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THE USE OF BINGO AS A PLAYFUL TOOL IN THE PROCESS OF TEACHING-LEARNING OF SCIENCE TEACHING

TTHE USE OF BINGO AS A FUN TOOL IN THE TEACHING-LEARNING PROCESS OF SCIENCE TEACHING

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Summary
The article aimed to improve teaching, facilitating the learning of 5th year students, through a methodology applied through a playful activity with an educational bingo. The study was developed from bingo later applied to expository classes on the content to be developed with the students, and subsequently, a questionnaire was distributed to them as a way of evaluating their development and learning. The study sought a way to improve the teaching method with the inclusion of educational games, as they influence areas of child development such as motor skills, intelligence, sociability and creativity. The result showed that, with the initiative of using bingo as a recreational activity, students were able to better understand and understand the subjects that were covered in their respective classes, since the use of this method guarantees a quality of teaching and a more efficient learning experience. satisfactory.
Key words: Playfulness; Game as a pedagogical tool; Education.

Abstract
The article aimed to provide the improvement of teaching, facilitating the learning of 5th grade students, through a methodology applied by playful activity with an educational bingo. The study was developed from bingo later applied to expository classes of the content to be developed with the students, and in sequence, a questionnaire was distributed to them as a way to assess their development and learning. The study sought a way to improve the teaching method with the inclusion of educational games, as they influence areas of child development such as motor skills, intelligence, sociability and creativity. The result showed that, with the initiative to use bingo as a playful activity, students were able to better understand and fix the issues that were covered in their classes, since the use of this method ensures a quality of teaching and learning more satisfactory.
Keywords: Playfulness; Game as a pedagogical tool; Education.

1. Introduction

For many years, students were considered passive subjects in the classroom, only receiving the information transmitted to them by the teacher, who had the main role in the teaching-learning process (DEWEY, 2000). For Libâneo (1994), teaching methods, diversified in strategies, are a link in the process of building students' knowledge, linking them to didactic content, thus minimizing high failure rates and poor performance in school activities. Below, some strategies are described by Libâneo (1994):

- Method of exposure by the teacher, where knowledge and skills are presented by the teacher and can be exposed through verbal exposition, demonstration, illustration and exemplification;
- Group work method, which consists of distributing the same or different study topics to fixed or variable groups of students, and in order to be successful it is essential that there is an organic connection between the preparation phase, the organization of the contents and the communicating your results to the class, as examples we can mention the debate, verbalization group, seminars, among others;
- Special Activities, which complement and assimilate the content studied, such as the study of the environment, planning, execution and exploration of results and evaluation.

According to Krasilchik (2004), the unidirectional way in which a traditional class is taught generates student disinterest and consequently low academic performance, which generates inefficiency in teaching. For Marturano (1993), the vast majority of learning difficulties are associated with problems of another nature, whether mainly behavioral or emotional.

Thus, we believe in the importance of including games, as a diversified strategy, in the students' autonomy and learning process, although it is important that the teacher plays the role of helping students, in the formulation and reformulation of concepts, activated by knowledge shared by the teacher, introducing the content of the subject and articulating the understanding of the content, according to Pozo (1998), using didactic resources to facilitate understanding, in this sense, the didactic game constitutes an important resource for the teacher when develop problem-solving skills, encourage the appropriation of concepts and meet the characteristics of adolescence.

The word “ludic” has its origins in the Latin word “ludus”, which etymologically means game. Freitas and Salvi (2008) relates the playful game to having an educational character and having specificities that differentiate it from others, such as enabling the learner to gain self-knowledge, respect for themselves and others, flexibility, and an integrated experience between colleagues and teachers. , motivating you to learn, all associated with joy and pleasure. For

Cabrera and Salvi (2005), playful resources naturally influence human beings, who have a tendency towards playfulness, from childhood to adulthood.

One of the options to make learning simpler and more enjoyable is the use of alternative methodologies. Playful activities, more strictly games, can thus help students in appropriating content, and consequently generating significant learning. In this way, the present study influences analyzing the use of an educational game, of a playful and methodological nature in the construction of learning, observing the learning satisfaction with the use of the game and the influence of its insertion in the classroom by the teaching part.

Each game has its own benefits and characteristics, gradually exploring different aspects, thereby awakening students to the prospect of achieving the objective proposed in the game, generating a cognitive increase. Furthermore, through play, social life and the individual's intellectual and emotional needs are also developed, which favors not only learning, but also ethical skills and attitudes.

> The game is an anthropological phenomenon that must be considered in the study of human beings. It is a constant in all civilizations, it has always been linked to the culture of people, their history, the magical, the sacred, love, art, language, literature, customs, war. The game served as a bond between people and facilitated communication between human beings (MURCIA, 2005, p. 09).

According to the study by Silva and Morais (2011), the diversity of games as a teaching-learning methodology has an intrinsic educational value, as it acts as a motivator, uniting will and pleasure during the development of an activity, making classes enjoyable. and fascinating learning, as the act of learning is associated with fun. However, three pillars are fundamental to the successful use of games in schools: prepared educators, school structure and adequate planning, in addition to a good variety and quality of games available. Without these pillars, the educational experience using games can generate frustrating results. However, the intention of most teachers using games is to transform the activities developed into situations that stimulate reasoning, leading the student to face conflicting situations related to their daily lives.

Thus, the present study aimed to evaluate the learning of elementary school students through the application of an educational bingo, as an alternative active methodology to assist in the science teaching-learning process in a municipal school in Santana do Ipanema. .

2 Theoretical foundation

Evaluating is always necessary when thinking about doing something different, taking a new direction in the way it is applied. In the school context, assessment refers to the objectives to be achieved, when putting the desired planning into practice. Second boiler (2000, apud OLIVEIRA, APARECIDA, SOUZA):

> "Assessment, in any teaching that occurs, will always be at the service of a project or a theoretical concept. Evaluation is always necessary for those who want to make what is already applied different, with new experiences. For this there must be criteria and comparisons. Therefore, for teaching to improve, it must start from theory and, consequently, be put into practice, so that what is desired is concretely obtained. Participating in the methods offered to students, the way in which the content is passed on and, therefore, trying to improve the transmission criteria for them".

A process by which we seek to identify, assess, investigate and analyze changes in the behavior and performance of the student, the educator, the system, confirming whether the construction of knowledge has taken place, be it theoretical (mental) or practical. (SANT'ANNA, 1998). It is important that the evaluation has to be general, including students, teachers and the space that is offered. According to Felício and Soares (2018, p. 2):

> It is through the game that the playful nature of the activity is shown and advances in development and interest in participating in the activities proposed by the student. And it is through the intentional and attentive mediation of the teacher that such activities can gradually become comprehension and understanding.

Since, in order to have a good result in a given objective, the entire organism must be in interaction. (OLIVEIRA, APARECIDA, SOUZA, 2012). Hence the evaluation criteria, which condition its results, are always subordinated to purposes and objectives previously established for any practice, be it educational, social, political or other. (DEMO, 1999, p.01).

Several studies show that games, in addition to being a source of discovery, are enjoyable for students to participate in and can contribute significantly to the process of building student knowledge (CUNHA, 2012). The cognitive psychologist David Joseph Ausubel formulated the theory of meaningful learning, which prioritizes as a central concept the process by which new information is related to relevant pre-existing knowledge in the student's cognitive structure (PELIZZARI, COL., 2002).

The term cognitive structure means the total set of ideas that the individual has about a certain area of knowledge, since it is in this structure that the processes of organization and integration of new knowledge occur (MOREIRA; MASINI, 2006). Thus, when a new range of information is presented to the student, there is interaction with their specific knowledge structure, existing in the individual's cognitive structure, what Ausubel called “subsumption” (PELIZZARI and COL., 2002).

According to Moreira (2006), the word “subsunçor” is synonymous with a concept, an idea or a proposition that already exists in the individual's cognitive structure, capable of serving as an anchor for new information so that it can be acquired, in this way. , meaning for the individual. According to Velasco (1996, apud BUENO):

> “By playing, children develop their physical, verbal and intellectual capabilities. When he doesn't play, he stops stimulating and even developing his innate abilities and can become an insecure, fearful and apprehensive adult. When you play freely, you have greater chances of becoming a balanced, conscious and affectionate adult.”

Active components of the educational process that reflect the conception of education assist in learning. Its presence emerges as one of the important indicators for defining quality educational practices in early childhood education institutions. (BRASIL, 1998, p.67. v. 1). According to Huizinga (2001, apud BUENO):

> The game for children is not the same as the game for adults, as it is necessary to think that for the child it is a moment in which, in general, learning takes place and, in general, for the adult it is recreation. The game for adults does not have the same meaning while, for children, the game is very important, because from there they can realize that playing is a great idea for learning. The game also promotes students' self-esteem, as playing makes the child gain more confidence and this will make a difference in learning.

According to Campos, Bertolotto and Felicio (2003), didactic games offer stimuli for students to carry out the proposed activities, because with the activity the student “develops different levels of personal and social experience, builds their new discoveries, develops and enriches their personality".

3 Methods

3.1 Type of study

The study is part of a qualitative investigation. In qualitative research, the researcher often seeks to understand phenomena from the perspective of

participants in the situation studied and, from there, place your interpretation of the phenomena studied.

3.2 Study participants

The study took place at the Municipal School of Basic Education Santa Sofia, located in the municipality of Santana do Ipanema – AL. During science classes, for 5th year elementary school students. The fifth year classroom studied has 30 students, aged between 10-12 years old, who participated.

3.3 Application of educational bingo

It took place over a period of two weeks. The first week consisted of two science classes, where the topic of the human body was worked on, covering the divisions: Head, Trunk and Limb. The following week, after theoretical classes, educational bingo was presented to 5th period students, explaining how it works and the rules to be followed, as shown in figure 1.

FIGURE 1. Human body bingo card applied in the classroom.

B	I	N	G	O
CRÂNIO E FACE	TRONCO	TRÊS	CABEÇA E TRONCO	CABEÇA
DEDO	SANGUE	NARIZ	AVIÃO	SISTEMA ÓSSEO
BRAÇOS	SUPERIOR E INFERIOR	OLHOS BOCA OUVIDO	PERNAS	LOCOMOVER
PELE	VERTEBRAL	MÃOS	PLANTAS	MÃOS
PISADA	SOL	CÉREBRO	MAR	CORAÇÃO

Source: Author, 2021.

The cards had the names of the bodies relevant to the three main regions, and questions were drawn for which the answer was on the card. For the question, the numbering of the question was highlighted, to which the order of the answers should correspond. The game ends when the first student completes the vertical or horizontal line on the card.

After bingo, a questionnaire was administered to observe the students' performance on the subject covered. In order to achieve the objectives proposed in this research, a bibliographical survey was carried out, based on authors who defend quality and playful education within, above all, early childhood education.

3.4 Data collection

The students were asked about the application of the game, seeking to understand its acceptance in the classroom and the ease in understanding the content. Regarding the questionnaire, they were collected, when interpreting the data, they were tabulated and inserted into the EXCEL 2016 program to organize and display the results.

4 Results and discussion

The study was put into practice in a school in the municipality of Santana do Ipanema, with the participation of 30 (thirty) students, aged between 10 and 12 years old.

Most students were able to complete the card vertically and reported that it was easier to learn with the game. There are several studies regarding recreational activities that prove that games, in addition to being a source of discovery, are enjoyable for students to participate in, and can contribute significantly to the process of building student knowledge (CUNHA 2012). Jann and Leite (2010, p. 283) state that:

> [...] educational games enter the current scenario, as they are practical, easy to manipulate in classrooms, have a low cost and promote the learning process in a stimulating way, developing social relationships, curiosity and desire to acquire more knowledge.

There was great acceptance of the feasibility of using the game by students in the classroom and it proved to be effective as an instrument to motivate students' learning. Therefore, the “Bingo Game” proved to be fun and didactic for the students, as in addition to the fun there was learning (RIEDER et al., 2005).

Games, in this way, gain space in the learning process as they stimulate the student's interest, develop different levels of personal and social experience, develop and enrich their personality, make it possible to construct new discoveries and are also pedagogical instruments that lead the educator to condition of stimulating driver and evaluator of learning (PATRIARCHA-GRACIOLLI et al., 2008).

After the bingo held with the students, a questionnaire was administered with a total of six questions, on the subjects given in the classroom, in which the percentage of correct answers and errors was presented as a result. As shown in table 1, it is possible to verify that in relation to the sentences cited and, based on them, whether they represent true or false, the students obtained 73% of correct answers and 27% of errors.

TABLE 1. True or false questionnaire applied in the classroom.

QUESTION	ACCURATE %	ERRORS %

1- Put true or false: a) The upper limbs are formed by the legs and feet; b) Our body is divided into three parts: head, trunk and limbs; c) The eyes are on the face; d) Inside the skull, there is the brain; e) The trunk is formed by the neck, chest and abdomen; f) The stomach is located in the skull; g) The heart and lungs are located in the chest; h) The neck is responsible for connecting with the upper limbs;	**73%**	**27%**

Source: Author, 2021.

For Lima et al., (2011), didactic games end up gaining prominence in classes for the reason that they stimulate students' reasoning, thinking and cognition, as well as providing the construction of physical, social, cognitive and psychomotor knowledge, providing the content taught can be easily memorized. According to Maluf (2006):

> Every human being can benefit from recreational activities, both from the aspect of fun and pleasure, as well as from the aspect of learning. Through playful activities we explore and reflect on reality, the culture in which we live, incorporate and, at the same time, question rules and social roles. We can say that in playful activities we go beyond reality, transforming it through imagination. The incorporation of games, games and toys into pedagogical practice develops different abilities that contribute to learning, expanding the network of constructive meanings for both children and young people.

In the pedagogical context, Machado (1992) analyzes the role of the game in pedagogical activities in three dimensions: 1st, playful, which emphasizes fun, winning strategies; the 2nd cognitive, converging on specific content, formation of concepts and establishment of operational techniques, and the 3rd social, which comprises the phenomena of communication and socio-cognitive conflicts. Didactic resources gain space in Science and Biology classes as they present potential in the teaching and learning processes. According to Santos (2011, p.3):

> Didactic resources are considered all types of learning components that stimulate the student in the classroom, being considered complementary instruments that help transform ideas and facts into reality. These types of materials help transfer situations, experiences, demonstrations, sounds, images and facts to the field of consciousness.

Regarding question 2, seen in table 2 later, the result of the specific question in relation to the main regions of the body, 69% of the students were correct, while 31% were incorrect.

TABLE 2. Question regarding the main parts of the body applied in the classroom.

QUESTION	ACCURATE %	ERRORS %
2- What are the main regions of the body?	**69%**	**31%**

Source: Author, 2021.

According to Fontoura, Pinto and Dinardi (2017), before thinking about a certain activity with a game, for example, bingo, it is necessary to pay attention to issues such as students' prior knowledge on the topic, the elaboration of questions that help students understand the subject and strategies that diversify the game, influencing students to reflect and build knowledge in order to relate the issues to what was worked on in the classroom. For question 3, 91% of the students who participated in the activity were correct about what can be found inside the skull, while 9% were not correct, according to table 3 presented.

TABLE 3. Question regarding themes applied in the classroom.

QUESTION	ACCURATE %	ERRORS %
3- What do we find inside the skull?	**91%**	**9%**

Source: Author, 2021.

It can be considered in table 4, in relation to question 4, it was found that the students had around 62% correct answers and 38% errors when asked about the function of the skull.

TABLE 4. Question regarding themes applied in the classroom.

QUESTION	ACCURATE %	ERRORS %
4- What is the function of the skull?	**62%**	**38%**

Source: Author, 2021.

For questions 5 seen in table 5 later, 89% got it right and 11% got it wrong on the question of the location of most of the organs that make up the human body, following question 6, where it was possible to see that 83% got it right and 17% they made a mistake regarding the organs found in the chest.

TABLE 5. Questions relating to themes applied in the classroom.

QUESTIONS	ACCURATE %	ERRORS %
5- Where are most of the organs that make up the human body?	**89%**	**11%**
6- What are the organs found in the thorax?	**83%**	**17%**

Source: Author, 2021.

It is noted, therefore, that through the classes applied together with the playful activity, the understanding of the subject was favorable and more qualified, enabling satisfactory results. It is important to highlight that teaching based simply on the use of games would be insufficient, as it would transform living into an illusory world (JORGE et al., 2009). However, by incorporating the game into teaching, the school encourages student reflection and interest in discovery (KISHIMOTO, 1999). For Toscani (2007), the act of promoting student involvement and ensuring their concentration in classroom and extra-class activities becomes a great challenge for teachers.

In this sense, games, in addition to being seen as a source of learning for students, can also help to encourage respect for other people and cultures, encourage better acceptance of rules, speed up verbal, numerical, visual and abstract reasoning and enable the student learns about solving problems or difficulties, encouraging them to look for alternatives (DIAS; COSTA, 2009).

The results obtained demonstrated that the use of active methodologies and playful games in science teaching arouses interest and encourages student participation during classes, as they learn by "playing" and showing that the adoption of new methodologies encourages and arouses interest. of students, improving the quality of the teaching-learning process in early childhood education.

Final considerations

Taking into account the methodologies applied in the present study, play, in turn, became fundamental and necessary for learning and fixing the content during classes, which, based on the dynamics of bingo, made students easier to understand. of the topics covered.

In this way, it is understood that in the school environment, activities that involve play as an aid during classes are important for the student's evolution, making them more participatory, communicative, working on their cognitive, social, psychomotor, among other factors.

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