

GAME-BASED EXERCISES THAT AID IN THE DEVELOPMENT OF STUDENTS' EMOTIONAL INTELLIGENCE WHILE LEARNING CHESS

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ABSTRACT

In 2017, the “Chess” Scientific Research Institute’s research group of psychologists performed a diagnostic experiment to determine the level and manifestations of emotional intelligence of teachers and students during the teaching and learning of the “Chess” subject. The findings of the preceding investigations were presented at the international conference “Current State and Development Trends in Chess Education,” which was held in Tsaghkadzor in 2019. The following findings were offered after summarizing the outcomes of all methods used throughout the scientific experiment: 1. Chess teachers have a high level of emotional awareness, whereas children may distinguish just pleasure, sadness, and anger as fundamental emotions. 2. Low indicators of the teacher’s empathy and emotional management affect the motivation of 3rd and 4th-grade students to succeed in chess lessons, as well as the negative trend of the position of receiving praise from the teacher, as a result of which the indicator of the manifestation of a favorable position towards the chess teacher decreases. 3. Regardless of the teacher’s positive attitude toward the students, if the teacher’s emotional management and control signs are poor throughout the learning process, the student’s emotional attitude toward their peers and their participation in the chess class diminishes. Based on the analysis of the diagnostic experiment findings, “Chess” Scientific Research Institute psychologists created and tested various game exercises to develop emotional intelligence components in secondary school learners.

Keywords: *emotional intelligence, primary school age, game exercises, chess, Chess teacher, emotional management, control signs, learning process, Scientific Research Institute.*

INTRODUCTION

In 2011, chess was introduced into the education system of the Republic of Armenia as an educational subject. The subject of chess at school aims to develop students' logical thinking, analytical abilities, quick orientation under challenging situations, self-expression, attention, imagination, willpower, determination, and competitive qualities. Chess entered the education system as an academic subject aimed at developing the personality of schoolchildren and increasing their intellectual potential.

The group of psychologists of the "Chess" Research Institute of Khachatur Abovian Armenian State Pedagogical University carries out diagnostic and formative scientific experiments. In the course of diagnostic scientific experiments, an attempt is made to reveal the educational, social and cognitive value of chess as an educational subject. Based on the summaries of the results of these scientific experiments, we develop developmental research projects in which the developmental elements of chess are applied in the field of education.

Emotional intelligence is critical for an individual's personal growth in a social setting. At the turn of the twentieth century, the idea of intelligence was primarily cognitive in character and was fast evolving. IQ tests were introduced during the period, which tested mostly verbal and logical intelligence, while emotions were investigated independently from intellect. However, the researchers were attempting to determine if emotional reactions or their physiological components appeared earlier. Even at the time, they attempted to establish links between cognitive and emotional processes (Mintseva A.A., 2016).

To have a better understanding of the nature of emotional intelligence, let us first define emotion and intelligence.

Emotion is defined as follows in the psychological dictionary: "Emotion (Latin: *emovere*, to excite, motivate) is a unique class of mental processes and states associated with instincts, desires, motives, and conveyed in the form of immediate feelings (pleasure, fear, joy, and so on)" (Meshcheryakov B.G., Zinchenko V.P., 2002).

C. Izard describes emotion as a felt-like sensation that drives, organizes, and guides perception, thoughts, and actions. The author observes that emotion mobilizes energy, which in certain situations is seen by the subject as a tendency to do an action, and that emotion also guides the individual's mental and physical activities (Izard K.E., 1999).

Emotions, according to R. Nemov, are a unique class of psychological, subjective states that are expressed in the form of direct experiences: pleasant and unpleasant

sensations, human attitudes toward other people and the world, and the course and outcomes of practical actions. Emotions mentioned by the author include mood, feelings, affect, passion, and tension. He considers them “pure” feelings (Nemov R.S., 2003).

Emotions, as we all know, are quite different.

E. Ilyin identified three major types of emotions, each of which comprises a variety of emotions. They are as follows:

1. expectancy and foreboding feelings (anxiety, alarm, dread, despair),
2. contentment and pleasure emotions (sufficiency, happiness),
3. frustration emotions (hurt, disappointment, regret, anger, rage, sadness, hopelessness, depression, longing, grief) (Ilyin E. P., 2001).

According to M. Schneider, understanding the substance of the idea of “emotional intelligence” and its structure requires an examination of diverse definitions of the word “intelligence.” The term “intelligence” refers to a cognitive trait associated with information processing. In Latin, “intellectus” means “thought, intelligence, understanding.” According to Wikipedia, intelligence is the capacity to think the ability to actualize the abstract, and it encompasses functions such as comparison, abstraction, idea creation, judgments, and conclusions (Schneider M.I., 2016). M. Schneider defines “emotional intelligence” as the ability to recognize and control one’s own emotions as well as the emotions of others (Schneider M.I., 2016).

In his “Psychological Dictionary,” R. Nemov defines intelligence as the sum of a person’s mental abilities, which determines the capacity to do various sorts of actions. The author defines intelligence broadly as the ability to assimilate, reproduce, and apply knowledge in meaningful ways, to comprehend clear and abstract thinking, and to make connections between ideas and objects (Nemov R.S., 2007).

Emotional intelligence, according to I. Andreyeva reflects the inner world and its links to a person’s behaviour and relationship with reality. The author observes that emotional intelligence does not include broad concepts about oneself and others. It emphasizes detecting one’s own and other’s emotional states to solve issues and manage behaviour (Andreeva I.N.,2011).

According to A. Degtyaryev’s emotional intelligence is a structure consisting of abilities, which include:

- expression and identification of emotions,
- emotion regulation
- application of emotional information in thinking and action.

Each sort of ability, according to the author, is made up of a number of components.

There are two parts to the capacity to recognize and express emotions. One is directed at its own feelings, while the other is directed at the emotions of others. The first component consists of verbal and nonverbal subcomponents, whereas the second consists of nonverbal perception and experience. The capacity to manage emotions is divided into two parts: controlling one's own emotions and controlling the emotions of others. The capacity to think and act with emotions involves the following components: Planning flexibility, creative thinking, focused attention, and motivation (Degtyarev A.V., 2012).

N. Hall distinguishes the following components of emotional intelligence:

1. Emotional awareness, which involves being able to perceive emotions in people's mental and physical comparable states, understanding and properly expressing people's emotions, and distinguishing between correct (sincere) and incorrect (false) emotions.

2. The ability to convey concepts through emotions, which includes the ability to modify thinking depending on related feelings, to evoke emotions to assist judgment and memory, to utilize mood swings to assess a point of view, and to solve issues using emotional states.

3. Emotional understanding, which includes the ability to grasp the links between different emotions, the origins and effects of emotions, complicated emotions, emotional contradictions, and opposing moods.

4. Emotional management, which involves being open to both pleasant and unpleasant feelings, the capacity to regulate and influence emotions, the ability to eliminate any emotional state, and the ability to govern one's own and other's emotions (Hall N., 2007).

According to G. Mayer, "logical processes are detected in emotional thinking (interpretation, objectification, categorization apparatus activity), but in emotional thinking acts, the cognitive process is put to the background, and attention is concentrated on the practical aim (Mayer G., 1981).

Bar-On's model is one of the theoretical foundations of emotional intelligence, which was initially developed to evaluate different areas of this structure. Bar-On distinguishes five components of emotional intelligence:

1. to understand, recognize and express emotions and feelings,
2. to understand other people's emotions,
3. to manage and control emotions,
4. to solve personal and interpersonal problems,
5. ability to generate positive emotions and be motivated (Bar-On, R. 2005).

D. Lucine introduced his model, which is based on already existing models of emotional intelligence. He defines emotional intelligence as the capacity to comprehend and regulate one's own emotions as well as the emotions of others.

Understanding and controlling emotions, according to the author, entails

- identify emotions, i.e. affirm the presence of emotional experiences in oneself and others

- identify between emotions that is, recognize which emotion he or she is feeling and express it verbally

- comprehend the causes and consequences of that emotion

The author defines emotional management as follows:

- to manage the strength of emotions, initially and foremost, to lessen excessively strong feelings,

- to control emotional expressiveness,

- to be able to generate this or that emotion at will, if necessary.

The author talks about both intrapersonal and interpersonal emotional intelligence, which are the ability to understand and manage one's own and others' emotions, respectively (Lucin D.V., 2004). He also regards emotional intelligence as a psychological structure composed of personal qualities and cognitive abilities, and he believes that it develops throughout the course of a person's life as a result of circumstances influencing one's level and individual characteristics. Among these characteristics are cognitive capacities (the speed and precision with which emotional information is processed), views about emotions (as a value, as a source of vital information about oneself and others), and emotional qualities (emotional stability, emotional sensitivity, etc.) (Lucin, D.V, 2004).

Emotional intelligence, according to D. Goleman, is the ability to recognize and name emotional states, manage those states, control emotions, enter into emotional states related to improvement and success motivation, read, be sensitive to and penetrate other people's emotions, and have satisfying interpersonal relationships. The capacity to stay connected and active. These talents are classified by D. Goleman into five categories: self-awareness, emotion management, empathy, self-promotion, and social skills (Goleman, D., 2009).

Thus, many authors have addressed the issue of emotional intelligence, with the majority of them viewing emotional intelligence as a structure comprised of personal characteristics and cognitive abilities, the components of which are the understanding, awareness, control, self-stimulation, social skills, and emotional stability of one's own and others' emotions.

There are many works that provide new and contrasted evidence about the value of chess as an educational tool. Thus, Chess not only improves cognitive capacities but also influences socio-personal development and moulds the coping and problem-solving

capacity in the children and adolescents who play chess. With the data provided by this work, one could conclude that chess is not reaching a collective for which it could be particularly beneficial, as it is predominantly chosen by those who are already well-adapted to school. Doubtless, an important challenge is to motivate maladapted students to practice a game that requires them to remain seated and to have a high level of concentration, and which can, nonetheless, become thrilling. More psychoeducational research and didactic innovation are needed to bring this effective educational tool closer to potential beneficiaries (Aciego, R., Garcia L., Betancourt, M., 2012).

The report begins by providing a brief account of the background and impetus for the present study of chess development in Aberdeen's primary schools, followed by reviews of the impact of chess play on children's literacy and learning in the school environment and theories of social capital. (Forrest, D., Davidson, I., Shucksmith, J., & Glendinning, T., 2005).

That specific chess skill is specific has been nicely illustrated in studies with children. Chi, as well as Schneider, Gruber, Gold and Opwis, examined the role of chess expertise in memory recall in both children and adults, and both within and outside the domain of expertise. They found that chess-playing children vastly outperformed non-playing adults in the recall of briefly presented chess positions but that, in all cases, adults were much better at remembering lists of digits. This was taken as evidence that chess skill shows little transfer to other domains and certainly not to the memory of digits. Thus, although there is still some debate about the question of transfer of skills, the "null hypothesis" for many psychologists, educationalists, and policymakers in education, and also the default position taken in this chapter, is that transfer is minimal. This is only a hypothesis, open to refutation by the empirical data. The first source of evidence is to consider whether the chess population as a group differs from the general population (Gobet F., & Simon, H. A., 2000).

"Combining the research results so far, researchers conclude that exposure to chess instruction is associated with positive results in mathematics performance in the general population of primary and middle school students in the short term but not in the long term." "Didactic methods should incorporate those features that chess shares with mathematics." (Sala G, Foley JP and Gobet F. (2017).

The study was conducted in Romania, and during our research, we were interested in finding out the parents' perspectives about the way chess influences the development of their children, in finding out if there are any differences in the parents' opinions depending on whether they know how to play chess or not, and we were interesting in gathering information about the profile of the children's parents who play chess. The results of the research showed that parents are of the opinion that chess helps children develop their

cognitive abilities, their character and their competitive spirit (Nanu, CC, Coman, C, Bularca, MC, 2023).

METHODS AND METHODOLOGY

In 2017, the “Chess” Scientific Research Institute’s research group of psychologists performed a diagnostic experiment to determine the level and manifestations of emotional intelligence of both teachers and students during the teaching and learning of the “Chess” subject (Sargsyan A., Khachatryan A., 2019).

The findings of the preceding investigations were presented at the international conference “Current State and Development Trends in Chess Education,” which was held in Tsaghkadzor in 2019. The following findings were offered after summarizing the outcomes of all methods used throughout the scientific experiment:

1. Chess teachers have a high level of emotional awareness, whereas children may distinguish just pleasure, sadness, and anger as fundamental emotions.

2. Low indicators of the teacher’s empathy and emotional management affect the motivation of 3rd and 4th-grade students to succeed in chess lessons, as well as the negative trend of the position of receiving praise from the teacher, as a result of which the indicator of the manifestation of a positive position towards the chess teacher decreases.

3. Regardless of the teacher’s positive attitude toward the students, if the teacher’s emotional management and control signs are poor throughout the learning process, both the students’ emotional attitude toward their peers and their participation in the chess class diminish (Sargsyan A., Khachatryan A., 2019).

RESULTS AND DISCUSSION

Based on the analysis of the diagnostic experiment findings, “Chess” Scientific Research Institute psychologists created and tested a variety of game exercises aimed at developing emotional intelligence components in secondary school learners.

The following issues arise from the goals of the development program:

- Formation of the student’s ability to recognize and identify his/her and others’ emotions in chess lessons.
- Forming a positive attitude towards the subject of chess through game exercises under the conditions of emotion training.
- Continuous provision of a positive emotional connection by the teacher during the lesson increases the expressiveness of the students’ emotions.
- Application of didactic materials containing elements of the psychological

significance of emotions during the teaching of chess.

The novelty of the research work is the creation of a package of games and exercises that increase the level of emotional intelligence of junior schoolchildren.

It is also an additional tool for the in-depth assimilation of chess knowledge and contributes to the development of students' self-control the ability to understand their own and the other person's emotions.

Several game exercises are included below that contribute to the development of emotional intelligence components in secondary school pupils during the Chess subject. They were tested and implemented in Yerevan schools N155 and N168 during the 2018-2019 academic year.

RESULT

GAME 1. "PLAY YOURSELF."

The goal of the game. To form a positive attitude towards the subject of chess and to give students an opportunity for emotional discharge during the lesson.

The required materials. Black and white paper crowns on which chess pieces are depicted.

Duration and procedure. The game exercise can be carried out in 1 lesson a week. The chess teacher distributes black and white papers and aprons with chess pieces to the students. Younger schoolchildren make a mat-game board using paper and stand in their places. The game begins. The game is played with the help of a chess teacher, following whose instructions the students will achieve victory. During the game, a psychologist takes part, approaches each student and asks them to describe their emotions while performing that step. When applying the game exercise, the students should pop in their positions on the board.

Instruction: Dear students, make the game board and stand in the necessary formation to start the game. Describe your emotions as you take each step (Sargsyan A., Iskandaryan N., 2020).

GAME 2. "CHESS PIECES ALSO HAVE EMOTIONS."

The goal of the game. Emphasize the expression of positive emotions during the lesson.

Duration and procedure. When completing exercises on the board, the teacher employs this psycho-pedagogical strategy. When teaching chess movements, he or she can "bring to life" the pieces by describing their emotions and emphasizing the positive. At the emotional level, the teacher must "justify" a specific movement of the piece.

Instruction: Dear students, please pay attention to the emotions of the pieces and memorize them.

GAME 3. “CHESS MASTERS”.

The purpose of the game. To arouse interest in chess as an educational subject and game among younger schoolchildren.

The required materials. Slides, videos, movies.

Duration and procedure. This method can be used 4-5 times per academic semester. In the first stage, the teacher prepares films and videos in which each chess game of the chess grandmasters will be shown. During the video screening, not only the reasoning behind the execution of that chess move is interpreted, but also the emotions of the chess players at that moment. As a culminating ending, one can describe the emotions expressing victory, emphasizing the pleasantness of experiencing positive emotions. In the second stage, the students themselves embody the persons who have become authorities. In this way, students are given the opportunity to experience the emotions of a winner in practice. Awards and medals are awarded at the end.

Instruction: Dear students, watch the video and try to name the emotions that you think the grandmasters are experiencing. Then, while playing chess, try to relive those emotions yourself (Sargsyan A., Iskandaryan N., 2020).

GAME 4. “POSITIVE QUALITIES OF CHESS PIECES”.

The purpose of the game. The formation of associative links between positive quality and emotion in younger schoolchildren.

Duration and procedure. The formation of associative links between positive quality and emotion in younger schoolchildren.

Instruction: Dear students, when you hear the name of the piece, say the first emotion that comes to your mind. Try not to think too long and answer at once (Sargsyan A., Iskandaryan N., 2020).

GAME 5. “THE TEACHER SPEAKS WITHOUT WORDS.”

The purpose of the game. To form the skill of showing the emotions of the teacher teaching the subject of chess.

The required materials. Faces expressing different emotions are made of cardboard.

Duration and procedure. This method can be used by the teacher during the examination of questions and homework. Based on the answers given by the students, the chess teacher shows no emotion. Younger students must understand their teacher's emotion, name it out loud, and express an opinion about why the teacher is showing that particular emotion.

Instruction: Dear students, now I will not talk, and instead, I will show faces that express my emotions. Be careful to name and describe my emotions correctly (Sargsyan A., Iskandaryan N., 2020).

GAME 6. “VOCABULARY OF EMOTIONS”.

The purpose of the game. To learn to recognize emotions and give them the correct names within the framework of the chess subject.

The required materials. A pre-developed or invented story involving chess pieces based on the subject of chess.

Duration and procedure. The methodology is applied in the second phase of the lesson. The teacher reads the prepared story, the main characters of which are chess pieces. When developing the story, emotions and their manifold manifestations are emphasized. The chess teacher, after stopping the reading of the story, asks the students to describe the emotions experienced by the characters in the story. The story is built on the principle of encouragement and praise, building on the positive. Below is the story we developed. The white (black) chess pieces had gone for a walk in the forest. They were very happy and joyful as they walked together in that wonderful green forest, told jokes, and played games. Suddenly, the king noticed that they were surrounded by black (white) pieces. The king, discussing their moves with the other pieces, quickly arranged the pieces in the necessary positions. Suddenly, the horse and two soldiers notice that the king is in a checkered state and quickly come to his aid. They achieve the necessary result by walking proudly, clearly and decisively. Thus, each piece escapes the blockade by following the king's instructions and making the right moves. All pieces manage to win. They approach a cabin where they celebrate their small success. It is important here that the chess teacher alternates the positions of the black and white pieces while telling the story.

Instruction: Dear students, please listen carefully to the story. Please describe the emotions of the piece and comment on them (Sargsyan A., Iskandaryan N., 2020).

CONCLUSIONS

Thus, we encourage the use of instructional materials that emphasize the psychological impact of emotions while teaching chess.

We are certain that the Chess teacher's consistent providing of a positive emotional connection throughout the lesson will contribute to the development of the student's capacity to detect and identify emotions, as well as the development of a positive attitude toward the subject.

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