

## **Beliefs and disbeliefs towards education: case study with graduates who did not chose teaching as a profession**

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### **Abstract**

This paper is the result of a research carried out with 13 graduates of a Mathematics Degree course of a Federal Teaching Institution that did not choose teaching as a profession when graduation. Its purpose is to understand the beliefs and disbeliefs in relation to the Education of these graduates and also to know some of the (dis) motivations that led them to give up teaching as soon as they finished their degree. Of qualitative nature, the type of research was characterized as Case Study and the analyzes occurred through the Discursive Textual Analysis, giving rise to six categories: internal school processes; To overcome the traditional method of teaching; The relationships between the school and the family; The relationship between school and society; The devaluation of the state; And the hope of transformation through Education. The analyzes of the emerging categories of the answers allow to realize that the disbeliefs surpass the beliefs, which suggests to be one of the factors that collaborate for the abandonment of the teaching career soon after the conclusion of the degree. However, despite the exposed disbeliefs, the Egresses still show hope that Education is a source of social transformation.

**Keywords:** Egressos; Beliefs; Disbeliefs.

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## **Crenças e descrenças em relação à educação - estudo de caso com egressos de licenciatura que não escolheram a docência como profissão**

### **Resumo**

Este artigo é resultado de uma pesquisa realizada com 13 Egressos de um curso de Licenciatura em Matemática de uma Instituição Federal de Ensino, que não escolheram a docência como profissão assim que finalizada a graduação. Tem por objetivo compreender as crenças e descrenças em relação à Educação destes Egressos e também conhecer algumas das (des)motivações que os levaram a desistir da docência logo que concluíram a licenciatura. De natureza qualitativa, o tipo de pesquisa caracterizou-se como Estudo de Caso e as análises ocorreram por meio da Análise Textual Discursiva, originando seis categorias: processos escolares internos; preocupação em superar o método tradicional de ensino; as relações entre a escola e a família; a relação entre a escola e a sociedade; a desvalorização do Estado; e a esperança de transformação por meio da Educação. As análises das categorias emergentes das respostas permitem perceber que as descrenças superam as crenças, o que sugere ser um dos fatores que colaboram para o abandono da carreira docente logo após a conclusão da licenciatura. Porém, apesar das descrenças expostas, os Egressos ainda demonstram ter esperança de que a Educação é fonte de transformação social. **Palavras-chave:** Egressos; Crenças; Descrenças.

## **Creencias y incredulities hacia la educación - estudio de caso con graduados que no eligieron la docencia como profesión**

### **Resumen**

Este artículo es el resultado de una encuesta realizada con 13 egresados de un curso de Licenciatura en Matemáticas de una Institución Federal de Enseñanza que no eligieron la docencia como profesión tan pronto como finalizada la graduación. Tiene por objetivo comprender las creencias y las incredulidad en relación a la Educación de estos egresados y también conocer algunas de las (des) motivaciones que los llevaron a desistir de la docencia tan pronto como concluyeron la licenciatura. De naturaleza cualitativa, el tipo de investigación se caracterizó como Estudio de Caso y los análisis ocurrieron por medio del Análisis textual Discursivo, originando seis categorías: procesos escolares internos; Preocupación por superar el método tradicional de enseñanza; Las relaciones entre la escuela y la familia; La relación entre la escuela y la sociedad; La devaluación del Estado; Y la esperanza de transformación a través de la Educación. Los análisis de las categorías emergentes de las respuestas permiten percibir que las desventajas superan las creencias, lo que sugiere ser uno de los factores que colaboran para el abandono de la carrera docente luego de la conclusión de la licenciatura. Sin embargo, a pesar de las desavenencias expuestas, los Egresos todavía demuestran tener esperanza de que la Educación es fuente de transformación social. **Palabras clave:** Egresos; Creencias; Descendientes.



## *Introduction*

The central theme of this paper is the discussion about the beliefs and disbeliefs towards Education, pointed out by a group of 13 Graduates of a Mathematics Graduation course of a Federal Educational Institution, who did not choose teaching as a profession as soon as they had graduated. Its main goal is to understand the beliefs and disbeliefs towards the Education of these graduates and also to identify some of the (dis)motivations that led them to give up teaching as soon as they finished their degree.

In this way, the problems that guide this research can be presented as follows: *What are the beliefs and disbeliefs, in relation to Education, Mathematics Degree graduates who have not opted for teaching have?*

Next, the theoretical assumptions are presented, as well as described and grounded the methodological procedures that underpin this investigation, where the choice is justified by the qualitative approach (BOGDAN; BIKLEN, 1994) and by the Case Study as the type of research (LUDKE; ANDRÉ, 1986). We also present the research subjects and the Discursive Textual Analysis – ATD (MORAES; GALIAZI, 2013) as review procedure. As a central part of the paper, the categories that emerged from the questionings made to the graduates were presented, analyzed and discussed, which brought contributions to begin an understanding, from their beliefs and disbeliefs, of possible motivations for dropping out of teaching as soon as they are graduated.

## *Theoretical assumptions of the research*

Belief can be considered a term with different meanings, depending on the author or the conceptions of who uses it. For the online dictionary of Portuguese language, belief means the “[...] action of believing in the truth or in the possibility of something [...] Intimate Conviction; an opinion adopted in faith [...]; What is considered true: ideological beliefs.” (2017. Our translation).

For Ponte (1992), beliefs do not have empirical support that validates them, and are only creations of the human imagination, constituting a primitive form of knowledge, exclusively private matter. The belief concept adopted in this article converges to the fact that beliefs are the result of personal issues tied to other aspects such as professional and academic life experiences. As in the case of the interviewed graduates, it is hypothesized that their beliefs mentioned in this article are the result of experiences in the condition of graduates who developed their internships at different levels of Primary Education and who have had contact with teachers and leaders of schools of different social realities.

It is necessary to consider that the experiences with the Practices as Curricular Component, compulsory activities developed since the first term of the course, allowed these graduates to enter into diverse educational realities, which also contributed to the elaboration of the beliefs that they present today about Education. In addition, it is assumed that these beliefs are also the result of the general formation of these graduates, which was composed of numerous discussions, exhibitions of experiences, participation in events, study of theoretical references and educational policies.



In this sense, Ponte (1992, p.8. Our translation) states that the “[...] role of beliefs is very strong, being conditioned by the degree of impregnation of social culture, scientific and professional knowledge and personal experiences.” From this point of view, one agrees with the author, since beliefs are believed to be the product of a tangle of experiences of a personal, social, scientific and professional nature.

As far as beliefs are concerned, Ferreira (1998, p.20. Our translation) goes further, and explains that “[...] attitudes, representations, values, conceptions and beliefs have very close characteristics, and sometimes they are intertwined.” Similarly, Thompson (1992) explains the term conceptions “as conscious and unconscious beliefs, concepts, meaning, rules, mental images and preferences” (Thompson, 1992, 132. Our translation), that is, for the author, beliefs are terms that also constitute the subjects conceptions.

In this way, it is summed up that when the term belief is quoted in this paper, it is not a conception of common sense, result only of personal experiences, but of something that carries experience of different scopes, being them personal, academic, social or professional. It was first inferred that the beliefs of these graduates are the result of their qualification and experience in academic life, that is, in the sense that one aspires to know the beliefs of a certain group about a subject, what is expected is knowing what this means to him and how this belief crystallized from the experience he had.

Thus, the term beliefs is conceived in this paper as the set of preconceptions, ideologies, ideas and knowledge constructed by the group surveyed during graduation, and also permeates or, in a way, influences the decision of not choosing teaching as a profession.

From the conception of belief adopted, it was also necessary to expose the theoretical premises that underlie the discussions presented in this paper, since it is believed that the object of study is highly influenced by the preconceptions, conceptions and beliefs of the researchers (CRESWELL, 2014). Thus, the main ideas that guide this research are internal school issues, such as overcoming the traditional way of teaching and the importance of planning; the relations of the school with the different spheres of society, in this case, the family and the State. In addition, it is important to highlight the importance of education in understanding the problems of society, avoiding a simplistic or romantic view, but contributing to overcoming social injustices and promoting the improvement of the society in which the subjects are inserted. These are the items that supported the further analyses.

In the initial training courses, one point that generates interesting discussions concerns the traditional teaching model and, consequently, the urgent desire to overcome it (LEÃO, 1999). In this sense, Rosso and Tagliber (1992, p. 38), based on Piagetian theory, argue that in order to overcome the traditional model, teachers should practice a new methodology, supported by theoretical and practical knowledge and mastering the contents to be taught. Iglesias and Pazin-Filho (2014) argue that there is a growing demand for innovative ways of teaching, especially if teachers assume “[...] an ethical, critical, reflective and transformative pedagogical practice, going beyond the limits of purely technical assistance, in order to effectively reach the qualification.” (IGLESIAS; PAZIN-FILHO, 2014, p. 285. Our translation).

This overcoming of the traditional teaching model can be accomplished through the use of technologies, for example, (BICUDO; BORBA, 2004; PEREIRA; PEREIRA;



CARÃO, 2012; BURAK; PACHECO; KLUBER, 2010) especially with student-centered teaching. The use, especially of the internet during classes, allows conditions for both teacher and student to establish a new form of relationship that can be independent, that is, the use of technology “gives voice” to the student.

Pereira, Pereira and Carão (2012) argue that the use of technologies allows the teacher to “[...] observe the difficulties in the students learning process and seek to use the resources of computing in solving such difficulties” (PEREIRA; PEREIRA; CARÃO, 2012, p.4. Our translation). In this situation, the teacher assumes the role of mediator of the teaching and learning process. In this perspective, the student is considered the center of the process and not merely a receiver of contents that are sometimes understood as something that can be transmitted and not constructed. This assumption is the first step towards overcoming the traditional model of education (ROSSO; TAGLIEBER, 1992. Our translation).

All of these issues are intertwined in curriculum development and especially in teacher planning moments. Luckesi (2001) discusses the importance of planning, in that he punctuates it not as something of a purely technical production, but which needs to reflect on the type of citizen that one intends to educate, aiming at which society is idealized from Education.

So that Education be valued, it is understood that this should be, first and foremost, a priority of the State, especially as regards the investment and valuation of teachers. In a study carried out with a group of teachers from a state public school system who dropped out of teaching, Lapo and Bueno (2003) inferred:

What is quite clear is that the salary issue, although it appeared as the most mentioned reason, was in most cases accompanied by other reasons, mainly related to the lack of prospects for professional growth and the poor working conditions, clearly due to the way the state manages education and public education. (Our translation) (LAPO; BUENO, 2003, p. 9. Our translation).

That is, the lack of teacher appreciation has contributed to the abandonment of the classroom. Rosa and Vestena (2012) point to a devaluation of the State in relation to teachers, and that little progress has been made in improving working conditions and purchasing power and delimiting what is the competence of teachers, insofar as there is a transfer of responsibility for the education of children from families to the teacher.

Having said that, it is necessary to discuss the importance of family relationships with the School. The valorization of school education by the family and its role in education is discussed by Oliveira and Araújo (2010), insofar as they address the interdependence between the two of them. The authors carry out a bibliographic review in which the conceptions that permeate this relationship are explored, investigating them based on research that reports the point of view of those involved in the process, and showing situations of decreased family participation in the children’s school life as measured inasmuch as they evolve in the grades.

It is possible to perceive, from the literature and the own experience of the authors of this paper, that the relation between the family and the school is still very restricted. Parents tend to pass on to school many of their responsibilities in raising their children, while many teachers and leaders understand that their commitment to students is res-



stricted to school contents. Thus, students are at the core of a relationship that is practically nonexistent, which suggests a loss to their integral schooling.

Finally, the overcoming of the traditional model, the teacher's commitment to planning and to the student, as well as the valorization of Education by the State, society and the family presupposes an overcoming of the problems that are so much discussed in the scope of teacher training. That is, some specific and historically established situations, if overcome, can contribute to the formation of citizens more conscious and committed to Education.

### *Methodological procedures*

Of qualitative nature, this research is based on the perspective of Bogdan and Biklen (1994), whose ideas allow to understand the descriptive information resulting from the direct relation of the researcher to the context and the researched circumstances. This choice is justified by the fact that the authors are licensed, where three of them are professors of a licentiate course, one of whom was a teacher of the said graduates during the degree and another was a colleague of the graduates and lived with the others during their graduation.

For Godoy (1995), studies of a qualitative nature are primarily descriptive, being the natural environment the direct source of data. As for the researcher, this is a fundamental instrument of research, and uses the induction to analyze their data and is concerned with the process, not only with the product and/or search results.

This research can also be characterized as a naturalistic-constructive approach, as stressed by Moraes (2007, p.14. Our translation), “[...] are essentially *case studies*, not intended for statistical generalization, but mainly aimed at understanding the phenomena investigated.” Therefore, the type of research considered was the *case study*.

Lüdke and André (1986) consider the potential of the *case study* for Education, considering it the study of a case, being it simple or complex, in which the research is directed towards what this case has of particular within the universe which composes it. Likewise, Bogdan and Biklen (1994) point out that case studies focus on a specific group of individuals, which in this case is configured by a group of graduates from a degree.

Once the Egresses were known, an initial conversation was established via social networks - *Facebook* and *WhatsApp*. Subsequently, questionnaires were sent to 37 graduates of Mathematics from a Federal Teaching Institution, who are the group of all the students trained by the institution in the mentioned course. These questionnaires were intended to understand the professional performance and the beliefs or disbeliefs that remained after graduation in relation to Education and teaching. From the 37 graduates, 25 returned the answers, where it was found that 13 are out of the classroom, seven are working as teachers and six are in Masters courses, and one graduate is part of the last two groups mentioned.

The answers of those who did not opt for teaching as a profession were chosen for analysis because they considered that the number of graduates who chose to work in a profession other than teaching was relatively high, making up more than 50% of the



questionnaires answered. Thus, to answer the research question analyzed: *What is your view of school and education (beliefs or disbeliefs)?*

For the analysis of the responses, it was used the Discursive Textual Analysis (DTA) (MORAES; GALIAZZI, 2013), since it is understood that this method favors the systematization, comprehension and interpretation of the responses described by the subjects. For authors:

[...] a self-organized process of understanding construction in which new understandings emerge from a recursive sequence of three components: deconstruction, unitarization, establishment of relationships between unitary elements, categorization, and grasping of the emerging new in which new understanding is communicated and validated. (MORAES, 2013, p.192. Our translation)

The answers of the Graduates went through a process of deconstruction, or unitarization. Subsequently, the categories of analysis were constructed in order to elaborate new understandings, that is, the metatexts. Thus, the categories organization sought to find arguments that answered the initial problem.

Thus, the analyzes were composed through three movements ranging from unitarization, to categorization and construction of metatexts. The process of unitarization consisted in organizing the answers of the Graduates in a table with three columns. Each answer was placed in the right-hand column and was later deconstructed, analyzed and synthesized (a synthesis was written in the left column). In the next step, these syntheses were analyzed, again synthesized and written in the left column, resulting in what is characterized by sense units. For the authors, this is an important moment of interpretation, since the researcher is impregnating itself with information and creating conditions of possibility for the manifestation of the phenomenon. Next, the fragments of the constructed table are presented, in which the unitarization of the answers of Graduate 10:

Table 1 – Graduate 10

Sense Units	Deconstruction/Synthesis	Initial Answer
School and education reflect the inequality of society	School and education reflect the society that is unequal.	The school and education looked at from the inside out, as I had the opportunity being inside the classroom, reflect the society that is unequal.
Lack of family interest	In education there is corruption and negligence on the part of leaders and teachers	I believe that there is, as in any other sector, much corruption and negligence on the part of the leaders and teachers
Unmotivated, negligent and unqualified teachers	Lack of interest from parents in demanding quality education	and above all the parents' lack of interest in seeking and demanding quality education.
	Minority of qualified teachers concerned with the work they perform	On the other hand, a minority of qualified teachers who are really concerned and involved with the work they do.

Source: the authors

After this step, the categorization was performed, with a search for approximations between the sense units, at which point the categories emerged. At first, the initial categories emerged which, after reorganization and regrouping, gave rise to the final



categories, which in turn resulted in the metatexts. These metatexts concretized the analyzes, insofar as the authors described, interpreted and analyzed the statements in light of the theory.

Thus, from the analysis of the answers, it was possible to list six main categories that were not established *a priori*, but emerged from the answers: internal school processes; to overcome the traditional method of teaching; the relationship between school and family; the relationship between school and society; the devaluation of the State; and hope of transformation through education. It is important to point out that the answers of the Graduates are presented in italics, where each one is identified by the letter G followed by a number, while the citations of the theoreticians that base the analyzes appear in the paper in general according to ABNT norms.

### *Analysis and discussions*

In relation to the questioning about the beliefs and disbeliefs about Education, we present, next, the analysis of the answers through the ATD, organized in 6 units of analysis. At the moment of the organization of the categories, the authors chose to present them from a composition that allowed the reader a linear view of the responses of the Graduates, beginning with the presentation of beliefs and disbeliefs about more internal characteristics, ranging from placements on the internal school organization and concern to overcome the traditional model of teaching, evolving into the broader assertions, such as the perceptions of the relationship between school and family and school and society, the devaluation of the State towards the profession and the affirmations that there is still hope for Education.

#### *1. The internal school processes*

In this first category the authors describe and discuss the beliefs or disbeliefs of the Graduates in relation to what was characterized as “**internal school processes**”, that is, everyday classroom situations, planning issues, difficulties with Mathematics and excess of bureaucracies.

For G9, in addition to the teacher’s important role in teaching and learning activities, planning is an important action mainly because mathematics presents itself as a difficult subject for most students: *“The teacher has a fundamental role in the teaching and learning process, and a good prior planning of learning situations is essential, especially when it comes to mathematics, because it can be challenging for many students.”*

Basso (1998) argues that although the teacher has the autonomy to choose the methodologies and pedagogical activities that he believes are more appropriate for each class based on his needs or difficulties, such changes are not a reality, since there is a lack of autonomy of the teachers. This lack of autonomy basically refers to their schooling, which indicates that the solution to this type of problem would be significant if there were “[...] adequate teacher training and a clear understanding of the meaning and meaning of their work.” (BASSO, 1998, p.3. Our translation).





According to Luckesi (2001), it is necessary that the teachers do not consider the planning only as something technical, but reflect on the type of citizen they want to educate, their needs and in which society they are inserted. For the author:

Planning [...] will be an act at the same time political and social, scientific and technical: political and social, insofar as it is committed to social and political purposes; to the extent that it can not plan without a knowledge of reality; planning requires a definition of efficient means to obtain results. (LUCKESI, 2001, p.108. Our translation).

In addition, there is a more global view of school, whose G10 observation demonstrates a concern about excessive bureaucracies and formalities:

I realize that in the current reality the school is too departmentalized, the vision of the whole is lost. [...] managers take time to prepare reports and to comply with the rules and regulations of education systems, guidance departments and administrative departments are primarily concerned with formalities. (G10)

Souza (2009), based on a theoretical study, builds a concept of democratic school management, defining it as

[...] a political process that is broader than just decision-making and is sustained in dialogue and otherness, in the active participation of the subjects of the school universe, in the collective construction of rules and procedures and in the constitution of channels of communication, in order to extend the domain of information to all the people who work at school. (SOUZA, 2009, p.136. Our translation).

For G11, it is necessary a “*Reorganization of the school curriculum (because there is much content for little time)*”. This situation, commonly observed in schools, is explained by Castro, Tucunduva and Ams (2008), who posits that the teacher mistakenly considers a lesson plan the relationship between the collection of content and the time it has to teach it.

Often teachers exchange what their planning would be for choosing a textbook. Unfortunately, when that happens, most of the time, these teachers end up becoming simple administrators of the chosen book. They stop planning their work from the reality of their students to follow what the author of the book considered as most indicated. (MEC apud CASTRO et al, 2008, p.56. Our translation).

It is possible to observe that, in relation to the processes that occur in the inner spaces of the school, there is a wide range of (dis)beliefs presented by the Graduates, which point out situations considered by them as problems or obstacles. The issue of excessive bureaucracy, especially in management, as well as excessive content, stands out in situations that, according to them, jeopardize the good progress of school routine. Regarding the belief that it is important to plan, this is considered an important observation, since in undergraduate courses the matter is not common in discussions. This affirmation indicates that the Graduates are aware of the importance of planning so that the process



of teaching and learning is realized, which also refers to the fact that in their initial schooling there was concern and discussions about this theme.

## 2. *Concerning overcoming the traditional teaching model*

In this category four subcategories are presented that are related to the overcoming of the traditional model of education: the concern and criticisms regarding the traditional model; the importance of using technologies; the importance of keeping the student as the central focus in the teaching and learning process; and criticism regarding teacher training.

What is the ideal methodology for teaching mathematics? Is it a methodology that places the student as protagonist in the learning process, such as games, technologies, mathematical modeling, among others? It is difficult to answer exactly what the ideal model is, but there is a consensus on the teaching of Mathematics: the concern and criticism on the traditional model. Leão (1999) points out that the traditional method is an old practice and, at the same time, still present in schools:

The theories of education that guided the traditional school are confused with the very roots of the school as we conceive it as an educational institution it is not false to affirm that the traditional teaching paradigm was one of the main ones to influence the formal educational practice, as well as the one which served as a reference for the models that have succeeded through time. It is interesting to realize that the traditional school continues in evidence until today. (LEÃO, 1999, p. 188. Our translation).

Souza, Iglesias and Pazin-Filho (2014) point out some characteristics to the traditional model of education, being this a model that does not recognize peculiarities according to the student's age group, that is, the method used with children is the same applied to adults: "It is usually restricted to cognitive knowledge, reaching at most the demonstration of ability." (SOUZA; IGLESIAS; PAZIN-FILHO, 2014, p. 286. Our translation). Thus, the role of the teacher is to transmit information, while that of the student is passive and is limited to absorbing information.

The authors point out some advantages of the traditional model in comparison to the active model, for example, that such model requires little work on the part of the teachers, involving the work with large groups and presenting a low cost and covering all the content to be acquired on a topic (SOUZA; IGLESIAS; PAZIN-FILHO, 2014. Our translation). Perhaps it is precisely because of these advantages that the traditional method is still so widely used. It should be noted that the same authors point out that the disadvantages outweigh the advantages, because with the traditional method one does not even have certainty that the student has learned in depth.

The term method, or the active model, has been repeatedly cited as having different characteristics from the traditional model:

The active methods assume a solid theoretical, psychological and pedagogical formation to know clearly the nature of the pedagogical act, to understand it as a social practice that demands scientific foundations. Referring students towards the active construction of knowledge presupposes that teachers have practiced



this methodology. But to the teacher it is not enough only the theoretical-practical knowledge of how to teach, one must also be solidly grounded in the contents to be taught. (ROSSO; TAGLIEBER, 1992, p. 38. Our translation).

There is also the assertion that an “*approach of teachers and contents of different disciplines (interdisciplinarity) is necessary*” (G11). It is believed that, because they are aware of these characteristics and limitations of traditional teaching, some graduates end up saying that Education should improve in the sense of becoming less traditional, more dynamic and student-focused, with more interdisciplinary activities.

For Fazenda (2008), when interdisciplinarity is defined only as a junction of disciplines, there will be only formatting of curricula. The author suggests that interdisciplinarity be defined as an “[...] attitude of daring and search for knowledge” (FAZENDA, 2008, p. 94. Our translation), privileging, in this process, aspects that involve “[...] the culture of the place where teachers are graduated” (FAZENDA, 2008, page 94. Our translation), which leads to a more comprehensive discussion, placing that the question of interdisciplinarity does not only demand the will to do, but also addresses aspects related to teacher training.

G12 answer, however, refers to the important role of technology in overcoming traditional teaching, where the subject states:

I believe in an increasingly dynamic and less traditional education, because in the era we live, we are facing advanced technologies and they will certainly be much more improved over the years. In this sense, the teacher must follow up and become more and more involved in quality education.

The speech of this Graduate demonstrates the belief that the **use of technologies** would aid in the development of more interesting and quality classes. Several authors have addressed this issue, such as the case of Burak, Pacheco and Kluber, for example, which they affirm:

The ways of using the computer and the internet must be considered, since these are instruments that can create conditions for overcoming the traditional model of teaching, since they can provoke new elaborations, independent and diversified, for the teacher and the student (BURAK; PACHECO; KLUBER, 2010, p. 211. Our translation).

In addition, studies point out that it is necessary to bring school closer to society, without denying the advances that occur in this articulation, and preventing it from remaining in a stagnant system that is alien to innovations, after all, the “[...] informatics, the constant use of the computer has become a necessity of the globalized world in which we live, the institution of education, in the mission to prepare and be responsible for the individual for life brings the need not to close the eyes to the reality in which we live.” (PEREIRA; PEREIRA; CARÃO, 2012, p. 5. Our translation).

However, in order for a teacher accustomed to using the traditional method of teaching to use Information and Communication Technologies (ICTs), it is necessary for the teacher leave his comfort zone and to act in a risk zone



[...] where loss of control is something that occurs constantly. In addition to the technical problems that often disrupt the progress of proposed activities, there are unpredictable questions that for the vast majority of teachers are the hardest part of dealing with student interaction” (BICUDO; BORBA, 2004, p. 284. Our translation)

And it is precisely because of this that many teachers are afraid to use the technologies. However, it is necessary to be aware that its use can be an ally to the student’s cognitive development, allowing him to learn from his mistakes and in interaction with his colleagues (TOLEDO; TOLEDO, 2009. Our translation).

Another subcategory regarding the overcoming of the traditional method of teaching is that **the focus of teaching is on the student**, or that the student is the center of the teaching and learning process. In this sense, G10 states: *“I believe that in order to evolve, it is necessary for the School to be concerned with the results of its students and to focus on the development of learning.”* In order for the student to become the center of the teaching and learning process, there must be a change from the traditional model to the active teaching method, in which the teaching role is interactive, that of the student is active and responsible for the construction of his own critical knowledge. In defending the use of active methods, the teacher “[...] denies the sense of activity simply as concrete actions, devoid of abstractions (reflection of action), or as the structuring of images of the real, or use of audiovisual resources or scheduled education.” (ROSSO; TAGLIEBER, 1992, p. 38. Our translation). In the active methods, the specificities of each student are considered, although this method consumes much more time of the teacher in the preparation, the application and the evaluation and, because of this, many teachers choose not to use it (SOUZA; IGLESIAS; PAZIN-FILHO, 2014. Our translation). It is at this point that other points commented by the public of this research emerged: the improvement of the training courses.

Three Graduates pointed out that Education and therefore training courses have much to improve, because according to G3, *“there are teachers who believe that a quiet room with students lined up and those exercises of fixation is the best form of fixation, thus forgetting to instigate their students to seek knowledge.”* Another research subject states that *“[...] a minority of qualified teachers who are really concerned about and involved in the work they do”* (G6). A third Graduate converges for the same thought, but shows to be more optimistic:

I believe that education has much to improve, but I see that in the last decades, strides have been made towards this advance. The current teacher training courses show a more humanized view of the school where students are at the center of the teaching process, which I believe is the first step towards learning (G2).

At no time the Graduates specify whether this training would be in an initial or continuing training course, leading to discussion for both spheres. In this way, the initial courses should focus on methodological aspects, conduct discussions about the characteristics of the methods and their positive and negative points. Ongoing training courses should include discussion situations that would allow teachers who had a fragile back-



ground to have the opportunity to improve and adapt their practices in the classroom. However, analyzing the answers of these graduates, they are believed to have had a good initial education in regard to the beliefs listed in this category.

In this way, it is possible to perceive that interdisciplinarity should also occur in teacher training courses, not only in the theoretical part, but in practice, since what is experienced can be more easily understood. Conceiving an interdisciplinary teaching suggests the overcoming of a linear, unilateral and content-based view, since collaboration among professionals from different areas may be based on the objective of teaching learning. It is gratifying the perception that, in this group of Graduates, the concept of interdisciplinarity emerges as a belief of something positive for student learning.

Thus, the concern with the interdisciplinarity and the clarity that it is necessary to use ICTs, as well as the perception that the student is the center of the educational process, makes clear that these graduates have a good awareness regarding the overcoming of the model traditional teaching methods, as well as ways of doing it. In addition, they demonstrate a concern with training problems, which suggests a good awareness of themselves as already graduates and the problems they may have had in their initial training.

### *3. Relationship Between School And Family*

In this category two subcategories emerged from the answers of the Graduates, in which the relationships between the family and the school were seen in two distinct ways: the idea that the school and the family need to “hold hands”; the belief that the family has no commitment to school.

The relationships established between the family and the school are a topic that is increasingly under debate, which can be seen through government programs that are on the rise, such as the case of ‘Family Day at School’<sup>1</sup>, which in 2016 was transformed into a law by the Government of the State of Santa Catarina and by the Legislative Assembly in 2017, in its second edition. According to news published on the website<sup>2</sup> of the Santa Catarina State Secretariat of Education, this activity promotes lectures, work exhibitions, cultural and recreational activities aimed at strengthening the ties between parents, children and teachers and to draw the attention of the family to its importance of school. The Secretary of State for Education, Eduardo Deschamps, affirms that the participation of the family in the school life for the students is fundamental to improve the quality of Education.

Exactly in this sense, two Graduates point to **the relevance of family and school to go together** and build a quality education. G5 says that:

School: Teaching, learning, inserting cultures, welcoming environment / Education: Character, ethics, citizenship, respect. It is at home that the child must learn how to behave, being polite to people. The school should welcome all students

1 Law nº 16.877, January, 15, 2016.

2 Available on: <<http://estudanteonline.sed.sc.gov.br/index.php/12-aluno/aluno-artigo/67-sc-realiza-a-segunda-edicao-do-dia-da-familia-na-escola>>. Accessed on June, 27th. 2017



creating environments conducive to student interaction. For a wider education and quality family and school should work together.

Similarly, G12 points out:

Many of the concerns in education, I believe to be reflection of an education that already comes from home. As the Educational Philosopher Sérgio Mário Cortela says: “It is not the family that helps in the education of your children. It is the school that helps your family in the education of your children, doing schooling”. Therefore, the family is a fundamental point so that teaching and learning can walk side by side.

Oliveira e Araújo (2010, p. 101) point out that school and education “[...] have a close relationship, even though it does not create a relationship of dependence, since there is a distinction between school education and education that takes place outside of school”, showing that the school and the family should be close, but should not be condensed into attributions for a single institution.

Other Graduates point exactly to **the lack of commitment of the family to the school**, as can be seen below:

*Education: I believe that is the way to change the current society, but, as a teacher, I have a feeling of helplessness under the present circumstances, I believe that parents lack awareness to educate their children, which hand over this responsibility to school, you're not ready to meet the demand (G10).*

Another Graduate argues: “I believe that education today is the main formative element of the human being. And it is not a particular function of the school, but rather of the family and social environment.” (G4), and a third interviewee cites the closeness of the family to school as a way of improving the quality of teaching: “Greater Involvement of the family; more commitment and responsibility on the part of the students.” (G11).

After the statements of the Graduates, it is evident that everyone agrees that the family and the school must go hand in hand, but for this the family needs to be interested and aware of its importance in the school environment and in the improvement of the quality of the teaching. However, Oliveira and Araújo (2010) warn:

School and family have their specificities and their complementarities. Although one can not assume them to be completely independent institutions, one can not lose sight of their institutional boundaries, that is, the domain of the object that sustains them as institutions. [...]The divergence between school and family is the task of teaching, and the first has the function of promoting the learning of socially constructed knowledge in a given historical moment, of expanding the possibilities of social coexistence, and of legitimizing a social order, while the second has the task of promoting the socialization of children, including the learning of behavioral patterns, attitudes and values accepted by society. (OLIVEIRA; ARAÚJO, 2010, p. 101. Our translation).

In this way, it is understood that although the family and school diverge in the task of teaching, both have the task of contributing in the formation of the students in so-



cial, economically and culturally active beings. The problem of the relationship between school and family can be traced back to the movements of blame among them. This is because the school blames the family for not participating in school actions and the family blames the school for not promoting situations that facilitate interaction between both parts, and this is why the relationship established between them entails, in some problem “[...]thus, it does little to enable the two institutions to build a partnership based on positive and rewarding factors related to students’s learning, development and success.” (OLIVEIRA; ARAÚJO, 2010, p. 107. Our translation).

In this category, it was interesting how the Graduates expressed their beliefs about the relationship between the family and the school, since this was observed in two distinct ways, but not contradictory or mutually exclusive: at the same time, the belief that school and family need to be ‘hand in hand’ and the perception that the family has no commitment to school.

Thus, this category brings very significant beliefs that go beyond the walls of the school and the simple relationship teacher x student or student x object of knowledge, noting also the importance of the family in school processes. This belief is impregnated with meanings and also with the preconceptions of the Graduates, since it shows that, even though they were only recently graduated and had little experience of school and classroom, they observed the importance of the family in the process of teaching and learning.

#### *4. The Relationship Between School And Society*

The fourth category established is the relationship between school and society, in which two views emerged. First, the belief that the school is committed to educating citizens and also the (dis)belief that the school reflects the inequalities and problems of society.

To begin the discussion on this category, Klein and Pátaro (2008, p. 2. Our translation) are quoted as saying that “[...] the importance of school in our society can be measured by the time our children and young people spend there, at least 12 years of their lives. This is the only compulsory social institution that reaches all the new generations”.

The first belief of the Graduates about the relationship between school and society is that **the school is committed to forming citizens**. The G10 affirms that it is an *“Institution responsible, primarily, for the TEACHING, but also has a role of educating and forming citizens”*. G9 corroborates that *“Education is one of the central pillars of society and it is through the School that it is formally constituted”*. G1 points to the fact that *“the school is one of the bases of society, as is the family. In this way I see that the school is very important, that the experiences that the students have in the school environment will be lifelong”, and G3 writes: “I believe that the school is one of the most important places in a society, for it is there that critical citizens capable of improving the environment in which they live..”*.

Leite (1989) concurs, exactly, with the positioning of the interviewees, that the school is a fundamental institution for the education of citizenship, being its understanding of citizenship broader: the exercise of rights and duties as citizens, conscious



participation and effective criticism throughout the social process, in addition to stating that “[...] schooling plays a decisive role in the process of citizenship education, especially for students from the poorest sectors of society.” (LEITE, 1989, p. 3. Our Translation).

The second belief of the interviewees about the relationship between school and society is that **the school reflects the inequalities and problems of society**. G6 states that:

The school and education looked at from the inside out, as I had the opportunity of being inside the classroom, reflect the society that is unequal. I believe that, as in any other sector, there is a lot of corruption and negligence on the account of the leaders and teachers and, above all, the parents’ lack of interest in seeking and demanding quality education.

G7, more directly, cites that *“education is reproduced through society, today we face various problems in this, changes in family relationships, violence, disrespect, corruption, teacher devaluation and lack of limits.”*

From these answers it is possible to affirm that for the school it is a social institution, composed of teachers, leaders and students who participate in the society in its political, economic and cultural spheres. It would be impossible for the society’s problems to fail to reflect in school, since people who provoke or otherwise suffer from these social problems are present in schools. Klein and Pátaro (2008) cite that:

The school can become an institution that gathers and diffuses the efforts of different instances of the community aiming at the improvement and the social transformation. This transformation implies, on the one hand, the possibility of effective democratic participation of other school and extra-school agents in the discussion and in the search of coping with common problems; on the other hand, in the permeabilization of the school curriculum to the problems of the community, that is, **to bring themes and discussions into the classroom through projects, linked to the reality and problems of the community** (KLEIN; PÁTARO, 2008, p. 15. Our translation).

It is thus seen that Klein and Pátaro (2008) indicate that, in addition to the social problems reflected in the school, it would be interesting that these problems were subjects of debates and discussions, so that the students realized that the school is not oblivious to external problems to it, but that it can collaborate in the solution or minimization of these problems.

In the same way as in the previous category, we can observe preconceptions in the writing of the answers, based on the explanations that the school is committed to educating citizens and also the (dis)belief that the school reflects the inequalities and problems of society. When they say that the school is primarily responsible for teaching, they demonstrate a somewhat restricted view of the true role of the school in society, establishing a view that the responsibility of the school and the teachers permeates only matters of content, which is in line with current theory on education issues. At the same time, there is an assertion that the school must educate citizens and sometimes this placement infers a





certain degree of common sense, since it is frequent speech even among those who are not inserted in the same group. And the question that can be left for reflection is: is the school able to “educate good citizens”? What defines one as a “good citizen”?

The testimony that school corruption also occurs in the management is somewhat worrisome, since this perception is not common among those who have had few experiences in teaching. In addition, it indicates that there is a serious lack of commitment in the school environment regarding ethics, which may reflect in the training of those who attend it.

Thus, this category has brought important reflections regarding the relationship between school and society, since the beliefs and (dis)beliefs of the Graduates about the role of the institution in the space in which it was inserted were exposed. It was noticed in the statements that, even though they are not in the school space, the Egresses understand the role of the school in the constitution of the society, either with the intention of transforming it or reproducing it.

### 5. *The devalorization of the State*

Another category established is the devaluation of the State as a factor of demotivation for teaching, especially in what concerns the lack of commitment of the State, which was manifested by four graduates. G13 points out:

There are many teachers who are unmotivated, tired and unhappy with the conditions of their work. I believe that changes should start with the appreciation of the teaching profession, to encourage them to do a good job. Many are looking for other professions, due to the lack of vacancies, due to the disorganization of the state and municipality, besides not being a living wage for those professionals who are the hope of improvements in Brazil.

G8, besides pointing out the neglect of the State regarding to Education, also exposes an outburst:

Unfortunately many schools depend on management and public funds, teachers need better salaries and greater appreciation, but I still believe in a promising future, I can not believe that education will forever be placed in the background by rulers and by many families.

Graduates 1 and 2 also state: *“I see that every day school and education are less valued by the public power”* and *“[...] a little more incentives from the government is what is lacking in this process”*, respectively.

Another Graduate agrees with the issue of devaluation, and accentuates such **devaluation in Primary Education:**

But today education is not receiving the necessary value and attention, thus being forgotten and devalued, if it is mainly about primary education. And because it does not receive due appreciation, I believe that the educational system is currently failing in many schools, which can not fulfill its due role, for many reasons. (G4)



The statements come together with the research carried out by Lapo and Bueno (2003) and Rosa and Vestana (2012). Lapo and Bueno (2003) carried out a study on the profile of the teachers of the state network of the State of São Paulo who asked for exemption of their teaching positions, and show that the most alleged reason for the request for exemption was low pay, together with the poor working conditions. It is also worth noting the lack of perspective of professional growth, since having a master's degree at the time of the research was similar to the bonus received by those who had not missed more than 20 times in 10 years of service.

Rosa and Vestana (2012) investigated eight teachers from the initial years of schools in the municipal and state schools of Santa Maria - RS. In this research, the authors verified, when questioning the teachers' opinions about the valorization of the teaching profession, questions related to: "Better salary, to seek qualification and improve self-esteem"; "Investing in salaries, planning schedules, and teacher health programs"; "Better working conditions"; "Moralize the actions of public policies, because the magisterium, today is a "plaything" in the hands of upholders. Everything is just promises", discourses that denote a devaluation on the part of the State regarding to the teaching work. These two studies were pointed out in order to show that the position of licensees on the devaluation of the State is not an isolated opinion. Such reality was seen in Santa Catarina, São Paulo and Rio Grande do Sul.

After analyzing this category, it was possible to understand that this is still a difficult problem to overcome. Historically, the teaching profession is not valued in the country, especially in the public school, a constant scene of strikes, conflicts, lack of funds and investments. It is noteworthy that the group of Graduates, subjects of this research, come from the public school, therefore knowledgeable of the reality in which they are inserted, especially the political reality. The lack of appreciation of education in several aspects, as well as the professional devaluation, seems to be one of the greatest (dis)beliefs of the respondents, and suggests to be constituent of the main reasons that led them to abandon teaching. It is interesting to point out that the salary matter was not the only issue addressed by the interviewees, showing that they are aware that better working conditions are not limited to financial matters and their salaries.

## ***6. The hope of transformation, through education, still remains***

Although most Graduates have a speech that sometimes shows dissatisfaction and disbelief regarding the school and Education, there is still hope that it is from the Education that there is possibility of a change of reality, which is evident in the response of G1, stating that "[...] *I believe that Education is the main way to change the reality of our country, and so I will never stop believing in its power of transformation even in the face of so many difficulties.*"

Even if this is an important belief, it is worth remembering that Freire (1996), although he posits that the democratic educator is a conscious subject that it is impossible to remain neutral in relation to Education, this



[...] is not the key to social transformation, it is not simply reproductive of the dominant ideology [...] the critical educator can not think that, from the course they coordinate or from the seminar they lead, they can transform the country. But they can demonstrate that it is possible to change. And this reinforces in him or her the importance of his political-pedagogical task. (FREIRE, 1996, p. 70. Our translation).

It was also evident in the writings of the Graduates their beliefs about the potential that the school has as a formative body and a space for the democratization of knowledge and discussion and respect for different ideas and ideals: *“The school must be a safe place in every way, which does not allow physical, emotional or psychological violence, a place of diversification, acceptance, a place that motivates students to be better people.”* (G8).

Freire (1996, p.20) puts it perfectly as part of “[...] the right thinking the most determined rejection of any form of discrimination. The prejudiced practice of race, gender offends the substantivity of the human being and radically denies democracy”, and also completes stating: “The greater the solidarity between minds and hands became, the more support became world and life, existence.” (FREIRE, 1996, p.29. Our Translation).

In addition, there is a belief that the school has responsibilities that go beyond the discussion and construction of knowledge, raising its responsibility to social levels, as G7 puts it: *“[...] I believe that the school plays a fundamental role in providing knowledge, rights, obligations, values recovery and social inclusion.”*

In this sense, an atmosphere of “[...] respect born of fair, serious, humble, generous relationships, in which the teaching authority and the freedoms of students are ethically accepted, authenticates the formative character of the pedagogical space” (FREIRE, 1996, p.56. Our translation).

Finally, after analyzing all the answers and taking into account that these graduates did not choose teaching as a profession, indicating their disbelief in relation to school reality, it is still possible to perceive, in their statements, the existence of important beliefs regarding the importance of the school and, consequently, of the teachers in the life of each student. The utopian vision that many demonstrated at the beginning of graduation gave way to a more realistic but no less hopeful idea of what the school reality is: *“When I first started my graduation I believed that I could change the world as a teacher. Today I realize that I can not change the whole world, but I can change the world of some students, a class, or even a school.”* (G8). Thus, the conclusion of this writing corroborates Freire’s statement (1996, 60. Our translation): “[...] the more solidarity there is between the educator and the learners in dealing with this space, the more possibilities for democratic learning they open at school.”

In this way, it is perceived that the Graduates understand that in order to live from and in Education it is necessary to believe that good paths can still be traced, and that the figure of the teacher in the classroom can be inspiring for the students. In some ways, it is worrying to observe that among the various settings, beliefs are overcome by (dis)beliefs, leaving only a romantic view of Education, but sometimes it is the driving force



behind the importance of Education and in the role of the teacher for the society, even if not acting in the teaching.

### *Final considerations*

The main goal of this research was to understand the beliefs and disbeliefs about the Education of a group of Graduates, as well as to understand some of the (de)motivations that led them to give up teaching as soon as they finished their degree in Mathematics. After the analysis, it was possible, based on the affirmations of the Graduates, to respond to the problematic initially proposed, as their beliefs in relation to Education were listed and discussed.

This research evidenced that in this group, disbelief in relation to Education surpasses the beliefs, which may indicate possible motivations for the abandonment of the teaching career. Mainly because of the approximations found in their answers, it was verified that the disappointments permeate several situations that involve the school routine. Criticism of excessive bureaucracy in the school environment, of traditional teaching models, of failures in family-school relations, of the fact that school reflects the problems of society and, not least, the lack of State commitment - mainly regarding to Primary Education - were evident in the answers analyzed.

The analysis also shows that, among the disbeliefs of the Graduates, there is no mention of problems related directly to students, such as lack of commitment and lack of study or lack of respect, a situation that was frequently reported by the subjects of this research when performing practices and internships during graduation. However, it is interesting to note that, despite abandoning teaching and revealing their disbelief in relation to this profession, they still present the idea that there is hope for improvement from Education, being the school an environment of transformation.

It is believed that this paper can contribute significantly to the Graduates and teachers of both Primary Education and Teacher Training Courses, since it deals with a little discussed subject: the perceptions or even the motivations of the newly graduates that give up teaching. It is proposed that new studies be carried out with this kind of audience, since research shows the lack of teachers to work in Primary Education, especially in the subject of Mathematics. And if, even graduating a few teachers, most of these choose not to follow the teaching career, it shows an indication that the problems of teacher shortage could be far from resolved.

### *Bibliographic References*

BASSO, I. S. Significado e sentido do trabalho docente. *Cadernos CEDES*, Campinas, v. 19, n. 44, abr. 1998. Available on: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S01012621998000100003&lng=pt&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S01012621998000100003&lng=pt&nrm=iso). Accessed on: Aug 8. 2017.

BICUDO, M. A. V.; BORBA, C. M. *Educação Matemática: pesquisa em movimento*. São Paulo: Cortez, 2004.

BOGDAN, R. C.; BIKLEN, S. K. *Investigação qualitativa em educação: uma introdução à teoria e aos métodos*. Porto: Porto Editora, 1994.



- BURAK, D.; PACHECO, E. R.; KLUBER, T. E. **Educação Matemática: Reflexões e Ações**. Curitiba: Editora CRV, 2010.
- CASTRO, P. A. P. P.; TUCUNDUVA, C. C.; AMS, E. M. **A importância do planejamento das aulas para organização do trabalho do professor em sua prática docente**. ATHENA, Cáceres, v. 10, n. 10, jan./jun., p. 93-103, 2008.
- CRESWELL, W. **Investigação qualitativa e projeto de pesquisa: escolhendo entre cinco abordagens**. Porto Alegre: Penso, 2014.
- DICIONÁRIO ONLINE DE PORTUGUÊS. Available on <https://www.dicio.com.br/crenca/>. Acesso em: Sep 13. 2017.
- FAZENDA, I. C. A. Interdisciplinaridade e transdisciplinaridade na formação de professores. **IDEAÇÃO**, Foz do Iguaçu, v. 10, n. 1, jan./ jun., p. 93-103, 2008.
- FERREIRA, A. C. **O desafio de ensinar – aprender matemática no noturno: um estudo das crenças dos estudantes de uma escola pública de Belo Horizonte**. 189 f. Dissertação (Mestrado em Educação). Programa de Pós-graduação em Educação, Universidade Estadual de Campinas, Campinas, 1998.
- FREIRE, P. **Pedagogia da Autonomia**. São Paulo: Paz e Terra, 1996.
- GODOY, A. S. Introdução à pesquisa qualitativa e suas possibilidades. **Revista administração de empresas**, São Paulo, v. 35, n. 2, mar./ abr., p. 57-63, 1995.
- KLEIN, A. M.; PÁTARO, C. S. O. A escola frente às novas demandas sociais: educação comunitária e formação para a cidadania. **Revista Eletrônica de História Social da Cidade**, São Paulo, v.1, n. 1, jul./dez., p. 1-17, 2008.
- LAPO, F. R.; BUENO, B. O. Professores, desencanto com a profissão e abandono do magistério. **Cadernos de pesquisa**, n. 118, mar., p. 65-88, 2003.
- LEÃO, D. M. M. **Paradigmas contemporâneos de educação: Escola tradicional e escola construtivista**. **Cadernos de Pesquisa**, São Luís, n. 107, jul., p. 187-2016, 1999.
- LEITE, S. A. S. A escola e a formação da cidadania ou para além de uma concepção reprodutivista. **Revista Psicologia**, Brasília, v.9, n. 3, p. 17-19, 1989.
- LUCKESI, C. **CAvaliação da aprendizagem escolar: estudos e pre-posições**. 11. ed. São Paulo: Cortez, 2001.
- LÜDKE, M.; ANDRÉ, M. E. D. A. **Pesquisa em educação: abordagens qualitativas**. 2. ed. São Paulo: E.P.U., 1986.
- MORAES, R. **Da noite ao dia: tomada de consciência de pressupostos assumidos dentro das pesquisas sociais**. Porto Alegre: Mimeo, 2007.
- MORAES, R.; GALIAZZI, M. C. **Análise textual discursiva**. 3. ed. Ijuí: Ed. Unijuí, 2013.
- OLIVEIRA, C. B. E.; ARAÚJO, C. M. M. A relação família-escola: intersecções e desafios. **Revista Estudos de Psicologia**, Campinas, v. 27, n.1, jan./mar, 2010.
- PEREIRA, R. C. B.; PEREIRA, R. O.; CARRÃO, E. V. **A informática Educativa: professor, aluno e os problemas escolares no ensino aprendizagem**. Juíz de Fora: UFJF, 2012.
- PONTE, J. Concepções dos professores de Matemática e processos de formação. In: BROWN, M.; FERNANDES, D.; MATOS, J. F.; PONTE, J. P. (Eds) **Educação e Matemática: Temas de investigação**. Lisboa: Secção de Educação e Matemática da SPCE, 1992, p. 186-239.
- ROSA, S. M.; VESTENA, R. F. O professor e sua valorização profissional. In: JORNADA NACIONAL DA EDUCAÇÃO: EDUCAÇÃO, TERRITÓRIO DE SABERES. 16. Santa Maria. **Anais eletrônicos...** Rio Grande do Sul, 2012.
- ROSSO, A.J; TAGLIEBER, J. E. Métodos ativos e atividades de ensino. **Revista Perspectiva**, Florianópolis, n. 17, p. 37-46, 1992.



SOUZA, Â. R. Explorando e construindo um conceito de gestão escolar democrática. **Educação em Revista**, Belo Horizonte, v. 25, n. 3, p. 123-140, dez., 2009.

SOUZA, C. S.; IGLESIAS, A. G.; PAZIN-FILHO, A. Estratégias inovadoras para métodos de ensino tradicionais – aspectos gerais. **Revista da Faculdade de Medicina**, Ribeirão Preto, n. 3, v. 47, p. 284-293, 2014.

THOMPSON, A. Teachers beliefs and conceptions: a synthesis of the research. In: GROUWS, A. (Org.). **Handbook of research in mathematics teaching and learning**. NewYork: Macmillan, 1992.

TOLEDO, M.; TOLEDO, M. **Teoria e prática de matemática: como dois e dois**. São Paulo: FTD, 2009.

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