent for work in schools, or teachers be trained to understand the game of chess more fully. Practising chess players do not have to have excellent knowledge of chess, but their pedagogic, psychological, didactic and methodological competence is more important, and they will thereby encourage children's interest in this ancient game. It would be ideal to have as many teachers as possible who are competent in both fields, but practice has shown that there are very few of these. The other important factor is the culture of the country in which chess is practised in schools. It is impossible to copy the models of more developed countries in the Republic of Croatia, where chess is still not so popular. Therefore, as a possibility for developing the current situation, we mention the cooperation of schools and the Croatian Chess Federation, through the organization of various seminars focusing on the necessary aspects of development of teachers, the inclusion and cooperation of professional associate teachers in organizing chess teaching, and a joint analysis of the work of chess trainers.

THE METHODOLOGY OF THE EMPIRICAL RESEARCH

The aim of this research was to examine and establish how many elementary schools in Zagreb provide chess as an extracurricular activity, who is included in organizing and implementing these activities and how, and to research and establish the attitudes of instructors about the various elements of teaching chess as an extracurricular activity.

On the basis of the theoretical part of the paper, in the qualitative part of the empirical research, an attempt was made to find answers to the following research questions:

1. How may students' interest in chess be noticed?
2. What methods are used by chess instructors in chess classes?
3. Which activities in chess classes are popular with students?
4. What are the possibilities for improving the quality of chess as an extracurricular activity?
5. What are the advantages of students' playing chess that are emphasized by the chess instructors?

In order to obtain a clearer picture of the current situation related to the provision of chess as an extracurricular activity, the school curricula of Zagreb elementary

schools that are available on-line were analysed, and it was found that of 108 elementary schools, 32 offer chess as an extracurricular activity. Chess instructors were sent questionnaires asking about the structure of the participants and instructors of the extracurricular activity. Twenty-five instructors agreed to take part in the first part of the research, of whom seven later took part in the qualitative part of the research, conducted through a semi-structured interview.

The results of processing the completed questionnaires showed that the structure of participants and instructors in chess as an extracurricular activity is such that it is mostly chosen by males. According to the information given by the instructors, boys enrolled in chess account for 76% of the participant population, whilst 24% participants reported that the groups are balanced in terms of gender. The results show that the largest number of participants in chess as an extracurricular activity are from the first four years of education (76%) and 16% are from grades 5 to 8. Only two schools (8%) have an equal proportion of participants. Regarding the possibility of attending, the results show that in more than 90% of the elementary schools all interested students are accepted, and the number of participants varies from 20 to 40. The structure of instructors of chess as an extracurricular activity is such that they are 84% male. Eighty percent of the sample are permanent employees of the school, and 60% of them have no chess title at all. The other participants in the research mentioned that they have various categories of titles (from first category up to FIDE Masters). Thirty-six percent of instructors have had some form of training, whilst as many as 88% of them mentioned that they would like to attend professional training.

RESULTS AND INTERPRETATION

Ways of observing interest in chess

In the theoretical part of this paper, we mentioned that before organizing any form of extracurricular activity, it is necessary first of all to establish whether students have any interest in it. The replies to this question provided two very specific and interesting ways of observing interest. These were the replies by Participants 1 and 2, who said that they had first of all organized a school chess championship in their schools. Since a large number of students took part, it was established that interest in chess existed and the extracurricular activity was organized. Participants 3 and 4 posted an advertisement in their schools for students to express their interest in chess, after which a sufficient number of interested students came forward. Other ways were to research students' opinions and interest using a survey (P5), the activity was based on the wishes of the instructor (P6), whilst in one case one person (P7) continued running the chess group without knowing whether the interest of participants had been previously established. Whilst assessment of school staff, notices and surveys are usual methods for testing interest in founding

an extracurricular activity, organizing school competitions is a more specific and more appropriate method for establishing an interest in chess, and making it more popular.

The methods used by chess instructors

Since this was an open question, the answers varied. What all participants in the research had in common was that they allowed the students to play free games, but also used an individual approach with their students. For example: Participant 1 stated that younger students first of all played games for 10 to 15 minutes, and this was followed by teaching on the basis of exercises/problem solving, whilst the older students started with thematic exercises, and only began to play games together after that. He pointed out that the reason for this was that the younger students like to play and compete.

Individualization in terms of levels of chess

Beginners are taught etiquette and sporting behaviour from the front and individually, whilst advanced students are taught specific chess moves as needed. Participant 2 begins each lesson by checking the homework he regularly gives the students. He then works together with the students on learning subject matter, following a chess textbook, and at the end they play games or resolve problems related to a topic. Participant 3 does not teach new content from the front or by talking, but students solve thematic exercises appropriate to their chess level. He uses up-front talking exceptionally, in cases when students do not know the basic rules. In relation to beginners' groups, the responses of all participants in the research are the same, which is justified given the need for economy in teaching a large number of children. Further, Participants 3 and 7 frequently emphasized their cooperative form of work with students, where students who know more teach those who know less. Participants 4 and 6 emphasized that with beginners it is first of all necessary to reach a level where it is possible to use a chess textbook, so they initially give them easier tasks so they acquire a feeling for the movement of the pieces around the board. Participant 6 for this purpose uses a large number of sheets he has prepared himself, with suitable tasks. Participant 7 pointed out that appropriate exercises and free games are the most effective methods, because the students learn actively, and his role is to walk around from table to table, giving advice or answering their questions. He points out that teaching chess is not at all simple and that the interaction with students was constant. He also likes to use oral presentations by students as a method, whereby students show their colleagues how they resolve various problems. Participant 1 added that for more advanced groups he also organizes visits by more experienced chess players, who give talks. In the responses of the participants in the research, it is clear that they respect educational principles in their work, especially the principle of progression, where the

teacher relies on a cooperative process in the students acquiring knowledge, adjusting methods and forms of work to their level of knowledge of the content, and following the basic rules of progression (from the known to the unknown, from the near to the far, from simple to complex, and from concrete to the abstract). The principle of individualization is also present, where each student is approached individually, on the basis of their specific characteristics, needs and desires in the learning process.

The favourite activities of students in chess lessons

There were not many variations in the responses to this question. Participants 3, 5 and 6 stated that students prefer to play free games. Participants 1, 2 and 4 expanded their responses and said that students enjoy any method that includes competition. The participants' responses point us to the words of Huizinga (1992, 98), "The beginning of every competition is play, that is, an agreement according to which something must be done, within its own proper boundaries of time and space, according to fixed rules and in an orderly manner, that causes the release of tension, and that is outside of the normal course of life". Apart from just a match, this may also be a competition in solving set problems. Indeed, Participant 1 mentioned using a complex system of points for any chess activity, including solving tasks. Only Participant 7 stated that his students like solving problem tasks even more than playing a free match, because they learn much more, since it all takes place in a relaxed atmosphere. Participant 2 emphasized that students found holding simultaneous chess games very interesting. Competition is something children have an affinity for and it is a daily occurrence. It gives them a time and place to confirm and test their knowledge and skills in relation to others, gives the opportunity to see how other people use their own knowledge, receive feedback about their level of success or lack of it, practise concentration and patience, and develop a sense of respect, creativity, sporting behaviour etc... Competitions in which they demonstrate what they have learned, if they result in success, have a significant effect on the development of self-confidence, whilst defeat teaches them to accept and control negative emotions, and increases their desire for further improvement.

Therefore, from the responses to the second and third survey questions, the alignment with the individual levels and needs of the students is clear, along with the use of various forms of teaching and advancement in chess, including actually playing games of chess and resolving chess questions/problems set. These activities are often accompanied by dialogue with the teacher, whose role is to help the students and clear up any dilemmas.

The possibilities of improving the quality of teaching chess as an extracurricular activity

Participants 2, 3, 4 and 6 mentioned the problem of training chess teachers and pointed out the necessity for additional improvement of chess education programmes. Participant 6 especially emphasized the educational training of external associates who are chess professionals. He also pointed out the importance of the school's cooperation with other institutions. Participant 2 also said that schools must cooperate with chess clubs and have the support of the local community. Participant 4 advocates the inclusion of and cooperation with the competent ministry, and Participant 6 believes that the Croatian Chess Federation needs to do more to improve the position of chess in schools. The level of technical equipment at the school was also identified as a problem (P3 and P5), as well as the need to define the outcome of chess classes more clearly (P1). Participant 7 pointed out the issue of the timing of chess classes, in terms of the problem of schools that have several shifts and organizing the players into groups according to age and strengths. The participants in the research mentioned the possibility of professional training for chess teachers as a possibility for improving chess lessons and raising their quality. Participants 2, 3, 4 and 5 did not know about any form of professional training in relation to chess in schools, and believed that to be a major problem. Participant 6 mentioned the courses "Chess in Elementary School 1" and "Chess in Elementary School 2" as a form of training for students who were planning to be teachers. These courses are held at the Faculty of Education (Učiteljski fakultet) in Zagreb. Participant 7 knew about the FIDE seminars, which he had attended himself, but did not have a positive opinion of them.

The advantages of students playing chess according to the chess teachers

The participants in the research gave a large number of responses to this question, which are difficult to generalize, so they will be mentioned in order. Participant 1 believes that playing chess improves concentration, discipline, the decision-making process, and the ability to deal with stress. Participant 2 believes that chess is good for developing qualities such as: persistence, responsibility, a self-critical attitude, objectivity, correctness, respect for rules, diligence, a fighting spirit, concentration, self-control, collegiality, rational use of time etc. Participant 3 emphasised concentration and focus as the main advantages. Participant 4 pointed out improvement in concentration as an advantage of playing chess, but mentioned that chess also teaches sporting behaviour and independent decision-making, and develops algorithmic thinking. Participant 5 pointed out that chess is good because it teaches respect for one's opponent, develops self-control, encourages thinking, and through it students make good use of their free time. Participant 6 mentioned that chess teaches respect and sporting behaviour, and develops independent thought and responsible decision-making. Participant 7 emphasized as

an advantage the fact that it develops discipline and organization in students, and teaches them to accept defeat as motivation. From the analysis of the responses, several areas became clear: the development of concentration in students (P1, P2, P3 and P4), discipline and self-control (P1, P2, P3, P5 and P7), sporting behaviour and related categories, such as correctness, respect for rules, and respect for one's opponent (P2, P4, P5, P6 and P7), and responsibility and independence in decision-making (P1, P2, P4 and P6).

CONCLUSION

Chess in essence is a game and as such is something that is natural to children, their inquisitiveness and desire for competition, so therefore we propose the more significant implementation of chess in the life of schools, whether in the form of an extracurricular activity or an after-school activity. In the City of Zagreb, chess is taught in 32 elementary schools as an extracurricular activity, but that number can and should be much higher. Here we need to point out the fact that this research was limited to chess as an extracurricular activity. The project of introducing chess to schools is much wider and there are many schools in Zagreb who organize chess classes but in the form of an after-school activity. Although it would be ideal for chess to be taught as an extracurricular and not an after-school activity, primarily due to its pedagogic value, but also for practical reasons since extracurricular activities are free for students, it would be interesting to examine the scope and special characteristics of chess as an after-school activity in more detail, and compare the results.

Finally, this research showed that interest exists in teaching and developing chess as an extracurricular activity in schools and in further increasing its popularity. The need must also be emphasized to introduce better quality experts but also educationally trained teachers. Teachers of chess in schools as an extracurricular activity are aware of the great importance and the advantages that chess has for children, so at the end of this paper we emphasize once again the potential of this ancient game, but also the need for a more systematic educational approach to the implementation of the philosophy and practice of chess through chess activities in the lives of students.

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