



## The influence of the Portuguese language to interpret and understand mathematical statements

*The influence of the Portuguese language to interpret and understand mathematical utterances.*

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Submitted on: 01/09/2022/  
Approved on: 01/11/2022/  
Published on: 01/14/2022 v. 2,  
no. 1, Jan-Jun. 2022 DOI:  
10.51473/rcmos.v2i1.279

### SUMMARY

This article addresses the influence of the Portuguese language on the subject of Mathematics, and aims to involve concepts of how reading and interpretation make a difference in understanding the statements of mathematical questions in elementary school. In reality, it is believed that an articulated teaching-learning practice of the Portuguese Language and Mathematics favors the success of students, as it allows difficulties related to the interpretation of statements to be overcome. Therefore, effective and meaningful learning occurs when students understand what they read, which facilitates the internalization of concepts that involve mathematics, and understand that even though they are opposing disciplines, they complement each other.

**KEY WORDS:** Portuguese language; mathematics; understanding; interpretation.

### ABSTRACT

This research approaches the influence of the Portuguese language in the Mathematics discipline and involves concepts of how reading and interpretation make a difference in the understanding of mathematical questions in elementary school. In fact, it is believed that an articulated practice of teaching-learning both Portuguese language and Mathematics privileges the student's success, since it allows overcoming difficulties related to the interpretation of the mathematical problems statements. Thus, effective an effective and meaningful learning takes place when students understand what they read, which makes it easier to internalize the concepts that mathematics involves, and also helps in the understanding that even though they are opposing disciplines, they complement each other.

**KEYWORDS:**Portuguese language; Mathematics; understanding; interpretation.

## 1. INTRODUCTION

In this article we assume that teaching the Portuguese language is extremely important for building a well-founded foundation in learning mathematics,

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with the hypothesis being the idea that reading and language can influence, in a beneficial way, the teaching of this subject.

The line of research is bibliographical, qualitative and versed in pedagogical practice, therefore, it was in this

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In the sense that we seek to understand the students' difficulties in understanding the statements of mathematical activities. Drawing a parallel with the classroom experience, we can observe that many students do not read the problems fluently and do not respect the punctuation marks, which certainly contributes to the difficulties in interpreting them. These difficulties in reading and interpreting statements led us to understand that students do not always understand what they are reading, what command the question proposes, and what it tries to communicate to them. This work is justified by the intention of collaborating with those teachers who receive students in their classes who are unable to interpret statements in mathematical activities, due to a lack of command and understanding of the Portuguese language. The main objective of our work is to present the relationship between these disciplines, breaking taboos on this subject and specifically raising different bibliographies on the subject in question.



Thus, the topic addressed was chosen due to its relevance for the teaching and learning of students, as it involves an interdisciplinarity between the subjects of Portuguese Language and Mathematics and part of the context that the student will progress in their studies based on the mutual knowledge that involves these subjects.

## two. DEVELOPMENT

Mathematics will make its contribution as methodologies are explored that prioritize the creation of strategies, proof, justification, argumentation, critical spirit, and favor creativity, collective work, personal initiative and autonomy in the development of trust in one's own ability to know and face challenges (GONTIJO, 2006).

Mathematical language is the combination of the Portuguese language and Mathematics, therefore, having students write in mathematics classes is a way of interpreting the question and this strategy can be used by the teacher, as the student will have time to make a mental diagnosis of the activity to be solved and understand what difficulties were encountered. It is at this point, when writing the text, that the student is able to understand and proceed with resolving the issue or not, or whether it requires more than information, requiring the mobilization of other skills.

We highlight several reflections on the influence of reading and understanding on good performance in the teaching and learning process of students. Given this, Cagliari (2010, p. 130) argues that:

The student often doesn't solve the math problem, not because he doesn't know math, but because he doesn't know how to read the problem statement. He knows how to add, divide, etc., but when reading a problem he doesn't know what to do with the numbers and their relationship with the reality they refer to. There is no point in saying that the student does not even know how to add or divide numbers that do not present difficulties, that he does not understand mathematics. Because in fact he doesn't understand the Portuguese he reads. He was not trained to read numbers, quantitative relationships, math problems. The Portuguese language teacher does not teach this because he says it is the mathematics teacher's obligation and the mathematics teacher either does not suspect the problem or, at most, thinks that reading and understanding a text are a problem that the Portuguese language teacher must solve in children's education.

And so, the student begins to acquire blocks, learning gaps, as they do not understand the commands that the activity is asking for, they become discouraged and are discouraged from seeking a solution to that particular problem. Likewise, the lack of an appropriate interpretation makes it difficult to correctly understand mathematical statements and, consequently, prevents their correct resolution (Paraná, 2013).

To this end, learning Mathematics in a contextualized, integrated way and related to other knowledge brings with it the development of skills and abilities that are essentially formative as they instrumentalize and structure the student's thinking, enabling them to understand and interpret situations, if necessary. appropriate specific languages, argue, analyze and evaluate, draw own conclusions, make decisions, generalize and many other actions necessary for their training (PCN, 2002).

The Portuguese language is the basis of all teaching and learning, as, in order to understand and interpret mathematical statements, mastery of the Portuguese language is essential (Costa, 2007).

Let's highlight that these subjects are most often the protagonists in the student's life, whether positively or negatively. Many students say that the Portuguese language and Mathematics have nothing to do with each other, they are like two totally different worlds or that they are antagonistic.

Most of the time, mathematical problem situations are not solved due to the fact that there is no effective interaction between the question statements and the readers. It is worth highlighting that the appropriate use of the syntactic structure contributes to the harmony between the textual structure and the semantics, establishing greater clarity in the textual meaning, therefore facilitating understanding and perfecting the meaning as a whole Guimarães (2013).

At school, Portuguese Language and Mathematics, among others, are subjects with their own structures, but presenting, also, common elements within this structure. Mathematics cannot be worked on in isolation

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Concept construction, however, will be more productive if it is worked in a contextualized way with other areas of knowledge. To do this, it is necessary to develop different ways of working with concepts and this means developing new models of teaching and learning.

The teacher needs to lead the student to develop mathematical language so that it becomes as natural as everyday language. To do so, you need to realize that the context in which you operate needs to be modified, you need to integrate it with the Portuguese language, both spatially and temporally.

Vygotsky's thought is appropriate in this case:

[...], practical reasoning presents some similar points with adult thinking,

deferring to others, in addition to emphasizing the dominant role of social experience in human development. [...], social experience plays its role through the process of imitation: when the child imitates the way in which the adult uses instruments and manipulates objects, he is mastering the true principle involved in a particular activity (VYGOTSKY, 1998, p .29).

When paying attention to an activity carried out by the adult, that is, by the teacher, the child or student imitates their actions and the way in which the teacher handles, teaches and involves their students in the class, which makes all the difference. The development of thought and acquisition of knowledge is determined by language (Vygotsky, 2001).

The construction of mathematical knowledge based on communication, the oral negotiation of meanings and the mediation performed by the written text, strengthens this discourse and defends different discourses, however, it is a change that does not happen overnight.

As Kuhn (2000, p. 26) says,

A new theory, no matter how particular its scope of application, is never or almost never a mere addition to what is already known. Its assimilation requires the reconstruction of the preceding theory and the reevaluation of previous facts. This intrinsically revolutionary process is rarely completed by a single man and never overnight.

In an attempt to understand the factors that lead the student to not understand the theories that the disciplines suggest as a structured language, specific to expressing ideas, concepts and, also, to not understand their functioning and understanding mechanisms, it causes assimilation of theories, is not strengthened by the student.

Language is a means we use to communicate, according to Ferreira (1999), language is “the use of the articulated or written word as a means of expression and communication between people [...]”. The specific vocabulary in a science, in an art, in a profession”. (FERREIRA, 1999)

Being mathematically literate means that the subject understands what he reads and writes, as well as realizing the meaning of the act of reading and writing in the context of Mathematics.

The act of teaching and learning are directly linked to communication. Stubbs (1987, apud MENEZES, 2004) states that “teaching and learning are confused with communication itself”. Therefore, it is necessary to reflect on the quality of communication that is being carried out in classrooms. It is necessary to know whether the teacher and the student are heading in the same direction, the same line of thought or whether they are on opposite paths.

In short, the teacher presents the question, the student reads, interprets, switches to mathematical language, internalizes and associates other knowledge and then returns a result. Communication will only be perfect if all these steps make sense to the student. This meaning will be linked to the way the teacher, in this case, works on the content, the subject needs to be common to the teacher and the student.

According to Menezes:

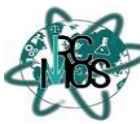
We can understand the word “communicate” in two senses: in the etymological sense, it will be “make common” and in the other, in a more common sense, it means “transmit” or “transfer to the other”. In both directions, it is possible to see how the relationship between teacher and student can facilitate or not this communication, since the medium is an important element for it to occur clearly. (MENEZES, 2004, p. 2)

Therefore, the teacher's pedagogical practice is directly linked to the transmission of knowledge, as an interlocutor, animator and creator of situations to improve the interpretation of the statements of questions, on the other hand, the receiver, that is, the student receives and internalizes this knowledge or not, therefore, there is a need for reciprocity in pedagogical practice in order to have good communication and meaningful learning.

Therefore, it is essential that any teacher has excellent linguistic skills to recognize the level of knowledge of their students and subsequently create strategies that enrich their learning (Duarte, 2001). Thus, based on the analysis of some writers, we believe that the teacher should be concerned with the product, not forgetting that one of the objectives of Mathematics is the development of mathematical thinking, for which

contributes significantly to the understanding of statements and understanding of mathematical questions.

The discussions presented throughout this article are not intended to present solutions for the issue of reading and understanding the statements of mathematical questions, but rather to envision that it is possible to improve learning as long as we know that it is necessary to relate it with other disciplines.



In short, we can say that reading ability is a joint responsibility of teachers from both disciplines involved, that is, Portuguese Language and Mathematics, which involve distinct reading skills, such as understanding the linguistic code represented by words, as well as the mastery of vocabulary and specific terms from the mathematical language that will directly influence the resolution of mathematical problems. It should be noted that teaching the Portuguese language is extremely important for building a well-founded and essential base for the development of students' reading, writing and speaking skills.

Therefore, if the student realizes that, when learning Mathematics, he is developing a skill that will be useful in the construction of new concepts, this will make it more enjoyable and meaningful, for this it needs to be differentiated and dynamic, providing the student with more security and less discomfort in this discipline that is essential to everyone's life.

## REFERENCES

BRASIL, Secretariat of Secondary and Technological Education. PCN+ Secondary Education: Educational Guidelines complementary to the National Curricular Parameters. Languages, codes and their technologies. Brasília: Ministry of Education/ Secretariat of Medium and Technological Education, 2002

CAGLIARI, LC Literacy and Linguistics. São Paulo: Scipione, 2010.

COSTA, AM The Importance of the Portuguese Language in Learning Mathematics. Braga, Portugal, 2007.

DUARTE, I. Training in Portuguese Language from the double perspective of the trainee as a user and as a future teacher of the mother tongue. In I. Sim-Sim (Org.), Training for Teaching the Portuguese Language in Pre-School Education and in the 1st Cycle of Basic Education, Teacher Training Notebooks, 2, 2001.

FERREIRA, Aurélio Buarque de Holanda. Aurelio dictionary. 3. Rio de Janeiro: Nova Fronteira, 1999.

GONTIJO, CH Problem Solving and Formulation: paths for developing creativity in Mathematics. In: SIPEMAT Annals. Recife, Postgraduate Program in Education – Education Center – Federal University of Pernambuco, 2006.

GUIMARÃES, E. Text, discourse and teaching. São Paulo: Contexto, 2013.

KUHN, TS The structure of scientific revolutions. São Paulo: Perspectiva, 2000.

MENEZES, L. Mathematics, language and communication. Millennium.

PARANÁ. Secretary of Education. Methodological strategies for reading and interpreting mathematical problem statements for 9th grade students. The challenges of public schools in Paraná from the perspective of the PDE teacher. Articles - Volume 1. Paraná: SEDUC, 2013.

VIGOTSKI, LS The Social Formation of the Mind: the development of higher psychological processes. 6. São Paulo: Martins Fontes, 1998.

VYGOTSKY, LS Thought and Language. Rio de Janeiro: Martins Fontes, 2001.