

Challenges of Teaching Math Practice in the Early Years: A study based on three narratives

Desafios da Prática Docente no Ensino de Matemática nos Anos Iniciais: um estudo a partir de três narrativas

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ABSTRACT

This article discusses results of a research whose objective was to understand which challenges the teachers face in the early years of basic education, in classroom routine, with respect to teaching math, and how they handle them. For this, we develop a qualitative study from of interviews with three teachers that work in a public school of the Icapuí city, State of Ceará, Brazil. We can deduce that many of the challenges are found in the initial formation, in the teaching methods and in the resources used in classroom; and they are also linked to indiscipline and to the omission of the family in the process of education closely the schools. We think that these challenges can't to be viewed as inhibitors of the teacher's action, but as factors that impel to the search for new knowledges, trying to improve teaching practices.

KEYWORDS: Mathematics Education. Challenges. Teaching. School life.

RESUMO

Este artigo discute uma pesquisa cujo objetivo foi perceber quais desafios são enfrentados pelos professores dos anos iniciais do Ensino Fundamental, no cotidiano escolar, com relação ao ensino de Matemática, e como eles são encarados. Para isso, desenvolvemos uma pesquisa qualitativa, a partir de entrevistas com três professores que atuam na rede pública de ensino do município de Icapuí, estado do Ceará. É possível apontarmos que muitos dos desafios encontrados pelos professores estão vinculados à sua formação inicial, às metodologias de ensino e aos recursos utilizados em sala

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de aula; elas também estão vinculadas à indisciplina e à omissão da família no processo de educação junto às escolas. Consideramos que estes desafios não devem ser encarados como inibidores da profissão do professor, mas, sim, como fatores que os impulsionem à novos saberes, tentando o aprimoramento das práticas de ensino.

PALAVRAS-CHAVE: Educação Matemática. Desafios. Docência. Cotidiano escolar.

Introduction

Mathematics is a discipline that is very present in people's daily lives, but not so well accepted by everyone. There are several aspects that are involved in the learning process of this discipline and it is not difficult to notice what the National Curriculum Parameters points out when they state that it causes two contradictory sensations: the perception that it is an important area of knowledge, but that it causes dissatisfaction with the unsatisfactory results of learning (BRAZIL, 2001).

Learning Mathematics is not a process that involves only the study of content, there are questions related to the practice of the teacher and the student in the classroom, the learning environment, the way activities are developed and the resources that are used in the teaching process (NACARATO; MENGALI; PASSOS, 2009). All this, forms a range of challenges and possibilities that teachers face and have daily in the classroom in teaching this content.

In the activities of the curricular components Supervised Internship II and the Thematic Seminar II, of the Pedagogy Degree course at the University of the State of Rio Grande do Norte (UERN) - which seek to articulate theoretical studies to teaching practices in school institutions - we realize that there are many challenges faced daily, in the classroom, by teachers in the early years, especially with regard to the teaching of Mathematics. Problems perceptible from the emphasis on the use of the textbook as the only possible methodological resource, to the issues related to awakening students' interest in the classroom.

Thus, in order to investigate what are the challenges faced by teachers in the daily classroom of the initial years, particularly in the teaching of Mathematics, and how they deal with these, we proposed this research proposal whose nature of the work is qualitative, and we used narratives, produced from semi-structured interviews conducted with three teachers who work in the initial years of elementary school in the public network of the city of Icapuí-CE.

In Silva (2013), we found a research carried out with mathematics teachers in which, through narratives, we sought to perceive the daily confrontations of these teachers and the way they dealt with them. In this research, the confrontations studied were not only about what was lived in the classroom, but also about what

came from outside the school and influenced professional practice. For him, these daily confrontations were understood as events "in constant transformation, involving family, personal, leisure, professional, political aspects, always altered according to each individual, that is, confrontations involving situations of certain knowledge, routine activities and school procedures" (SILVA, 2013, p. 10).

Here, we will understand as challenges the daily confrontations that teachers face in their teaching practice, and also the means that they mobilize in order to overcome or mitigate the repercussions that these confrontations may have on class progress and student learning. We will analyze only some of these challenges, seeking to elaborate understandings mainly about: the training of teachers for the teaching of mathematics in the initial years, the teaching methodologies and methodological resources in classroom practices, the feelings of teachers regarding the subject and even aspects of learning related to the daily experiences of students.

This article will initially present some theoretical aspects about the teaching of Mathematics in Brazil, the teacher training to act in the initial years and the challenges in the professional practice of the teacher; then we will present the methodology that we mobilized for the development of this study and some analytical notes on the data produced and, finally, we will bring some considerations of what was possible to understand from this research.

Theoretical aspects: the teaching of mathematics, teacher training and the challenges of professional practice

Mathematics in Brazil has gone through different phases and reformulations throughout its historical development to reach the teaching we have today. The 1970s and 1980s were very significant for this area of teaching, since it was a period of intense and important curricular reforms for the teaching of mathematics and, particularly in Brazil, it was the period of organizing a specific field of research to deal with the subject: Mathematics Education (GOMES, 2012; D'AMBRÓSIO, 2012; FIORENTINI; LORENZATO, 2012).

We agree with Santos and Lins (2016, p. 352) that Mathematics Education is a field of "professional action and investigation that allows to problematize certain aspects (epistemological, political, social, cultural) of certain pedagogical, investigative practices...". Whatever the nature of the studies developed, it is from this field that, in Brazil, the practices of teaching mathematics are being (re)thought.

However, long before that, the teaching of mathematics underwent numerous curricular changes throughout the nineteenth and twentieth centuries, and we realize,

from studies such as Gomes (2012) and Garnica (2016), that the successive changes occurred because of the need to teach this discipline to be changed, especially in the practice of the teacher in the classroom, to seek to adapt to new contexts and curricular proposals.

There are several aspects involved in the process of teaching and learning Mathematics, requiring attention, among other elements and beyond the content, to issues related to the learning environment, the activities and instruments used in the process and the practice of the teacher and student (NACARATO; MENGALI; PASSOS, 2009). Ribeiro (2009, p. 14) points out that in addition to the pedagogical quality of the proposals worked, the teacher has a central role in building significant experiences for learning.

D'Ambrósio (2012, p. 80) considers the training of mathematics teachers a challenge and points out his proposal for the training of this new professional for today, who "should have: 1. a vision of what is mathematics; 2. a vision of what constitutes the activity of mathematics; 3. a vision of what constitutes the learning of mathematics; 4. a vision of what constitutes an environment conducive to learning mathematics".

We can point out that this task becomes even more challenging when we deal with the teachers who will work in math teaching in the initial years, while this training is only a restricted part of the entire degree course in Pedagogy, which has, according to the National Curricular Guidelines for the Pedagogy course, among other objectives, to train professionals to work in "[...] teaching in Early Childhood Education and in the initial years of Elementary School, in the courses of Secondary School, in the Normal mode, of Professional Education in the area of services and school support and in other areas in which pedagogical knowledge is foreseen" (BRAZIL, 2005, p.7).

Nacarato, Mengali and Passos (2009), reflecting on the influences that can be brought to the teaching of Mathematics by gaps in the training of pedagogues, say this is the main reason that leads teachers in the initial years to classroom practices that end up merely reproducing the teaching strategies of their multi-purpose teachers, since "professional teacher training begins in the early years of schooling" (NACARATO; MENGALI; PASSOS, 2009, p.23).

The difficulties with teaching this subject, therefore, may often arise from these processes, from which resentments of teachers in relation to the Mathematics of student time often come to light, which ends up leading the professional in action or

even in training to bring "[...] deep marks of negative feelings in relation to this subject, which often imply blocks to learn and to teach" (NACARATO; MENGALI; PASSOS, 2009, p.23), which may end up directly influencing the formation of other subjects. These practices occur because we understand the subject as a multiple being, "there is no way to separate beliefs from different professional knowledge. The way a teacher teaches brings to it her conception of mathematics, teaching and learning" (NACARATO; MENGALI; PASSOS, 2009, p.24), as well as other marginal knowledges that influence these processes.

The blockages built by teachers can only cease to exist if during their initial (or continuing) training processes they have access to other knowledge and practices related to this subject, but "breaking with these belief systems implies creating training strategies that can (dis)build the knowledge that was appropriate during the student's trajectory in basic school" (NACARATO; MENGALI; PASSOS, 2009, p.28), that is, these knowledges need to be rescaled, resigned so that other understandings about school mathematics, its contents and its practices can be developed.

A UNESCO study (2016) on "The Challenges of Teaching Mathematics in Basic Education" considers teachers to be fundamental in the teaching of Mathematics in Basic Education and indicates that a number of challenges, both quantitative and qualitative, arise around them. The quantitative challenges are related to the teacher's salary, his social and professional image and working conditions. The document points out that these aspects of the teacher's work cannot be generalized among all countries, since in some cases the teacher's work is well valued and attractive, and in others the teacher develops his or her work under precarious conditions.

With regard to the qualitative challenges, the document (UNESCO, 2016) takes up the idea of teacher training as one of the main challenges to be faced and indicates the need for procedural training, stating that there is professional training in initial training, and that, regardless of its quality, continuous training should be sought.

This UNESCO document (2016) also points out mathematical literacy as another challenge for quality mathematical education, a process that not only occurs in the teaching of mathematics, but that must take place in all disciplines. In this sense, "[...] mathematical literacy should, in particular, enable individuals to understand, analyze, and critique the multiple data whose presentation uses diverse

and complex systems of representation, numerical, symbolic, and graphical, and other interactions" (UNESCO, 2016, p. 14).

To overcome the above challenges (mathematical literacy and teacher training) a new challenge arises: teaching practices, which are the means by which one seeks to provide the learning of students, with numerous possibilities. In Mathematics Education, many working options are pointed out that provide students with other perspectives on Mathematics and their possibilities of giving meaning to this science, however, the use of these possibilities falls on the challenge of teacher training previously mentioned. (UNESCO, 2016).

Evaluation is another challenge proposed by the UNESCO document (2016), which points out that it is necessary to mobilize evaluation in the teaching of mathematics "[...] in its formative dimension, to conduct learning during its realization, as well as in its summative dimension, to situate the results obtained in relation to expectations and evaluate the distance between the desired curriculum and the curriculum achieved" (UNESCO, 2016, p. 25), i.e., evaluation is an indispensable tool in the teacher's work and should always be in accordance with the desired objectives for the teacher and for the students, seeking to carry it out in order to boost the formative process.

Soares (2009), also addressing the challenges of the teacher, points out some interdependent aspects regarding what he believes to be the challenges for those who teach: building a working group, fulfilling a curricular program, understanding how individuals learn, getting the adherence of students to the proposed methodology and developing this teaching methodology; sometimes, all this in comparison with what is expected by colleagues, administrative bodies or even the community of parents.

Among them, for the author, using teaching methodologies that enable students to learn, even if it is a practice that goes against the conceptions of the school and other teachers, may be considered the greatest challenge for teachers. It is worth noting that, still according to Soares (2009), to achieve these better results, one of the main steps is to take into account the experiences outside the school, bringing them into the teaching process.

Corroborating this concept, we also report to Freire (1996) who defends not only respect for the knowledge of the students, but the reflection on them. Thus, for this author, the teacher and, more broadly, the school, has the role of "not only respecting the knowledge with which the students, especially those of the popular

classes, reach it [...] but also [...] discussing with the students the reason for the existence of some of this knowledge in relation to the teaching of contents" (FREIRE, 1996, p.30).

Understanding, with Soares (2009, p. 9), that "the answers to the challenges of each reality can only be defined by those who deal directly with the students in the conditions established there" and in order to better understand the daily school life, notably the context in which the teaching of Mathematics takes place in the initial years, we point out the need to listen to these subjects in order to approach the challenges experienced in the teaching of Mathematics in the initial years and the ways in which they are faced daily.

Methodological procedures of the research

This study is of a qualitative nature and adopted the interview as the research instrument for data production. The qualitative type of research is based on the subjectivity of the individuals involved in the research and, according to D'Ambrósio (2012, p. 93), "it is focused on the individual, with all its complexity, and on his/her insertion and interaction with the socio-cultural and natural environment", that is, regardless of the techniques that are applied, the qualitative type of research has a central axis that is the subjectivity of the subjects involved in it and the environments in which they are inserted, seeking to understand them.

Among the many possibilities of producing data for qualitative analyses, Poupart (2010) says the interview is one of the most used resources in the works developed in the field of social sciences, which seek to understand the subject, the societies and the environments and, according to him, there are three main justifications for the use of this procedure: (1) the epistemological, since it allows a deepening in the questions related to the interviewed subjects, allowing a greater and better understanding of what is interested in studying the reality of these subjects; (2) ethics and politics, which allows to perceive the dilemmas, the challenges to which the subjects are exposed and face daily; and (3) the methodological, since it is the means that allows a greater approach to the subjects and, as a consequence, a greater production of information about them and their realities.

The type of interview was the semi-structured one, in which we used an initial script to guide the interview, but without delimiting points of arrival, thus being able to be changed or added, during the process, what was pertinent to the work - this being one of the advantages of using the interview as a research tool (FIORENTINI; LORENZATO, 2012).

It is important to emphasize the importance of the interviewer to have some care at the time of the interview, whatever they may be: (1) explain what the job is, (2) ensure security as to anonymity - if applicable - and confidentiality of the information collected, (3) request authorization to record the interview, (4) conduct the interview in an appropriate place, (5) show interest in what is commented on by the interviewee, (6) not ask direct questions that may induce the answers of the interviewee, as well as (7) seek not to interrupt the line of reasoning by letting the subject conclude his thought (FIORENTINI; LORENZATO, 2012; BARALDI, 2006).

According to Alberti (2004), the relationship that is established between interviewer and interviewee cannot be different from a relationship that is established between people in daily life. In the interview, different subjects are involved, who have an interest in a common theme. "This interest is added to a previous knowledge about the subject: on the part of the interviewee, a knowledge resulting from his life experience, and, on the part of the interviewer, a knowledge acquired by his research activity and his engagement in the project" (ALBERTI, 2004, p. 101).

After the interviews, we move on to their processing, which involves the transcription, the transcription fidelity conference and the copy editing. The transcription is the transition from oral to written language, seeking fidelity to all the content obtained in recording. Fidelity checking of the transcript consists of listening to what has been recorded in conference with what has been written, allowing possible omissions, errors and even improper additions to be corrected. Finally, the copy-editing tries to make the document fit for reading, making the appropriate corrections according to the grammar of the Portuguese language. (ALBERTI, 2004).

The subjects chosen for the research, and who agreed to collaborate with us, were three teachers from the initial years of a public school in the municipality of Icapuí, a coastal municipality of Ceará. Our choice for the locus of the research was due to the fact that one of the authors has already developed a work in the secretariat of the chosen institution and deals directly with the results of the students in different evaluations (local and national), from which we perceived a lower performance related to the subject of Mathematics, both in the initial years and in the final years of Elementary School. In addition, we justified the choice because we noticed, in some opportunities for conversations with teachers and in collective planning, that many of them have difficulties with the teaching of Mathematics in relation to the use of different resources in the classroom, in addition to talking about

the existence of a certain resistance to the subject on the part of both the students and the teachers themselves.

The school work with elementary school with offers for the initial years and the final years; there are 13 (thirteen) teachers working in the initial years, in the morning and afternoon shifts. Of these, the three selected to contribute to our study taught Mathematics in two different classes in the initial years in the 2017 school year: in the morning, in one of the grades from the first to the fourth year, in which he was a multi-purpose teacher, and in the afternoon shift, some specific subjects, including Mathematics, in one of the grades from the fourth or fifth year³. As we understand it, this allows these teachers to have many classroom experiences related to the teaching of Mathematics, justifying the choice of these three subjects in particular.

The first teacher interviewed⁴ was called P1, has a degree in Pedagogy and has been a teacher in this school for 9 (nine) years, working in the early years of primary school. In the 2017 school year, he taught the 2nd year of Elementary School in the morning shift, as a multi-purpose teacher, and the subjects of Mathematics and Arts in the 5th year in the afternoon shift. The interview with this teacher took place in August 2017, in the Audiovisual Room of the school. One detail that we can highlight is that the collaborator asked to read the interview script before the recording, about what Alberti (2004) warns is possible to happen and guides the permission, suggesting that he explain that it is only an orientation for the dialogue on the subject, as we did.

The second teacher interviewed was named P2, his training is at the middle level, in the former teaching profession. This teacher has already started some graduations, among which the Pedagogy course, but has not completed any of them. Currently he is studying Pedagogy again and, according to information, with the intention of concluding it. He has been a teacher for almost 15 (fifteen) years, of which 12 (twelve) were teaching Mathematics and Science in the final years of Elementary School and for 03 (three) years he has been teaching in the initial years. In the 2017 school year, he taught the 4th year of elementary school in the morning shift, as a multi-purpose teacher, and the subjects of Mathematics and Arts in the 5th year, in the afternoon shift. The interview with this teacher took place in September 2017, in an unoccupied classroom at the school.

³ This is a characteristic of the capacity of teachers to complement the workload that they have to fulfill, not only of this school, but in the whole municipality of Icapuí

⁴ We have chosen to treat all employees as male, as a way to help maintain anonymity. In addition, it is worth noting that the transcripts of the three narratives are available in full in Braga (2017).

The third teacher interviewed, called P3, has a degree in Pedagogy and has been a primary school teacher for 9 (nine) years. In the 2017 school year, he taught the 2nd grade of elementary school in the morning shift, as a multipurpose teacher, and in the afternoon shift, the subject of Mathematics and Arts in the 4th grade. The interview with this teacher also took place in September 2017, at the school's Science Laboratory.

About the analysis of these narratives, Garnica, Silva and Fernandes (2010, p. 9) say that "it is not up to the researcher to judge the oral narratives since they function as supports for the story told by the researcher about the phenomenon researched," that is, we understand as an objective of analysis not the judgment of what was said in the interviews, but as a moment to understand the information considering all that we had access.

For the analysis of these narratives, therefore, we sought to perceive trends, evidence from the statements of our collaborators, which would enable us to understand the subject of study. These "evidences", "trends" are attributions of meanings of the researcher about what he read, from his theoretical lenses. In other words, it is the aspects narrated by the collaborators, consonant or dissonant, that contribute to the constitution of what we intend to approach in the dialogue with the referential that we deem plausible. (BARALDI, 2006; GARNICA; SILVA; FERNANDES, 2010).

It is worth noting that, as Baraldi (2006, p. 14 and 15), we understand that the process of research analysis is ongoing from the moment we propose the object to be investigated, because "[...] an analytical operation is already underway at the first moment when it is decided to focus on a certain object in order to have a greater understanding and, therefore, control over it. [...] Detecting tendencies is one - among the many - moment of analysis".

Finally, we emphasize that we seek to follow the guidelines of the Committee on Ethics in Research (CEP) and the National Committee on Ethics in Research (CONEP) - presenting to the subjects the subject of the research, its objectives, justification and methodology adopted, we address the rights of employees and the consequences of this research - even understanding that this research does not require approval of the CEP / CONEP because it falls under the sole paragraph of Article 1 of Resolution 510/16 which deals with the rules for the development of research in Human and Social Sciences (BRAZIL, 2016).

Analysis of narratives: notes on teaching mathematics and its challenges

Analyzing the data from the interviews with the teachers, it was possible to see that many of the difficulties encountered by them in the teaching and learning process arose from the very beginning of their careers, when they soon came across a reality completely different from what they had imagined when they were still attending their initial training courses. This is noticeable mainly in the statements of P1 and P3 teachers, who started teaching before they even finished graduation and highlight the importance of working theory and practice together.

This relationship theory and practice is increasingly necessary to the work of the teacher and this should be allowed since his initial training process, as D'Ambrósio (2012) points out, which often does not happen, and that is why Souza (2001) says that the teacher should constantly seek in his practice relationship from the theoretical foundation with which he had access in order to enrich it. Still according to this author, theory and practice should be unique actions in which there should not be a predominance of one over the other.

About the need for theory and practice to be always close in the training process, teachers P1 and P3 talk about the subjects they took at the undergraduate level related to the teaching of Mathematics, of which they corroborate that, besides having a very short period of time, they were worked on in a very theoretical way, leaving a little to be desired in the matter of practice, which made them only have the first contact with the teaching of Mathematics when they started teaching. This reminds us of what Nacarato, Mengali and Passos (2009) observe, when they point out that many of the multipurpose teacher training courses have a very small workload to work on Mathematics teaching issues, and also Carvalho and Lima (2010) when they say that these initial training courses often "neglect one fundamental aspect: teaching elementary mathematics that teachers will deal with in their teaching practice at school". (CARVALHO; LIMA, 2010, p.29-30).

As we have seen before, initial teacher training courses should seek to prepare the professional for the reality that he or she will face and also provide conditions that will subsidize the exercise of his or her profession. Thinking back to the beginning of the exercise of a function, Oliveira (2004) considers entry into a profession as a moment of adaptation and learning involved in different expectations that are created throughout the training process, mainly in relation to the teacher's profession, when the subject moves from the role of student to that of teacher, a completely different reality experienced by him until then. Still for the author, the discomfort "[...] that young teachers face is a prolonged and complex process that

arises from the confrontation that takes place between the ideals that have been built up and the reality of the classroom, which is not unknown to them, is now looked at and experienced from another perspective" (OLIVEIRA, 2004, p. 3).

Professor P1 speaks of his early career as a teacher, pointing out that he found it difficult to work in the classroom due to the indiscipline of his students, and to get around the situation he always tries to maintain dialogue with them. Professor P3 also talks about the challenge that was the beginning of his career and the importance of continued training for the work of teachers: "at the beginning, it was a bit complicated because everything new is frightening. But with the training that we participate [...] it makes our work much more enjoyable and in a much easier way to work with students who have learning difficulties" (TEACHER P3, 2017).

It is noticeable the importance of continued training in the profession of the teacher and the importance of the search for new knowledge that will improve the process of teaching mathematics, as already pointed out by the benchmark of our study. According to Carvalho e Lima (2010), the teacher must have an adequate initial and continuing education that will provide the development of essential conditions in the teaching and learning process, always seeking to deepen their knowledge in relation to the specific contents of Mathematics and the didactic-pedagogical aspects.

Still on the beginning of his teaching career, Professor P2 reports that, although he has been working for sixteen years as a teacher, he has only been working for approximately three years in the initial years of elementary school. Even though he only had a high school education, a former teacher, since the beginning of his career he taught Mathematics and Science subjects in the final years of Elementary School - due to the lack of teachers in the area and for always having some facility to deal with calculations and with the subjects that required more reasoning and logic. Despite this experience, he says he felt some difficulties related to teaching in the initial years, emphasizing that the process of adaptation to the level of education is being gradual, because the municipality of Icapuí and the entire state of Ceará work from a routine proposed by the Program Literacy at the Right Age (PAIC)⁵.

⁵ The PAIC is a program of the Government of the State of Ceará created in 2007, with the aim of ensuring the literacy of students enrolled in the 2nd year of elementary school and which inspired the creation at the national level of the National Pact for Literacy at the Right Age (PNAIC) in 2012, by the Ministry of Education.

Teacher P2 repeatedly talks about the need he feels to reflect on his classroom practice and this, he points out, has been allowing his personal and professional evolution, enabling him to change some attitudes in the classroom, improving the teaching and learning process. Professor P2 also says that "I allow myself to learn from the experiences of each day, so this process of feeling what is happening will give you a baggage that will make you start thinking about ways, finding solutions, things that will make you improve teaching and learning" (TEACHER P2, 2017).

To this need for the teacher to always be reflected on his classroom practice, Freire (1996) treats as critical reflection on teaching practice. According to the author, this reflection should already arise from the initial formation of the teacher and go through his practice daily in order to improve it, because, for him, "[...] the more I assume myself as I am and realize the reason(s) why I am like this, the more I become able to change, to promote myself, in this case, from the state of naive curiosity to that of epistemological curiosity" (FREIRE, 1996, p. 39).

Regarding the subject of Mathematics itself, the three teachers show interest in it, and for teachers P1 and P3 this interest arose when they started teaching the subject, especially for teacher P1, who, in his speech, tells us that right at the beginning of his career he didn't like Mathematics very much, but after he started teaching it and looking for different teaching methodologies, he started to like it more. According to him, this use of different methodologies also arouses the students' interest in Mathematics. Professor P1 highlights the importance of using different teaching strategies and different classroom resources in the process of teaching Mathematics and the textbook as a basis for searching for these other elements.

Even if the emphasis on the use of the textbook can be considered a problem in the process of teaching mathematics, this resource is still considered an indispensable support material for the teacher's work, it is enough to be used properly and as a basis for the search for new strategies that can be implemented in mathematics classes.

Both Professor P1 and Professor P3 speak of the use of the textbook as a basis for the search of new knowledge, of novelties that can attract the students' attention and provide better learning for them. According to Carvalho and Lima (2010, p. 30), "[...] it is important to remember that, despite all its importance, this book should not be the only support for the teacher's work. It is always desirable to

seek to enrich it with other sources in order to broaden or improve the content it brings" and, above all, to adapt it to the reality of the students with whom it works.

Also, for these authors, the textbook plays a fundamental role in the teaching process, among the possible resources that can be used in the classroom, being a support in the teacher's work for the planning and management of classes. From it are established and strengthened relationships between the teacher and students, and between the author and the book, with the latter providing the knowledge to be studied, the methods to be used and the organization of curriculum (CARVALHO; LIMA, 2010).

Professor P3, realizing the importance of the textbook as a basis for the teacher's work and student learning, says that the greatest difficulty he is currently experiencing is the lack of this material for all students, because those who have, do not supply all classes and "this is being a great difficulty because what the student learns in class cannot be consolidated with the directed activities of the book at home, unless it is photocopied or copy it on the blackboard for them to do, and this requires some time in class" (TEACHER P3, 2017). To get around the lack of the textbook, the teacher tries to demand solutions from competent people and, while it is not solved, works with photocopied activities, which students can take home, and also uses games in class to get students' attention.

Returning to the personal interest of the teacher in the subject of Mathematics, Professor P2 demonstrates that he has always liked Mathematics and this made him stand out and end up teaching this subject. Regarding his classroom practice, he highlights the need and importance of a characteristic that should be essential in the work of those who teach Mathematics, which is: always looking for a "facilitator means" that allows students to learn, complementing that this "means" should be found by the teacher together with the student.

Regarding lesson planning, the three teachers have different characteristics in their ways of planning. Teacher P1, plans his mathematics classes according to the skills that will be charged to students at the end of the school year in the external evaluation of SPAECE⁶; teacher P2, plans his mathematics classes adapting the script of the Portuguese classes routine proposed by PAIC; and teacher P3, follows the basic script of lesson planning (content, objectives, methodology, etc.) making

⁶ SPAECE (Permanent System for the Evaluation of Basic Education of Ceará) is a policy created in 1992 by the Secretary of Education of the State of Ceará (SEDUC) that carries out evaluation throughout the basic education network and, based on the results, creates incentive policies in order to offer education of equal quality to all.

interventions during classes with students who have some difficulties in relation to learning the content. Although the lesson plans are different according to each teacher, the three say that they have difficulties in complying with what is planned and that it is often not possible to fulfill the entire plan. Teacher P3 justifies the fact that he is not able to fulfill in some classes because the activities are often a little "pulled" and demand more from students, in addition to needing to make interventions in the classroom with students who have difficulties.

Considering if there are and what are the easiness of working with the teaching of Mathematics, teacher P1 considers that there are few facilities that he has contact at school, highlighting the use of games, for example, but emphasizes that often to build these games lack the necessary materials and this ends up making work difficult, which meets the quantitative difficulties pointed out in UNESCO (2016). Professor P3, on the other hand, highlights the existence of continuing education courses - offered by the Municipal Department of Education and PAIC - as a learning opportunity for the use of different teaching methodologies, such as games. Professor P2 points out that the facility is in the fact that the students are children, stating that: "their own age is a facility. When you win the student, you gain their trust, everything is better to work, that's because they are children" (PROFESSOR P2, 2017).

Already considering the challenges related to the teaching of Mathematics, we realize the existence of some already pointed out by the theoretical framework, such as teaching methodologies and resources that are used in Mathematics classes, but the teachers point out some news for our work that previously did not had been discussed as possible challenges for the practice of teaching Mathematics.

For teacher P2, the family also plays an important role in student learning, and this is where a new challenge for teachers arises: to make the family more interested in the students' learning process, as it is noticeable, for him, the students who have the best learning rates are those who have family monitoring at home and at school.

When he mentions the problem of indiscipline in the classroom, Professor P1 also emphasizes the importance of the role of the family in the students' learning process, corroborating what was previously put by Professor P2, also pointing out that there is a noticeable difference between students who have family support at home and those who do not have this partnership.

Da Costa Polonia and Dessen (2005) consider the school and the family as fundamental institutions for the formation of the student as a critical and reflective

citizen with regard to their social participation, in addition to promoting “[...] possible evolutionary transformations in the cognitive levels, affective, social and personality aspects of students” (DA COSTA POLONIA; DESSEN, 2005, p. 304). The authors still say that the good relationship between the two is essential to good school development and student learning, but the lack of this partnership can also trigger negative aspects regarding the education of students. For this reason, they consider that “the distancing from the family [...] can cause school disinterest and the devaluation of education, especially in the less favored classes” (DA COSTA POLONIA; DESSEN, 2005, p. 304).

The authors point out the need for the school to seek this partnership with the family and always keep them informed of the educational processes that involve them, because “even when the school institution plans and implements a good curricular program, student learning is only evident when this is surrounded by the attention of the family and the community” (DA COSTA POLONIA; DESSEN, 2005, p. 305), which meets teachers P1 and P2.

In order to seek this approach of school to families, teacher P2 points out his need to, in some cases, have to visit the families of some of his students to raise awareness of the importance of accompanying their children and keeping them in school, as many of the students they do not do their homework because they do not receive help to do it, and they even forget to take school supplies to classes.

According to Rios and Libânio (2012), home activities could be an instrument of connection between the school and the family, as they say: “we believe that it should be an activity that allows a link of integration between the school and the family and that it is a didactic support strategy in pedagogical work throughout the teaching-learning process” (RIOS; LIBÂNIO, 2012, p. 20). The homework activity, when well elaborated, can be an aid in the teacher's work regarding aspects of the students' learning evaluation, because, even from the mistakes, it is possible to think about new teaching strategies that will enable the comprehension of the students. However, according to the authors, there is a culturally constructed negative feeling when this activity is related to Mathematics, as it is soon thought of something difficult to solve and, without proper monitoring, it can fuel the rejection by the discipline.

Rios and Libanio (2012) also say that the issue of "error" should be well worked out with the students' families. Often the rejection of the activity for home comes first from the family, because at some times they may not have certain

knowledge and end up not being able to help the student in solving the activity. In these cases, it should be understood that the most important thing is not for the student to bring the activity to school correctly, but that they understand how it was resolved. In this sense, the student's error cannot be considered as something negative, but rather as something that will help the teacher to follow the development of the students and seek intervention mechanisms with those who present difficulties, for this reason mistakes should not be penalized, "[...] because such an attitude can cause a loss of interest and self-esteem of the student, while at the same time the possibility of intervening in the error positively will be disregarded, helping him to develop logical reasoning" (RIOS; LIBÂNIO, 2012, p. 21).

Still on the challenges encountered in the teaching of Mathematics, endorsing one of the difficulties pointed out by Soares (2009), Professor P3 highlights the lack of attention of students, pointing out how much this hinders the classes of Mathematics and their learning saying that "Having to interrupt the class to get their attention is a very stressful process, because Mathematics is a discipline that requires a lot of concentration" (TEACHER P3, 2017).

According to the answers provided by the three teachers, the use of different methodologies and resources are important because in addition to making the classes more interesting to draw the students' attention, they can also be essential tools in their learning, citing possibilities such as games, technological resources, concrete materials, drawing and the textbook itself.

What can be seen from the reports of the three teachers interviewed is that there are several challenges they face daily in class in relation to the teaching of Mathematics, but at no point does this seem to be seen as a demotivating factor and, yes, as an impetus to their work as teachers, mediators.

Some final notes

However, we must take into account the existence of the challenges that involve the daily practice of the teacher in the classroom, especially in relation to the teaching of Mathematics. This research aimed to study this theme and had as a general objective to elaborate understandings about the challenges faced in the daily classroom by teachers in the early years, in relation to the teaching of Mathematics, and how they deal with these challenges.

From the analysis of interviews conducted with three teachers from the initial years who work in the municipality of Icapuí-CE, we realize that the challenges arise in the practice of the teacher since the beginning of his career, especially when

related to his initial education. Sometimes this occurs because there is, in this process, an emphasis on the theoretical aspects, making few relations between this foundation and classroom practice, the reality that teachers in training will face in their future profession, which meets the guidelines and research that point to the need to better articulate theory and practice.

It was possible to point out from the narratives that these teachers seek different tools and strategies in the classroom to work with the teaching of mathematics as a way of attracting students' attention and promoting learning, which is one of the challenges they face. But often using these different resources or teaching methods in their classes provides new challenges, especially when the school does not have the materials necessary for the teacher to use them in the classroom.

Another factor that appears as a challenge to the teacher's work is the student's indiscipline, which results in a lack of attention, parallel conversations, or other actions that interfere negatively with the progress of the classes and especially with their learning. This indiscipline, according to the teachers interviewed, is often the result of parents' failure to approach children's school life, which negatively influences learning.

Faced with these different challenges that are faced on a daily basis, we note that every day teachers seek different strategies and instruments in an attempt to add to or complement their classroom practice, making sure that these challenges do not hinder the progress of classes or the performance of students, emphasizing continuing education, the search for different teaching resources and strategies, dialogue with students, parents and the school body itself as some of these forms of confrontation.

From the posture of teachers, we can understand that at no time should daily challenges in the classroom be considered insurmountable barriers in the teacher's practice, since they can limit his action in the classroom. We must face challenges in the teacher's practice from the very meaning of the word: something that "challenges", because it makes it possible to go beyond the point at which one finds oneself to seek the necessary solution and this adds to the experiences in the teacher's practice and in the students' learning. This is in line with what Nacarato, Mengali and Passos (2009, p.38) states, because, for them, "[...] even with the most adverse working conditions and gaps in training, many teachers who work in the initial grades reveal a commitment to the learning of their students and are always

open to new learning", in other words, they are teachers who are open to leave their comfort zones and go to the risk zones.

We understand, therefore, the importance of doing this work as something that will highlight the existence of the challenges in the practice of teachers in Mathematics classes in the initial years, but above that, the various possibilities of facing them, pointing out both the need for teachers' personal interest in solving them and the importance of public policies for the training of these teachers, always valuing the quality of these processes, whether they are initial or continued.

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