

**CHESS GAME AND DECISION-MAKING IN TEACHERS OF BASIC EDUCATION  
(JUAN PABLO SEGUNDO SCHOOL, LOS LAGOS REGION-CHILE)**

**JOGO DE XADREZ E TOMADA DE DECISÕES EM PROFESSORES DE EDUCAÇÃO  
BÁSICA (ESCOLA JUAN PABLO SEGUNDO, REGIÃO DE LOS LAGOS-CHILE)**

**JUEGO DEL AJEDREZ Y LA TOMA DE DECISIONES EN LOS DOCENTES DE  
EDUCACIÓN BÁSICA (ESCUELA JUAN PABLO SEGUNDO, REGIÓN DE LOS  
LAGOS-CHILE)**

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**ABSTRACT:** The objective of this article is to determine the incidence of the game of chess in the application of decision-making by the teachers of the Juan Pablo Segundo School, region of Los Lagos-Chile. The quantitative approach was used with a type of descriptive research and non-experimental design. The population made up of 65 teachers who work in the aforementioned institution; The survey technique was used and as an instrument a questioning of closed questions with two alternative answers, it was validated through the judgment of experts and the reliability with Richardson's Kuder technique. The results showed that teachers know the game of chess but lack training in the application of decision-making. The study made it possible to establish the importance of chess and its use in decision-making, since it strengthens knowledge and enhances the development of capacities in physical and mental development in basic education teachers.

**KEYWORDS:** Play. Chess. Decision making. Teacher.

**RESUMO:** O objetivo deste artigo é determinar a incidência do jogo de xadrez na aplicação da tomada de decisão pelos professores da Escola Juan Pablo Segundo, região de Los Lagos-Chile. A abordagem quantitativa foi utilizada com um tipo de pesquisa descritiva e não experimental. A população é composta por 65 professores que atuam na referida instituição; foi utilizada a técnica de survey e, como instrumento, foi validado um questionamento de questões fechadas com duas alternativas de resposta por meio do julgamento de especialistas e da confiabilidade com a técnica Kuder de Richardson. Os resultados mostraram que os professores conhecem o jogo de xadrez, mas carecem de treinamento na aplicação da tomada de decisão. O estudo permitiu estabelecer a importância do xadrez e sua utilização na

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*tomada de decisões, uma vez que fortalece conhecimentos e potencializa o desenvolvimento de capacidades de desenvolvimento físico-mental em professores da educação básica.*

**PALAVRAS-CHAVE:** *Jogo. Xadrez. Tomada de decisão. Professor.*

**RESUMEN:** *El presente artículo tiene como objetivo determinar la incidencia del juego del ajedrez en la aplicación de la toma de decisiones de los docentes de la Escuela Juan Pablo Segundo, región de los Lagos-Chile. Se utilizó el enfoque cuantitativo con un tipo de investigación descriptiva y diseño no experimental. La población constituida por 65 docentes que laboran en la institución antes referida; se empleó la técnica de la encuesta y como instrumento un cuestionario de preguntas cerradas con dos alternativas de respuestas, el mismo fue validado a través del juicio de expertos y la confiabilidad con la técnica de Kuder de Richardson. Los resultados demostraron que los docentes conocen el juego del ajedrez, pero les falta capacitación en la aplicación de la toma de decisiones. El estudio permitió establecer la importancia del ajedrez y su utilización en la toma de decisiones, dado que fortalece los conocimientos y potencia el desarrollo de capacidades en el desarrollo físico mental en los docentes de educación básica.*

**PALABRAS CLAVE:** *Juego. Ajedrez. Toma de decisiones. Docente.*

## Introduction

The man has continually investigated directions and experiences, at a global level, with the purpose of educating himself, giving education a fundamental relevance in the development of people, the community and society. Thus, the universe is transformed and changes towards proactive attitudes in the establishment of new didactic approaches towards the exploration of an integration of quality knowledge.

Hence, the game symbolizes a viable option in the lives of individuals, since it is part of recreation, leisure, imagination and joy in which feelings-emotions can be expressed, but it is also part of a meaningful learning in the development of thoughts. In addition, they access exploration, inquiry, creation of their own styles and interaction with other individuals (GAME, 2015).

According to this, Montero (2017) defines play as a free, voluntary, synergistic, recreational action in which people make sense of the activities they carry out. Also, it generates spontaneous participation in the stimulation of disciplines and improvement of behavior in decision-making in the self-realization of self-esteem and personality development.

The educational potential of games is framed in the learning experiences where the subjects intervene in an integral way in which the dynamic and competitive body movement

is put into practice, accessing the individual to be, know, develop and sympathize with the environment. As well as it focuses on the progress of the human being, not only in the dexterity in movement, but also the ability of him as a living being and being of his culture. Therefore, daily games, excursions and rounds are authentic training situations, which must be offered to people their cognitive and recreational capacities (PEREIRA, 2018).

From this perspective, chess is shown as a game that manages to crystallize into a non-formal educational instrument that can support, especially, the teacher's practice, where pedagogical work is enriched, strengthening critical thinking and handling situations in learning. Together it leads to the behavior of mutual cooperation (between pieces), tranquility, strengthening of values, imagination, strengthening the development of intelligence, deepening attention to things, recreation, research and interaction with others (ASTETE, 2017).

Soutullo (2012) argues that chess as a tool that induces actions and the organization of an unprecedented educational experience, a new exercise in the construction of knowledge and, in turn, constitutes an experience that promotes the learning of the game as a means for recreation, healthy competition, social interaction and decision-making among a group of people, since it provides the fundamental tools of cognitive abilities and skills in the individual.

Therefore, decision-making, according to León and González (2020), “an essential process for the proper functioning of an organization; it is considered an important part of the management of any organization” (p. 3, our translation). It means that it represents a necessary procedure that allows the effective management of an institution; representing a great responsibility between each of the members of an organization and requiring that different ways or alternatives be analyzed to achieve the objectives of any organization.

Decision-making symbolizes the systematic action of informal reasoning marked by a number of sub-decisions that are intertwined with each other and that lead to the shared choice of opinions between the parties. In other words, they level the characteristics and compliance to carry out effectively and the game of chess represents a valuable tool for individuals to make sound decisions, fully responsible and committed.

At the level of school establishments, teachers must implement decision-making and, in turn, resort to consent with the participation of all members of the school; thus, achieving that they all feel committed to making the right decisions inside and outside the institution; highlighting that the internal environment is made up of the characteristics of the personnel, projects, programs, goals, strategies and institutional processes.

Hence, the game of chess applied in decision-making is considered an educational innovation, which is why it strengthens educators to confront with enough success the problems found in the educational environment and that can overcome any crisis that stirring up in the context. The relevance of chess strengthens the critical thinking of the teacher and therefore, will provide actions for student improvement and therefore, the integral development of students (ACOSTA; BALDIVIÁN, 2018).

Based on the above, in Chile the definitive incorporation of chess into the educational system has represented a constant challenge, because at the school and secondary level it has been promoted as a valuable tool for the teaching and learning process; strengthening its cultural knowledge and the importance of being applied in conflict situations and in decision-making in problems, both internal and external to the educational community (CENTRO DE ESTUDIOS MINEDUC, 2018).

However, despite the fact that the game of chess has been officially implemented by the Chilean Ministry of Education, it is observed that some teachers of Basic Education, in the Los Lagos region, specifically in the Juan Pablo Segundo School, through Non-formal interviews, carried out by the zoom platform, teachers stated that they use the game of chess in decision-making, while others responded that they know the game and have applied it in the mathematics subject to reinforce the logical thinking of the students.

In fact, teachers lack the application of the game of chess in decision-making, which causes the lack of resolution of conflictive situations between co-workers, demotivation of educators in the face of academic and administrative problems that arise in the Workplace. Likewise, the consequences are given by the lack of formation in teaching professionals in the use of pedagogical tools, in this case the game of chess, as a dynamic process of actions conducive to strengthening their critical thinking.

Given the situation described, the concern arises to ask the following question: how does the game of chess affect the application of decision-making by the teachers of the Juan Pablo Segundo School, Los Lagos region-Chile? The study is relevant because it seeks to strengthen the abilities and capacities of teachers in terms of assuming adverse problematic situations in search of correct decisions.

### **Chess game. Epistemic gaze**

The game represents a voluntary action that is carried out within certain established terms of time and term, according to the established rules. In addition, it seeks to strengthen

intelligence, the demonstration in obtaining both individual and collective results to achieve proposed objectives (MATOS *et al.*, 2018).

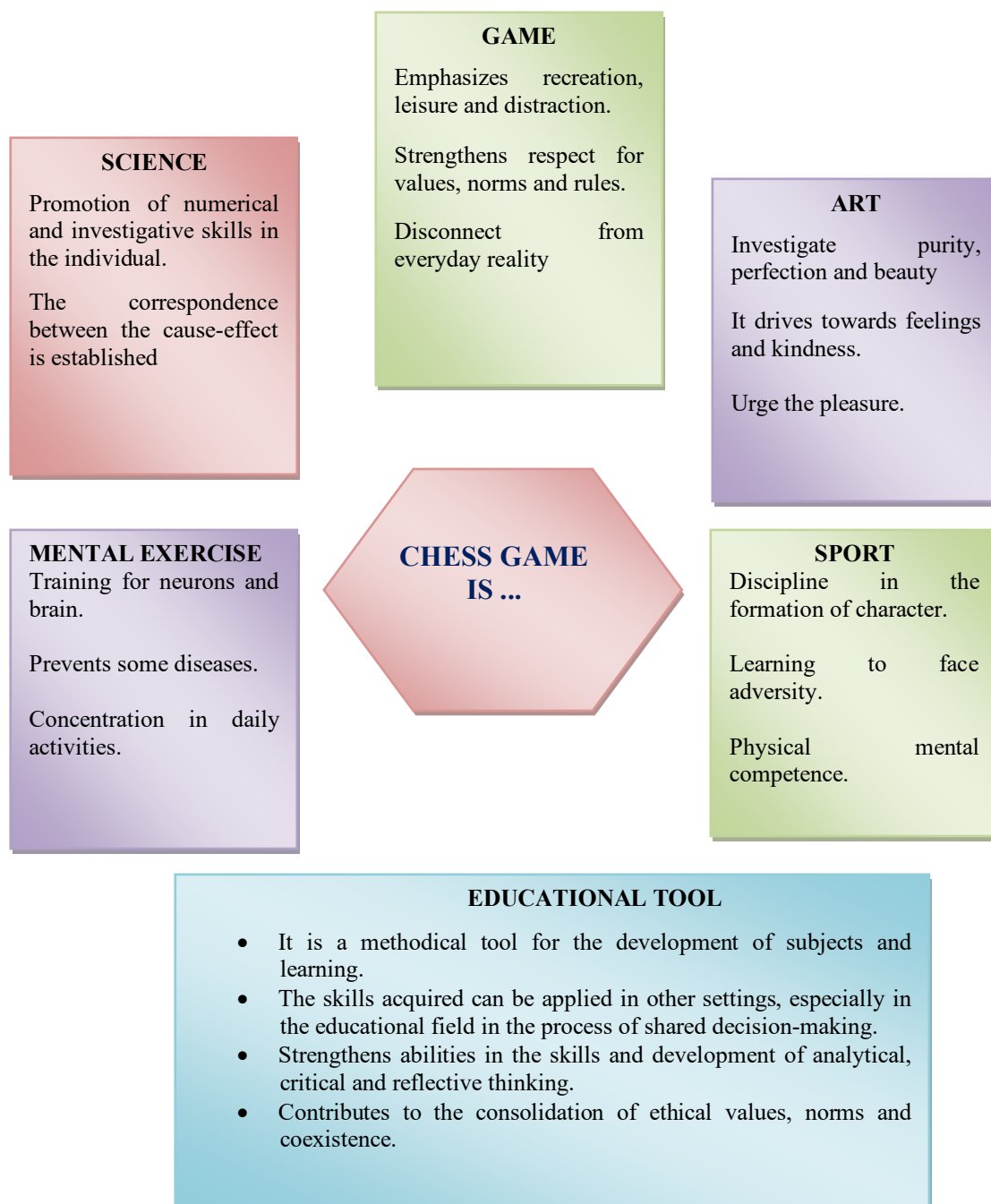
For its part, the game of chess, according to Maceira (2012), “board game, from Chaturanga (from Sanskrit four limbs), which was practiced in India in the 6th century. It takes place on a square board with 64 squares (8 x 8), alternating its colors between light and dark” (p. 56, our translation). That is to say, it is a game in which two people take part and each one has a certain time in which to execute a move and the game costs 16 pieces. These pieces are identified by two colors, dark and light, in which each piece has a different function and evaluation.

Sandoval (2019) states that chess “is of Arab origin and is possibly the most accepted due to its similarity in: rules, structure, pieces; similar to those of current chess, in addition to having possibly distributed throughout the West” (p.7, our translation). Chess is not found as a game of chance, but is immersed in dissimilar qualities and strategies, it symbolizes a very complicated game; requiring certain abilities, skills and abilities in the individual when performing tactical movements.

Similarly, Amigó and Serra, cited by Paniagua (2017) state that "chess provides multiple benefits related to the development of aspects such as patience, thinking before acting, respect for others and the application of other areas" (p. 18, our translation). Chess contributes to the improvement of attitudes in individuals; influencing scientific-critical thinking in terms of strengthening intelligence in people's daily actions, specifically, when making decisions in conflictive situations.

In chess it is framed in the approaches of: (a) chess as a game because it facilitates entertainment and recreation for the subjects who play it, causing the mind to separate itself from daily conflicts; (b) chess as an art since it fosters competences, abilities and skills in human expression; (c) chess as a sport because it symbolizes a physical-intellectual action where more energy is used than other sports disciplines; (d) chess as a science focuses on the search to investigate, express and achieve the appropriate methodology to obtain success and (e) chess as a mental exercise, represents a brain training that, practiced daily, can enhance people's knowledge (FERNÁNDEZ, 2008). Chess approaches are summarized in Figure 1.

**Figure 1- Chess approaches**



Source: adaptation to Fernández's proposal (2008)

Based on the above, chess is a valuable tool that accesses the individual to enhance knowledge, attitudes, abilities, skills, imagination, art, science and analysis, which induces basic education teachers to promote timely decision-making and shared with each of the members of the school establishments, achieving the organization of proactive actions in order to improve interpersonal relationships, conflict mediation, daily problems and therefore the pedagogical development in a more assertive way.

Therefore, there are elements that are required in the application of chess in decision-making, among them: (1) an element of an educational order because it is oriented to the educational organization in that it instructs in one's own thinking, induces analysis difficulties depending on the capacities of knowing and doing; (2) element of psychological order, which is why it studies the intellectual aspects in which retentiveness, abstraction, exploitation of concepts, stimulation and the propensity to indulge through the pleasure of things come into play, and (3) element of order Sociological strengthens interpersonal relationships, decision-making, consolidates thinking, behavior and the regulations that must be followed in an organization (FERNÁNDEZ, 2008).

### **Decision making**

In situations individuals are forced to select opinions and many of them have a great hierarchy in achieving personal objectives. In the vast majority of educational organizations, the decision-making process is paramount or essential for its productivity. According to Daft (2016) it specifies “organizational decision-making formally as the process of identifying and solving problems” (p. 446, our translation). In other words, it represents the matter, in a formal way, of balancing, strengthening and identifying the resolution of conflicts that occur in a given organization.

Therefore, decision-making is framed in the option of selecting various activities in order to optimize the functions of workers in the institution. These decisions must influence the achievement of goals and objectives in order to improve the work decisions that are made in it. In addition, it contributes to fostering relationships, harmony, belonging to the work team, group coherence, efficiency and effectiveness in the organizational climate.

In this vein, Certo (2014) defines decision-making as “the decision that is made between two or more available alternatives” (p. 17, our translation). This means that, when planning, the individual must choose the best proposal to achieve the objective. Therefore, the teacher must make decisions, whether programmed or unscheduled, but in turn must resort to consensus, counting on the participation of all the management personnel of the institution, thus achieving that they commit to the decision. As it must also consider the environmental factors that may influence decision-making, whether they are internal and external factors.

The power to make decisions is determined by the degree of responsibility that an official possesses or by the delegation of authority that he has to try not to confuse the levels of decision-making. Every decision requires the study of different factors or elements that

intervene at the time it occurs. It is one of the most relevant activities that managers have in a school. The organization, the operation of the processes and the institutional mission will depend on the optimization of the joint selection of decisions.

Hence, the game of chess allows to enhance decision-making, according to Fernández (2008) states “in addition to saying what move to make and what plan to adopt, practical decisions must also be made about how to manage time and whether it is preferable to use the institution of trying to calculate each variant of the game” (p. 109). That is to say, chess agrees to promote in the individual the ability to enhance knowledge to face any problem that may arise at a certain time, especially in the educational field when educators have to make decisions in daily conflictive situations that arise in pedagogical and administrative praxis.

## Methodology

The study was framed in the quantitative approach, which is why they were extracted from immediate testimonies of reality. In this sense, Arias (2016), states that: "depending on the quantitative model, it is a level of research referred to the degree and depth that addresses a phenomenon or object of study to measure it according to the approach used by the researcher" (p. 21, our translation). The author reflects the breadth and depth of investigative knowledge; therefore, he seeks to measure all the aspects that are located in the object of study, in order to describe, analyze and interpret them.

The design focused on a non-experimental study, according to Supo (2014) “in non-experimental research the scientist does not have direct control over the independent variables and their manifestations have already occurred or because they are inherently non-manipulable” (p. 90, our translation). That is, the facts are observed directly from the reality under study.

The population made up of sixty-five (65) teachers who work at the Juan Pablo Segundo School, Los Lagos-Chile region, where the entirety of it was taken as a sample, since the population census sampling technique was used because it is non-probabilistic and intentional, which is why it depends on the decision of the researcher, the objectives set and the intention to measure, in this case, the game of chess and decision-making.

The technique of obtaining data can observe the reality or scientific procedure of the dissimilar tools that the researcher has to perceive reality and thus be able to obtain the information that is needed for the development of the study. Therefore, the survey technique was used, according to Arias (2016) expresses that "it is a strategy (oral or written) whose



purpose is to obtain information about a group or sample of individuals" (p. 32, our translation). It means that the survey is a tactic, which can be written or verbal, that aims to obtain valuable information from a particular situation.

The instrument used was a questionnaire, Hernández, Fernandez and Baptista (2014) state that "a questionnaire consists of a set of questions regarding one or more variables to be measured" (p. 217, our translation). Indeed, it represents the formulation of questions, in this case, they are constructed in a closed manner, since they contain response alternatives that have been defined in advance; Hence, two answer possibilities were used, viz.; Yes and no.

The validation of the instrument was carried out through the judgment of experts: one (01) in methodology and two (02) teachers with knowledge of the game of chess. For reliability, the Kuder and Richardson reliability method (formula KR 20) was used, which is related to the fidelity and accuracy of the instrument, where high reliability was obtained and being adequate to be applied to the sample. From there, once the instrument was applied to the study subjects, the frequencies and percentages were established, which were represented through the use of graphics using the Excel 2010 program, and descriptive statistics were used for the interpretation of results.

It is important to note, in order to obtain the information, the instrument and the instructions for its respective filling were sent by email. Previously, meetings were held, via zoom, with the teachers of the Juan Pablo Segundo School in which the purposes of the research and their consent, in writing, to participate in it were presented; approval was obtained from all those involved in supplying the data requested in the survey.

## **Results**

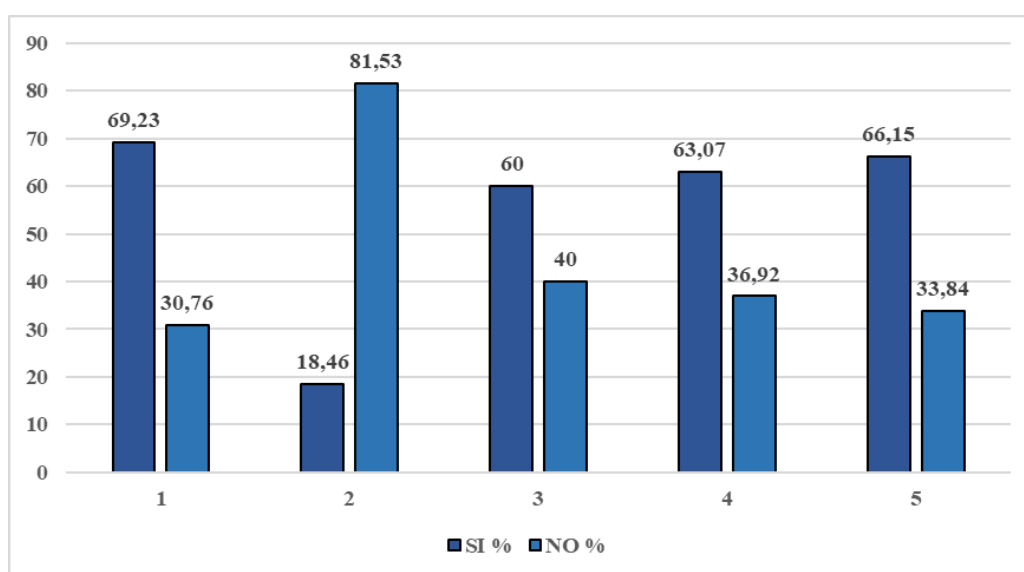
The results obtained with the application of the survey through the use of a closed questionnaire with dichotomous questions: Yes and No. Descriptive statistics were used for data analysis, using frequencies and percentages; being represented by means of graphics as a way of visualizing their interpretation. They are listed below:

The variable related to the game of chess for the knowledge and training indicators was obtained in question 1, a high percentage of the respondents answered in the category If they know the game of chess in the educational field. However, in question 2, a significant percentage answered in the alternative They have not received formation on the application of the game of chess in educational decision-making. Regarding questions 3, 4 and 5, it is observed that most teachers answered in the category If knowledge about chess accesses the

application of decision-making, the promotion of socialization between educational and allows the systematization of decision-making (As seen in figure 2).

The aforementioned results lead to infer that teaching professionals handle knowledge about the game of chess and the relevance of its use when deciding conflict situations but lack training in the application as a tool in decision-making. This could possibly be due to the fact that managers lack to promote the game of chess as an alternative to enhance the thinking, imagination and creativity of teachers.

**Figure 2** – Data related to the variable chess game



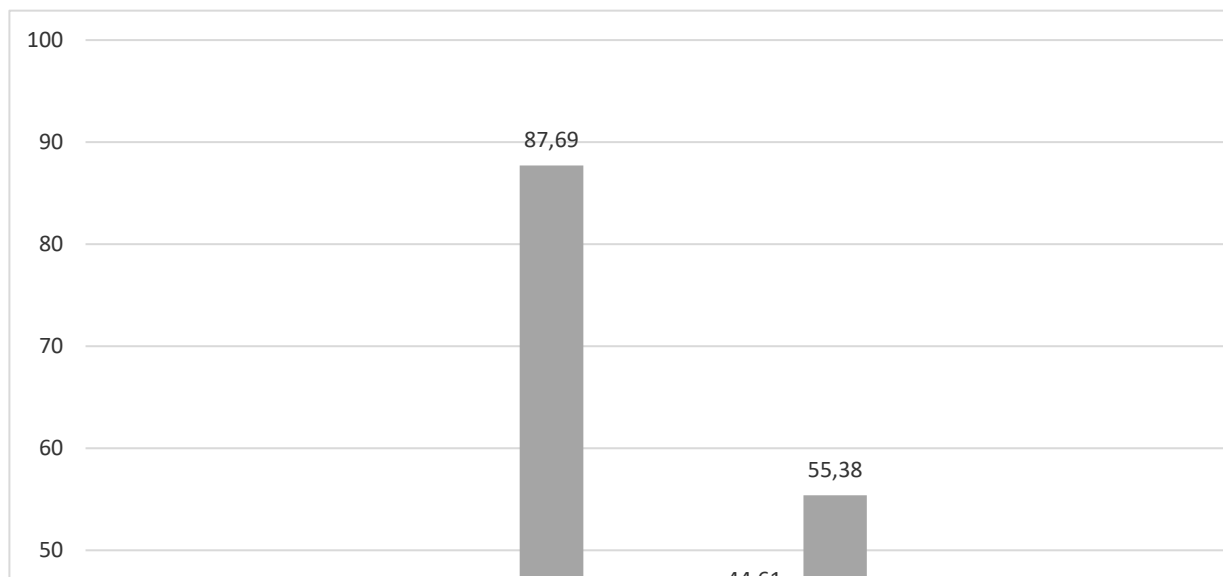
Source: Author's archive

Regarding the decision-making variable in question 6, the highest percentage was obtained by the alternative. They have not used the game of chess for academic and administrative decision-making in the institution. To question 7, a high percentage responded in the category They have not maintained adequate behavior when making decisions in their institution. Likewise, in question 8, the vast majority leaned towards the option If they consider that making timely decisions leads to managing a good attitude with their co-workers. Question 9, a high percentage indicated in the category If they maintain good communication that they agree to make timely decisions and question 10 a high percentage indicated in the alternative If through the application of the game of chess in decision-making is encouraged participation between teachers and management (As seen in figure 3).

It is inferred that teachers deserve training in the use of the game of chess in decision-making in the school establishment, which is due to a lack of motivation, on the part of the

directors, to promote the game of chess as tool to enhance the physical and mental knowledge of educators. In addition, educators are showing inappropriate behaviors when generating or making decisions. Also, it follows that teachers are convinced that communication and participation are essential elements in decision-making with the application of the game of chess.

**Figure 3** – Data related to the decision-making variable



Source: Author's archive

## Discussion

Processing the data in a statistical way obtained in the variable the game of chess and decision-making, it can be affirmed that teachers need to promote knowledge about the game of chess, which is why it represents a valuable tool that accesses potential thinking in individuals. It is supported by the study by Paniagua (2017) when it states that the game of chess contributes with various benefits based on the strengthening of intelligence, knowledge, way of acting, patience, respect for others, participation and Commitment to work.

On the other hand, the lack of training of teachers in the application of the game of chess is evident. The use of this game is essential for teaching professionals to appropriate knowledge and to strengthen physical-mental knowledge. According to the study by Triana, Cortés and Portillo (2015), it indicates that the formation of subjects in the game of chess is fundamental because it affects the ability to make assertive decisions in educational institutions, it stimulates entrepreneurship, creativity, well-being and quality of life.

Also, it is specified that a significant percentage considers that the game of chess allows to enhance knowledge, socialization and decision-making in teachers; makes it relevant that schools consider the development of chess as a tool based on pedagogical actions. This is supported by the research carried out by Sandoval (2019) indicates that the game of chess is fundamental in the development of competences, skills, understanding, socio-affective and cognitive enrichment in individuals where personality and decision-making can be appropriate to any conflict situation.

Regarding the decision-making variable, it was possible to show the existence of a significant number of responses in that they lack the use of the game of chess for decision-making in the educational field and have the need to reinforce appropriate behaviors that induce him to make assertive decisions in the academic-administrative field. This is contradicted by the study proposed by Espinosa (2018) when he states that decision-making is linked to the responsibility assumed in an institution in a shared way and therefore the use of chess is essential to strengthen the behavior and improvement of attitudes towards problems or conflicts.

On the other hand, it is required that teachers are fully convinced that making decisions lead to fostering good attitudes among classmates and communication is a primary channel for them to be carried out effectively. In addition, it is stated that the use of chess contributes to the strengthening of thought, knowledge and intellectuality. According to Astete (2017), it reveals that decision-making, communication and chess are indexed in stimulating the development of skills, attitudes, self-esteem, synthesis, creativity and the ability to choose in any situation; as well as the promotion of attention, concentration, memory, values and the promotion of the affective.

Hence, the present study is relevant because it will support other investigations because the game of chess currently represents a valuable tool to consolidate knowledge, physical-mental development and assertive decision-making in all members of school establishments. As well as the search for changes in positive attitudes in the face of conflictive situations or problems in the educational field with the process of improving the teaching-learning processes and therefore the consolidation of communication and interpersonal relationships.

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