

THE IMPORTANCE OF TEACHING MATHEMATICS IN THE EARLY GRADE.

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Summary

We are living in a very important moment in the country, where the demand for education has increased, driven by the growth of technology and the deepening of knowledge. This direction leads society and institutions to develop as well, while at the same time requiring that education itself seek new teachings and new practices, so that its studies and projects are always up to date. This need has been observed in the classroom, in the daily practice of teaching and learning, especially with regard to mathematics, since this is a fundamental subject for citizens. Its priority requires that teachers and students themselves better possibilities for working in the classroom and achieving better results in the teaching and learning of teachers and students. With this understanding, this text seeks to present some considerations on the subject.

Keywords: Innovative Education, Technology in Education, Mathematical Teaching, Educational Development, Pedagogical Practices

Abstract

We live in a very important moment in the country, where the demand for education has expanded, being driven by the growth of technology and deepening of knowledge. This direction leads society and institutions to develop as well, at the same time that it requires education itself to seek new teachings and new practices, so that its studies and projects are always up to date. This need has been observed in the classroom, in the daily practice of teaching and learning, especially with regard to mathematics, since this is a primary subject for citizens. Its priority requires from the teacher and the student themselves better possibilities to work in the classroom and achieve better results in teaching and learning for teachers and students. Under this understanding, this text seeks to present some considerations on the topic.

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Introduction

Education is the element of personal fulfillment of the individual and a vehicle for their integration into society. The social changes that occur continuously require the improvement of methods, systems, planning and curriculum, with a view to better preparing the student by the teacher, in fulfilling this integrative purpose. In this sense, Araújo and Barros (2019) state that, for more than five centuries, that is,

Since teaching and learning began to be planned and formalized, they have undergone many transformations. We will tell this story of education from the arrival of the Portuguese and the main characteristics of each historical period.

Some objectives of education can be listed, in relation to citizens and society, such as: developing thinking; providing conditions for analyzing problems; making the individual assume responsibility. 1. Duties; improve actions ethically, according to social needs; provide the individual with the opportunity to acquire new values and knowledge. These are values that are subjectively experienced daily

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Under these criteria and values, we seek to identify the importance of teaching and the school curriculum to be applied in each grade, as allies in the teaching of subjects and the school curriculum. (DUTRA, 2019) learning mathematics, combined with textual interpretation, interferes in the understanding of the resolution of mathematical problems, considering the fundamental pillars of education: the need to learn to learn, learn to think and also learn to do.

1 Teaching and learning

Being a teacher is not an easy task, as it may often seem at first glance. This is because, in addition to studying and preparing, teachers also need to be aware that one of their main tasks is to contribute to improving the quality of society by offering better cultural and civic education to their students. This role occurs because the teaching profession is an activity that aims to transmit knowledge; it is through knowledge that their work receives its qualification. Teaching work is based on the commitment that the professional who dedicates himself to teaching assumes to transform this knowledge into relevant learning for students.

The activity of being a teacher, in addition to working with knowledge and teaching what you already know, It also involves learning, since, according to Baccon (2011), when transmitting knowledge, the teacher acts by bringing about changes in the student himself, in addition to, at the same time, learning and bringing about changes in himself. From this perspective, the teacher is a professional who works in the transmission of knowledge, in the formation of new knowledge and, therefore, needs to be committed to student learning.

In practical day-to-day teaching activities, teachers realize the great difficulty that students have in learning exact sciences, such as mathematics, especially because there is a great distance between the teacher who wants and is dedicated to teaching, and the student who wants to learn, despite the difficulty that exists in liking mathematics. This distance becomes increasingly greater as time goes by, and brings the understanding that, when the student studies mathematics, mathematics students do not always have adequate skills or competencies to identify possible teaching obstacles in the classroom, especially when they attend the initial grades (SANTOS, 2019).

It is also recognized that teacher preparation and development are not restricted to academic training, and that institutions seek to innovate and create new ways to reach students. However, when considering these criteria, it can be stated that training qualifications also present specific dimensions relevant to teaching practice, which highlights important factors, and, even in the undergraduate period, already brings defined characteristics according to the basic discipline to serve as academic preparation, as reported by Araujo and Barros (2019).

By observing these results, it is understood that there are different levels of learning among them, which draws attention and the search for knowledge on this topic, always aiming to deepen the best teaching-learning for students in elementary education practiced in Brazil, according to the curriculum established by educational authorities.

To be inTeaching children in the early years of elementary school requires skills and abilities specific to such practice, since this period involves learning subjects that are responsible for the child's literacy, the foundations of which will structure all their learning. It is no different with mathematics, since the subject brings with it its own vocabulary and series of symbols, which need to be taught and learned clearly and competently. (SOUZA, 2019).

It is understood that one of the general principles of learning is not only to identify and know the curriculum of the disciplinary grid taught, but also to have the guidance of its development towards the possible autonomy of learning, in addition to considering these characteristics in their connection with the capacity of inter-

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textual interpretation. In this sense, as Maria Amélia do Rosário Santoro Franco (2016) teaches, it is up to the teacher initially directs the student in his/her learning, but over time the learner needs to acquire and construct knowledge on his/her own. Thus, learning can occur at a more significant level than that which occurs through the mere transmission of knowledge and content.

The objective of this research focuses on the teaching and learning of mathematical content, considering the possibility and capacity of the student to learn, interpret and apply the knowledge acquired in the discipline as indispensable aids for problem-solving, as they will also be learning to reason, understand and size up the different possibilities of choices that they will face throughout life.

Considering these aspects, it can be said that many educational systems and various laws and conceptions have already been advocated and established, in order to minimize the difficulties and challenges that exist in the art of teaching. However, practice has often proven to be inadequate and under this understanding, it is necessary to consider both the theoretical approaches and the practical and didactic approaches presented in the classroom.

It is observed that in a harmonious educational system, the school acts as a modeler of behavior. human behavior, through specific techniques. School education is responsible for organizing the process of acquiring useful and significant skills, attitudes, competencies and knowledge, necessary for individuals to integrate into the global social system. It is also considered that school practice consists of the search for and implementation of conditions that ensure the performance of teaching work; and the role of the school consists, in addition to the transmission of knowledge, in the formation of attitudes, which is why it must always be concerned, also taking care of social, psychological and pedagogical problems, with a view to establishing a climate favorable to change and constant learning of the individual; that is, to a personal adaptation to the demands of the environment that can favor the human being to have conditions for self-development and personal fulfillment. (LIBÂNEO, 2014).

When considering history, it is observed that in Brazil, mathematics teaching has remained elitist throughout time, marked by its high value, excessive concern with training and mechanization of processes, which in general did not represent the path to achieving a proper understanding of the subject and the objectives of its study. However, when the norms were promulgated in the new Federal Constitution in force since 1988, the possibility of establishing new laws of guidelines and bases for education was opened, which would allow educators to: plan education as a determinant of action within the social context, in concrete conditions, in a democratic way directed towards the best teaching-learning.

With regard to the mathematics curriculum, it is currently noted that the curriculum established for teaching and learning includes content and strategies that allow students to carry out activities within the three domains of human action: life in society, productive activity and subjective experience.

To this end, we have sought to incorporate as general and guiding guidelines of the curricular proposal, the premises defended by UNESCO - United Nations Educational, Scientific and Cultural Organization, which are defended as fundamental and structuring axes of education in contemporary society: learning to know; learning to do; learning to live; and learning to be.

The teacher is the first target of teaching in this chain of relationships, however, it is clear that he does not always have the necessary and adequate preparation to transmit knowledge, which brings up numerous considerations, and leads the researcher to seek current guidelines and alternatives so that he can obtain the possibility of improving his teaching methods, his pedagogical practice and better teaching his students.

This understanding is corroborated by the fact that: data from the 2014 School Census indicate that among the 2.2 million teachers working in basic education in the country, 24% did not have adequate training. In 2018, according to Brito (2018), "four out of every 10 teachers working in the classroom in Brazil today do not have adequate training to teach."

However, important news is found, considering that, according to INEP - National Institute of Studies and Educational Research Anísio Teixeira, it brings to the educational environment, which brings great encouragement:

The 2020 Basic Education School Census shows an increase in the percentage of teachers with undergraduate and postgraduate degrees. In the comparison between 2016 and 2020, there was an increase from 34.6% to 43.4% in the number of teachers with postgraduate degrees. This increase is part of one of the goals of the National Education Plan (PNE), which aims to increase the percentage of teachers with postgraduate degrees and continuing education to 50%. The result has been positive, considering that the percentage in continuing education also increased, from 33.3% in 2016 to 39.9% in 2020. (INEP, 2021).

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It is understood that "the school can, through interventions, motivate and sensitize both students and teachers to rethink their actions in the school environment, optimizing the teaching-learning process", as stated by Lopes (2020). The many difficulties that teachers face have already been observed in daily practice; therefore, this study seeks to facilitate the identification of an educational direction that will benefit today's students in their learning.

The report "Education: a treasure to be discovered", by the International Commission on Education for the 21st Century, prepared for UNESCO (1998), establishes four pillars as educational principles, or,

four steps that should guide learning, which are described didactically, but, in the end, are directed towards the same purpose, which are: learning to know; learning to do; learning to live together; and, learning to be.

The first pillar mentioned deals, from an educational point of view, with the commitment to acquire knowledge, and by learning to know, the individual also exercises the necessary training to seek his own learning by his own means. In other words, each person is guided to know the world around him, to achieve, through his learning, a dignified life and, at the same time, the necessary training to develop and communicate in the environment that is conducive to him.

By practically exercising "learning to learn", individuals acquire not only knowledge, the pleasure of understanding your discoveries, which serves as a stimulus to seek to increase knowledge, feed your intellectual curiosity, form your critical sense and develop your autonomy and discernment.

Perrenoud (2002) describes that learning to learn results in a reflective practice, which in turn is based on a form of learning that, when practiced methodically, can become a self-training, a construction that results in new practices and skills. This dedication transforms from learning, knowing and analyzing, into a concrete awareness of what is done.

Learning by doing is the pillar of education that translates what has been learned into concrete actions. It is the basis of professional training as it is manifested by the demonstration of knowledge acquired through practice, demonstrated especially in the job market.

With regard to teaching mathematics, it is presented as an instrument that acts not only in learning, but also in the application of knowledge in all areas of life. The forms of representation, such as written signs, tables, charts, diagrams, maps, geographical forms, aim to symbolize, in a distinct and immediate way, simple, numerous or difficult data to be learned directly. (VASCONCELOS, 2013).

It is up to the teacher to present the mathematical content, to be aware that, when working with the student, he must use his previous knowledge and his current need, and the programmatic content to be given, makes him seek to be more participative, interested and, in the long term, the big differences can be broken, causing the construction of new structures in his thinking and transferring them to his actions; not just acting mechanically on the situations, but analyzing and organizing the functioning of his actions in a responsible way to solve his problems.

According to Libâneo (2011), it is essential for all those who work in the field of education, regardless of the subject they teach, to seek human formation, to seek to develop the ability to discover what are the intrinsic social relations that present themselves before their eyes, in each event of their life, in the exercise of their profession and in each subject learned and taught, so that their political, ethical and critical responsibility is manifested at all times, in the transmission of knowledge.

In times of great and new technological advances that are presented to society daily, and, even when manual tasks are increasingly performed mechanically, with machines and equipment prepared for this purpose, the human being will always be in front of the machines, whether as an idealizer, as a controller, but also as a creator. Therefore, mechanistic behavior is being replaced by equipment, but the qualification, the ability to work in a team, the creativity and initiative of man, are guidelines for his social behavior, his education and knowledge, his experience

It should be considered that the formation of individuals does not depend only on accumulating knowledge, but rather on applying it with a critical vision, with new criteria and means of obtaining an understanding of constant construction and reconstruction, under a vision of multidisciplinary and interdisciplinarity, as it is understood that the disciplines to be taught to the student depend on each other, intertwine, or must intertwine so that there is increasingly complete learning.

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It is up to the teacher to reflect on teaching practice, to include reading and interpreting texts of students, in a dynamic way in the classroom, from the first initial grades, considering that communication through the most varied means, needs to be exercised from the beginning of elementary school, especially regarding the practice of reading and text interpretation (BROUSSEAU, 2015).

The aforementioned author Brousseau (2015), in his research, disclosed the way in which children acquired mathematical knowledge and understanding. As a result of his studies, he published articles aimed at teachers with the purpose of suggesting innovations in the teaching area and developing several possibilities for carrying out mathematical activities that could be applied in elementary education, defending in particular the Theory of Didactic Situations, as a result of his studies.

According to the aforementioned author Brousseau, (2008, p.16), "teaching is conceived as the relationships between the educational system and the student linked to the transmission of a certain knowledge", considering that the didactics of teaching mathematics must establish an aligned relationship between teaching content and the ability that students demonstrate when acquiring knowledge in the area.

In that regard, according to Brousseau (1996), the situations and problems presented to students need to be generated in such a way as to provoke the knowledge that students bring as a foundation for learning new concepts and knowledge. In other words, the students' manifestations in the face of a given situation, when provoking responses, spontaneous or not, need to be analyzed under conditions that can establish a relationship between the known and the unknown, even when visible to the student and that generate answers to new questions.

The Theory of Didactic Situations proposed by Brousseau argues that mathematical activities included in the school curriculum should bring with them an increasingly concrete presentation of content, in such a way that they demonstrate a cognitive vision, where the meaning and objective of learning is more coherent, more inserted into the student's daily life, considering that the author is based on the educational theories defended by Piaget and Vygotsky that support greater social interaction between teachers and students in the environment that surrounds them, always interconnected with the mathematical knowledge to be acquired (SILVA and OLIVEIRA, 2009).

These principles argue that in all situations it is necessary for the teacher to have as I focus on the fact that understanding the teaching and learning process is constituted by the union between teacher, student and acquisition of knowledge, interacting in the achievement of learning and reducing obstacles not only educational, but also significant learning, in search of the student's own social achievement.

Therefore, the Theory of Didactic Situations is seen by scholars as a reference in the area of mathematics teaching because it provides interaction between students, teachers, environment and mathematical knowledge, since these interactions enable the conditions for improvement for the acquisition of mathematical knowledge, considering that the understanding of the social interactions that occur in the classroom between teachers and students and the conditions and the way in which mathematical knowledge can be appropriated and learned. It is considered that at every step individuals are continually faced with written information, therefore everyone is forced to acquire skills from reading habits and interpretation of their status as a student, being encouraged to learn more and more, not only the subjects of the curriculum, which are taught in the classroom, but in extracurricular activities as well (DINIZ, 2001).

In reality, it can be said that the lack of practice or habit of reading and interpreting texts leads students to have difficulties in understanding what they read and also in reflecting on the reading done, so that they can achieve significant knowledge (LOPES and KATO, 2014).

For Vygotsky (1991, p. 125), the meaning of words is very dynamic, and when analyzing the relationship between thought and language, the aforementioned author considers that: "a word acquires its meaning in the context in which it appears; in a different context, its meaning changes". In other words, depending on the moment and context presented, the word acquires other meanings within its current aspect, which requires, in addition to its reading and interpretation, an analysis of its meaning, which differs according to its presentation. Therefore, it is up to the teacher to guide students from their first steps, in such a way that they become interested and seek to understand a text, no matter how short it may be, so that, with their understanding, they also come to capture the meaning and applicability of the identified words to use them in their daily lives, including outside the school environment (LOPES and KATO, 2014).

It is also essential to mention that the meaning of words, in addition to presenting their basic function of offering knowledge, also presents transformations, modifications in accordance with their context, aimed at achieving the development of individual thought, based on their learning process, where they learn new concepts of words, which integrate their culture and that of the society where they live.

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Final considerations

In the literature it is found that there is a consensus among scholars and teachers that there are many and great the difficulties regarding teaching and learning in activities involving reading and interpreting mathematical texts, especially in the initial years of elementary school, however, this difficulty cannot be ignored or avoided, as overcoming it is essential

Reading and interpreting texts should be considered activities that lead to greater knowledge, and, to this end, it is up to teachers to offer students the greatest variety of written material possible.



sible, as well as providing the possibility for learners to express themselves, identify, compare, reformulate what they read, in addition to seeking new applications of knowledge as mediators.

It is emphasized that learning is a process that develops through the acquisition of knowledge and experience of human beings throughout their lives. Therefore, it is up to the teacher who teaches any subject, including mathematics, to lead students to reflect on the texts provided, so that they can act and react in the construction of the knowledge acquired and apply it in their daily lives, considering that the teacher's intervention consists, in addition to teaching their students, also encouraging reading and writing, stimulating the development of the ability to read and understand all the information captured, making the connection existing in the information collected, as well as leading the student to discover new horizons both those exposed by the author of the text read, and to apply them in their own lives.

In the end, it can be stated that the mediation of teachers combined with the active participation of students, resulted in will be based on basic learning that, from the first steps of schooling, will serve as a foundation for new learning to be acquired throughout life, and will even lead to significant learning in which students learn, including, the very foundations of mathematical content.

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