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INNOVATIVE PEDAGOGICAL PRACTICES IN BASIC EDUCATION

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Abstract: The project entitled “Pedagogical practices as a space for dialogue in the initial and continuing training of teachers who teach Mathematics”, its main purpose is to present and understand the particularities of innovations in teaching practices at different levels. This work is a branch of the aforementioned project and deals with a theoretical study on innovative practices in basic education, based on the characteristics studied by Bet and Colombo (2022), the identification of innovative practices in high school subjects in a public school and researching an example of practice that could be considered innovative. The results indicated that innovative practices are of paramount importance in the intellectual construction of students and can make learning more interactive and dynamic, contributing to students’ interest and promoting better performance. Furthermore, it was found that, to promote innovation, in addition to the characteristics mentioned in this article, it is essential to value the continuous training of teachers and have the institution’s support and resources for the development of these practices.

Keywords: innovative pedagogical practices, basic education, mathematics teaching.

INTRODUCTION

Basic education, especially in the area of mathematics, is an important pillar in the training of individuals, where fundamental knowledge for intellectual, social and emotional development is acquired. To ensure effective and meaningful learning, it is essential to use appropriate and up-to-date pedagogical practices.

Therefore, considering the different needs, interests and learning styles of students is essential for the success of these practices.

Therefore, educators need to be constantly looking for innovative strategies that

encourage the active participation of students, promote critical reflection and promote the construction of knowledge in a collaborative way (Almeida, 2018).

The study by Bet and Colombo (2022) presented essential characteristics for a pedagogical practice to be considered innovative and served as a theoretical basis for the development of the empirical stages of this research, namely: the analysis of pedagogical practices in some High School subjects and research /proposing a practice that had innovative characteristics.

- 1) It promotes innovation by planning a curriculum that is not subject to neutrality;
- 2) Places the student as the protagonist of their learning and allows them a certain autonomy;
- 3) Transforms the classroom into a space for socialization, construction, collaboration and learning values for social interaction;
- 4) Carrying out creative problem solving, establishing relationships with learning and everyday life;
- 5) Carrying out self-assessment by everyone involved in the learning process;
- 6) Encourages the creation of the ability to use the physical and virtual environment as a learning tool. (BET and COLOMBO, 2022, p.5)

This synthesis presented by the authors exposes the importance of integrating educational technologies into everyday school life, as a way of enhancing access to knowledge and developing the ability to search for mathematical information in a critical and responsible way. It also emphasizes the importance of the role of the educator as a mediator in this process, capable of stimulating students’ curiosity, creativity and critical thinking about mathematics.

Studies such as Pontes (2018), which brings problem solving as an active methodological possibility for teaching mathematics, and Carvalho et al (2021), which discuss digital technologies and active methodologies to expand the teaching strategies in which the teacher adopts a more dialogical stance in the

classroom corroborates the understanding that pedagogical practices that place the student as the protagonist can promote improvements in the quality of teaching.

MATERIALS AND METHODS

To carry out this research, the first stage was the theoretical study of articles related to innovative pedagogical methodologies for better knowledge about the subject and different practices.

In a second action, a survey was carried out with high school students from the 6th Military Police College of Paraná - Lieutenant Colonel Luiz Antônio Ferreira so that the pedagogical practices of their teachers could be analyzed. The main focus was the analysis of mathematics classes in which problem solving predominated.

Finally, for the research/proposition stage of an innovative pedagogical methodology, a learning trail was created with the Math City Map tool, based on the work developed by Zarpelon et al (2022), which consists of a compilation of 6 tasks that explore knowledge various aspects of mathematics such as spatial geometry, multiples and divisors, plane geometry, proportion, units of measurement, counting and parity.

The aim is to motivate them and for them to explore their mathematical skills in an outdoor activity. This track will be applied to students at the end of September this year.

RESULTS AND DISCUSSIONS

From the research carried out with high school students, it was possible to observe that few teachers used innovative pedagogical practices, restricting themselves when this happened to solving problems. And when this happens, students show a preference for this method, as they say they can better resolve their doubts, have more focus on learning and better understand the step-

by-step instructions to facilitate their study. Regarding the innovative pedagogical practice researched to be an example and a final product of this research, the outdoor math trail was our choice. The trail

Prepared for 6th year students, it consisted of the following activities:

1. 6th CPM Stage: Consists of knowing whether the student understood the basic characteristics of spatial geometry (edges, vertices, faces, etc.) and the Euler Relation;
2. School Lockers: In this task the student will work on their multiplication and division skills, remembering the concepts of multiples and divisors;
3. 6th CPM Fire Extinguishers: For this activity the student will have to discover an area and review their knowledge of plane geometry;
4. Colored Hexagons: In this the student will have to use the ideas of proportion, reinforcing their logical skills as well;
5. Window Measurements: For this one, the student will again have to discover the area and also understand the relationship between measurement units;
6. E, Staircase of the Court: finally, in this task, several basic mathematics concepts, such as parity, multiples and divisors will be reviewed.

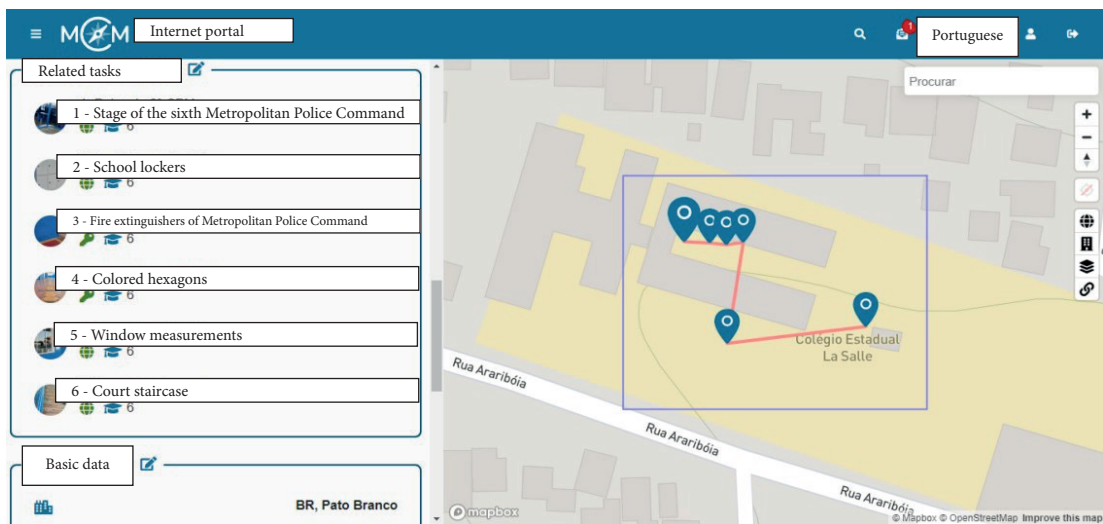


Image 1 – Trail page of Math City Map

Source: Math City Map

This trail was presented and approved by elementary school teachers who accepted its application, considering it an innovative pedagogical methodology in teaching mathematics. Furthermore, they highlighted that the activity would make students exercise physically and mentally while, at the same time, interacting and studying mathematics.

CONCLUSION

In this article, the innovative pedagogical methodologies presented have transformative potential when it comes to teaching mathematics. These approaches prioritize the active participation of students, promote critical thinking and encourage the practical application of concepts, especially when it comes to problem solving. Consequently, they create a more dynamic, productive and effective learning environment. By implementing these practices, educators not only spark students' interest and motivation, but also cultivate their deep understanding of mathematical principles, generating greater performance in advanced teaching. This preparation gives students the confidence and ability to overcome various mathematical

challenges they may face. From now on, it becomes imperative that educational institutions advocate and support the integration of these methodologies to improve the quality of mathematics teaching and pave the way for a better future for students.

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CONFLICT OF INTEREST

There is no conflict of interest.

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