

Educational Strategies in COVID Times 19: Mathematical Games and their Applications in Childhood Education

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Abstract

The objective is to present the educational strategies used in the teaching of mathematics in the pandemic period of Covid-19, in 2020, in the execution of activities developed at home, by students of early childhood education, between 4 and 5 years of age. The methodology used was based on the theory related to mathematical games for early childhood education, as well as the practice of teachers in this field. The results show that mathematics education comprises knowledge beyond numerical issues. Which is a discipline with a direct relationship in the various actions carried out in the children's daily lives. It is concluded that the circumstantial forms that can appear on a daily basis, should not be limiting in the purpose of knowledge construction, regardless of the age in question.

Keywords: Early Childhood Education; Mathematics.

INTRODUCTION

Since mathematics is a knowledge of a cumulative nature, the initial years of schooling are decisive for the construction of foundations that

support the later contents. This fact increases the responsibility of the professionals who work in this educational phase, as well as that of their trainers. The school difficulties of students related to learning mathematics can be attributed to different variables, among which the main one is the performance of the teacher, given that the teaching action can produce, crystallize or overcome these difficulties. In turn, the main variable that influences the possibilities of the teacher's performance is his initial and continuing education (NOGUEIRA, et al 2016).

According to the National Curriculum Parameters that focus on mathematics (BRAZIL, 1997), this is an area of knowledge of great importance in the education of citizens, since more and more society uses scientific and technological knowledge, necessitating the popularization of its teaching.

Thus, the objective of this work is to present the educational strategies used in the teaching of mathematics in the pandemic period of 2020, in activities developed at home, by students of early childhood education, between 4 and 5 years of age. The motivation to take care of this action is based on the novelty imposed by the problem in the area of health that limited the space of "coming and going" for people of all classes, including children. In addition to this introduction, there is the following structure: the Methodology section, which presents the form chosen or used to meet the proposed objective; the Results and Discussions and finally, the Conclusion.

METHODOLOGY

According to Rita (2013), mathematical games constitute a ludic activity that mobilizes the individual in a certain direction, providing a search for solutions or ways to adapt to problematic situations and gradually leads to voluntary effort. With the use of games as a pedagogical resource, the teacher can provide a pleasant environment for learning, being able to explore concepts, reinforce content, test already acquired knowledge and mainly develop the student's self-confidence when developing strategies to solve a certain "problem".

Mathematical Games can assist the teacher in his pedagogical work in the classroom, as they, when combined with playful activities, end up arousing the student's interest in the subject and, consequently,

promoting learning. The teaching of mathematics, even though it is under construction, is centered on pedagogical practice so that it can be involved with the relationships between teaching, learning and mathematical knowledge. Thus, the basic objectives of education brand the field of research and knowledge production, (CRISTANI and GUZZO, 2016).

The methodology used in this work was based slightly on the theory related to the theme, as well as on the findings of experience of teachers of early childhood education, who used the tools as allies in the construction of initial mathematical knowledge with children of early childhood education, aged between 4 and 5 years old from public schools on school days during the Covid pandemic period 19.

RESULTS AND DISCUSSION

Teaching is a challenge. In a period of social isolation, when houses together started to represent all possible environments for visitation / housing / leisure, among others, this challenge became high.

In this section, there is a discussion of the results found in relation to the objective proposed in this work. At first, it reflects on the use of mathematical games as a teaching tool. From Borin's (1996) findings, it was possible to extract the items that, according to the author, are relevant in terms of the use of mathematical games as a didactic resource for the construction of knowledge, which we have gathered 10 of these in a basic table (Table 1):

Table 1: Mathematical games as a tool

| Question | Through play, the child: |
|----------|--|
| 1 | Get pleasure and make a spontaneous and voluntary effort to achieve the goal of the game |
| 2 | Integrates various dimensions of personality |
| 3 | Develops dimensions: motor, affective, social and cognitive |
| 4 | You have the opportunity to learn to play and actively participate |
| 5 | It can enrich the relationship between your peers |
| 6 | Reinforces the mathematical content already learned |
| 7 | Learn to deal with frustrations and behave sensibly |
| 8 | Develops acceptance of rules |
| 9 | Develop and enrich your personalities |
| 10 | Become more participatory and spontaneous towards classmates |

Fonte: Borin, 1996.

Thus, understanding that at least the 10 items listed above can result in significant benefits, it is interesting to report the types of games played as a result of development in activities carried out at home (no longer in the classroom) by early childhood students, in age group of 4 and 5 years, from public school in the city of Manaus.

The games were sent to the parents, who developed the proposed activity with the students (children), as shown in table 2. The strategy applied in the activities resulted in the children's participation in each one. And it was noticed that in addition to completing the tasks, there was also creativity involving the participation of families and caregivers. Tabela 2: Jogos matemáticos desenvolvidos em atividade em casa em período da Covid-19.

| <i>Game</i> | <i>Habilidade - Objetivo</i> |
|-----------------------|--|
| Sushi | Work on laterality, concentration and broad motor coordination. |
| Straight | Develop the ability to balance and focus |
| Measure and quantify | Observe the mathematical world around us in objects and their sizes, colors, shapes. |
| Biometric examination | Focus only on weight and height, emphasizing the weight of people and things, and the measurement using the instrument, as well as the body itself: hands, feet and steps. |
| Juggling and age | Use the amount of balls that represent the child's age and play juggling, thus making the record on paper. |
| Circle and triangle | Jump in and out of marking on the floor of geometric shapes, transcribing it on paper. |
| Fishing | Through playing fishing develop mathematical skills and recycling with bottle caps, working in series through the separation of colors as well. |

Source: Research data.

It is noteworthy that the use of games responds positively with the resourcefulness and awakening of children's creativity, because in all activities there is a function or an objective to be achieved. Thus, although the environment was not customary in the classroom, mathematical education was present, developing creativity, stimulating the conception of space and time, as well as doing with learning, it is also something pleasurable.

CONCLUSION

Studying is necessary, because knowing is a healthy way to be healthy. It is known that the teaching of mathematics has undergone major changes in recent years around the world, which requires educational changes that provide the opportunity to understand knowledge in a significant way, as well as a democratization of its teaching.

In the pandemic period, the mathematical games applied in this work, proved to be relevant tools in the continuity of curricular fulfillment and the development of skills and intimacy with mathematical functions. This provided, among other factors, the interaction between parents and / or respondents in the development of these games, such as the activity proposed for the children in question.

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