POSSIBILITIES OF SCIENTIFIC RESEARCH IN PRIMARY SCHOOL

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ABSTRACT

From the theme of systematic research in Basic Education, the objective of this study is to reflect on the possibilities and challenges of using systematic research in Basic Education, as a strategy to qualify the teaching work and raise the quality of students' learning. The methodology used is bibliographic research, anchored in theorists such as: Stenhouse (1975; 1996); Martín 1999; 2002); Demo (2017, 2015, 2013, 1994) and (Alarcão (2005, 2001). It was concluded that it is possible to develop in Basic Education an investigative teaching practice to the extent that the teacher training process contemplates such a perspective, and envisions a training based on the preparation of a teaching professional capable of adding to the practice itself the exercise of research, as well as making the necessary claims that ensure the conditions for the effectiveness of a formative work.

Keywords: Research, Basic Education, Students and teachers.

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INTRODUCTION

Knowledge is a multidimensional process that is part of man's life as an indispensable tool to understand everything around him, in order to explain phenomena and events that occur in different contexts and spaces, to promote the development of science, technology and life in society. The latter takes research as its starting point, in its various approaches, to build new knowledge and promote the necessary advances in each field of activity. The process of knowledge construction involves different strategies, such as: questions, constant searches, doubts, curiosities, forms of intervention and problems to solve. The use of these strategies are indispensable instruments for the systematization of a research, in this case, in the education sector, specifically, in the field of teacher training and the teaching process.

Research in teacher training has been a national and international consensus, since it is an essential element for the development of this professional. Being the same integral part of the teacher's work, it is vital for the teacher to develop a researcher's attitude, whether in the classroom, or engaged in research projects that must originate in the school and deal with the problems of their context.

The theme of this study requires reference to the origin of the research in the context of Brazilian Education. This brings us to the first attempts to create institutions that would prepare professionals for the development of this field of knowledge.

It was only around the 1920s that we had the first records of university institutions that would be responsible for training professionals to work in the area of research, however, this initiative was not successful, as it faced strong opposition from positivist intellectuals who argued: "being the university costly to the country's coffers, in addition to being an institution that limits freedom of teaching and thought" (Ribeiro 2002 p.17).

In this scenario of oppositions, the Universities of Rio de Janeiro and Minas Gerais were created, which did not achieve their recognition and consolidation, as university institutions, according to the liberal thought that emerged in the context of Education. According to Ribeiro (2002), the situation of Brazilian higher education was lamentable due to the absence of institutions that could dedicate themselves to disinterested research, even constituting centers of high culture.

The scientific concern about educational issues is materialized in the late 1930s, with the creation of the National Institute of Educational Studies and Research (INEP), which

stimulated the creation of other national and regional research centers, thus establishing the construction of Brazilian educational thought through systematic research.

It is not the intention of this study to raise historical aspects of the Brazilian University, however, we deem it necessary, to situate some important moments in the development of research, which in the 1940s and 1950s, were developed between the fixed teams of the research centers, which also began to work in Higher Education, and the professors of higher education courses, to work in the research centers.

The studies carried out between the centers and the universities allowed a series of publications, as well as the offering of courses for the training of researchers with the participation of professors of different nationalities, contributing to the institutionalization of research and the formation of groups focused on Educational Research in Universities.

At the end of the 1960s, with the reform of Higher Education, Graduate, Master's and Doctoral Programs were systematically implemented, training programs abroad were intensified, shifting investments that were previously directed to research centers, to Graduate Programs in Universities.

In the subsequent periods, the production of research remained diversified, expanding the themes as well as the way of approaching them, using quantitative and qualitative methods and a more critical framework, enriching Educational Research and emerging, at the end of the 1990s, solid research groups in higher education institutions, independent centers, public or private.

Situating the problem of Educational Research in Brazil, we found that it went through different moments, which were fundamental for the strengthening and maturity with which it has advanced in this field of investigation. However, these advances are insignificant in the School of Basic Education. The presence of research at the Elementary and High School levels by teachers who work in these segments, either in the sense of strengthening their practice or as a factor to improve the quality of teaching, practically does not exist.

When thinking about the possibilities of research as a strengthening of pedagogical practices as an indispensable condition to improve the permanent education of the educator, we are faced with other levels of this problem, which have marked our trajectory of teacher education, in which the theory-practice dichotomy is present, that is, on the one hand those who claim the "supremacy of theory and call themselves researchers", on the other hand, those who idolize the practice, the "teachers" (Fazenda 1992, p.77).

Consequently, such alternation of positions increasingly impoverishes the student's teaching and learning. In this context, research in the school area ends up being much more of an academic nature, and teaching practice, pedagogical prescriptions that are not able to dynamize the teaching and learning process in a critical way.

We know that the above problem implies analyzing in a more specific way the reality experienced by the school, as well as the teachers' conceptions about the use of research in the daily life of the classroom, their preparation for research, the complexity and breadth of pedagogical practice that requires the rethinking of the problems of the school reality, and the theoretical-methodological obstacles to researching the practice itself.

Thus, in this study, we seek to analyze the possibilities of using research in Basic School as a strategy to qualify the teaching work and raise the quality of students' learning. In this sense, we present contributions from theorists who use research in their educational practices successfully. We also discuss the epistemological, institutional and practical obstacles and challenges of the use of research in teacher activity and training. We point out the different possibilities of the Basic Education school to innovate the teaching practice through the research axis, as well as to produce contextualized knowledge from its own action, considering that the theory-practice relationship will take place between the subjects who live and make the educational practice happen within the school.

INVESTIGATION IN THE DAILY LIFE OF THE SCHOOL: THEORETICAL CONTRIBUTIONS

The proposal to use research in the daily life of the school is not so recent, in the 1960s and 1970s the Movement of the Teacher Investigator was triggered by Lawrence Stenhouse, an English educator and teacher of Secondary and University Education. Her work at the university was focused on research applied to education, whose objective was to demystify and democratize research, involving Secondary School teachers to improve the teaching they developed. This author stated that: "teachers raise hypotheses that they themselves test when investigating the situations in which they work" (Alarcão, 2001, p. 3).

Practice means the affirmation of values that materialize in a unique way, as they depend on their protagonists in the experience of educational situations that occur in the classroom, therefore, the most important thing is to attend to the circumstances that each situation presents. Thus, the standardization of educational processes would not be able to respond to the specificities and complexities of educational actions, this means situating

teaching as a controversial and problematizing activity aimed at stimulating the student's critical thinking, and the improvement of teaching, since educational purposes cannot be tied to objectives that express determined results.

The teacher as a researcher of his own practice takes on the task of engaging in research on teaching situations, which focuses on the needs of students in relation to learning. Hence, using research as a systematic indication that allows self-criticism, a starting point for innovation and change. In this way, the teacher can consider the classroom as a laboratory rich in possibilities that, based on reflection on his work, can build his theories about teaching and educational practice without necessarily having to resort to others. Regarding this complex professional training, Pereira, *et al* (2024, p. 07) reiterate: "the teacher is built from his or her experiences and the reality in which he or she is inserted. In addition, there is the understanding that the constitution of teaching practice is closely linked to diverse knowledge and to the relationship we establish with students."

The conception of the teacher-investigator and producer of knowledge includes a systematic and planned action, since teaching activities seek new modes of action, experimenting and analyzing action, not as a context of application, but of investigation of situations, in which the most important thing is not instruction, but dialogue with the complex issues of the classroom. having research as the basis for teaching. From this perspective, it would be possible to improve teaching through permanent improvement. In this regard, Stenhouse (1996, p. 52) states that:

> To postulate a teaching based on research is, in my view, to ask ourselves, as teachers, to share with our students the process of learning the knowledge that we do not have; In this way, they can gain a critical perspective on the learning that we consider our own.

Considering the above, we perceive the scope of assuming teaching based on investigation, as the possibilities of inquiring and questioning during the teaching and learning process assume a horizontal position for students and teachers who are in the learning process, open to compare and contrast the situations of the school routine, which enhances the innovation and autonomy of the subjects involved in the process and moves away from the authoritarianism of a directing knowledge, and places it at the service of man's intellectual and social development

The contributions of Stenhouse (1996; 1975) were fundamental for the paradigm shift around teacher education, which, until then, had its reference guided by technical

rationality, which hierarchically establishes the relationship between knowledge and practice, that is, the institutional and personal separation between those who elaborate and those who apply knowledge. Therefore, the teacher in this understanding is a mere applicator of techniques and technological rules, which, if well applied, give rise to previously outlined results.

The proposal to center teaching based on research changes the focus of teacher training and performance, as they would be constant investigators of their practice and the competencies that sustain it. The curriculum built by the teacher is a starting point for improving teaching based on research that reflects his own practice, that is, it should strengthen the teacher's work to organize, interpret his experiences and make diagnoses, not to prescribe results, but to guide the process in action.

Consistent with the understanding that research is a valuable instrument for the development of the educational and teaching process, Elliott, who was a collaborator of Stenhouse (1984), proposes "action research as a process of spirals of reflection that serves to improve practice" (Pereira, 2009, p. 162). Considering the author's statement, this processuality would integrate practice and theory, aiming at the improvement of both, since it is possible to clearly perceive in the practical situation the best way to solve a problem, since strategies arise in action.

In this understanding, in the act of investigating one's own practice, the same author also recommends, action research is an appropriate procedure to strengthen educational practice, as it drives the inquiry that leads to discovery in the context of pedagogical practice, whose meaning and significance occur specifically in action. This process may allow changes to occur for students and teachers and, consequently, will reflect on the broader context of social practice.

Action research as a reflective practice aims to improve teaching practice, allowing the teacher to assume an ethical posture, considering that in the process of practice values that are implicit in it are experienced. In this way, it presupposes an interpretation of values that in turn also reflect the means that are intimately interconnected with the reflection on ends. Therefore, in this set, there is still a philosophical discussion as it directs its attention to the role of practice in improving critical action. Because, the teacher, when developing his work, will be able to think and restructure his values, concepts, and understand the importance that the data of reality have for the foundation of reflection on practice.

Action research as an improvement for teaching and teacher development is a study of situations that allows overcoming the gaps between research and educational practice, also contributing to solve the problems of the relationship between theory and practice, and is a significant way to break with the existing prejudice about the teacher's role as an investigator. In this regard, Elliott, (1993), *apud* Pereira (2001, p. 164), presents the following characteristics of action research:

> Be a strategy associated with the training of the people involved in it; to focus on historical actions and social situations that are perceived by teachers as problematic and subject to change; understand what is happening from the perspective of those involved in the process: teachers, students, parents and principal; discursively re-elaborate the contingencies of the situation and establish the interrelations between them.

Considering the above characteristics, we realize that action research is not centered on rigid rules on how to carry out an investigation, but on principles, which the teacher organizes into practical action, which are defined as those involved in the process can develop their capacities for discrimination and awareness of the need for learning, as an active production of meanings.

Action-research as a teaching posture is a way of understanding teaching as a process of permanent and collective construction, as it allows them to reflect and participate in discussions about the very reality in which they work and seek the reconstruction of education as a practice, political and social. The feasibility of these actions can be materialized through systematic reflection on the practice experienced in the institutional space, which can make changes happen in the school, in the curriculum and in the teaching practice and, consequently, in professional autonomy.

Despite being aware of the importance of research as a structuring axis of teacher training and action, there are still great difficulties for it to be actually effective in the practice of Basic Education teachers. To this end, it is good to highlight the following problems: dividing line between academic researchers and professors; concerns, disbelief and distrust regarding the fact that research is also the task of the Basic School; traditional conception of research linked only to the construction of scientific knowledge; the preparation of the future researcher formally linked to the Master's and Doctoral Programs; researchers external to the school carrying out their research without considering the values, objectives and purposes of the school and the teaching work; the working conditions of the teacher,

including the physical, temporal, institutional and professional space occupied by the teacher in the Basic School.

The problems listed are in fact barriers for the investigation to be an articulating axis of the teaching process in the Basic School, but such a posture is not impossible, thinking, for example, as Freire suggests, (1997, p. 32):

> There is no teaching without research and research without teaching, in my understanding what is a researcher in the teacher is not a quality, or a way of being and acting that is added to teaching. It is part of the nature of the teaching practice to inquire, to search, to investigate. What is needed is that in his permanent training, the teacher perceives himself and assumes himself as a researcher.

The author's stance reaffirms that research is an integral and inseparable part of emancipatory and critical teaching action. However, we cannot be naïve enough to believe that the research carried out by the teachers of the Basic School is not rejected by various sectors, even by those who work in Basic Education, since it is a process of innovation that shifts the focus of this action to a professional other than the technical researcher.

The favorable positions on research as a basic condition of the teaching work in the Basic School emphasize that it should be understood in a comprehensive way, but flexible to meet the specificities of the daily practice of the school, which presents problems that demand solutions that must emerge from the teachers themselves who are inserted in the practice of the school, and who can do so without giving up care that is essential in all forms of research. In this regard, Beillerot (2001, p. 74) presents two levels of investigation:

> The first degree with three basic criteria: 1st Production of new knowledge; 2nd Rigorous forwarding production; 3rd a communication of results. The second degree ones plus three more criteria: 4th A critical and reflective dimension; 5th Systematization in data collection; 6th Interpretation enunciated according to known and current theories that contribute to the elaboration of a problem.

Still, the same author calls attention to be cautious about the aforementioned levels, that is, he states that it is inconsistent and disrespectful to disregard investigations that do not present the six criteria proposed as a condition for actually having an investigation process, since these do not take place under the same conditions or at the same level of capacity, especially when it comes to social and educational practice.

Reflecting on the proposed criteria, it should be noted that the investigation in the classroom complies with all of them, it is enough to consider the breadth and complexity of the pedagogical practice and also its main object, which is the learning and autonomy of the

student. When it is proposed that the student learns something, there is the possibility of building new knowledge that for the teacher, who mediates, is not a new situation, but for the student it is.

When organizing teaching activities, the teacher takes as a reference an object of study, in this case the specific contents of his performance, which must be unveiled by the student. These actions require an interactive walk between teacher and student in a rigorous and committed way so that the teaching and learning process is really effective.

It is true that the unveiling of the process of teaching and learning as a systematized activity cannot dispense with a reflective and critical dimension, which necessarily entails the use of sources, methods and forms of work that are specific to the problematization under study, from which data will emerge that need to be analyzed and interpreted in the light of existing theoretical contributions. It is also worth remembering that the investigation as a structuring axis of the teaching process enables the teacher to make explicit his critical spirit, to exercise methodical doubt, to be flexible, since he will be involved with people, representations, values and situations/problems that need to be solved, based on an attitude of seeking to promote changes instead of waiting for them to happen.

The author's thought draws attention to the dynamics of research in the teaching process and its contribution to teachers and students with open minds to solve problems and promote changes in pedagogical and educational practice. Because as long as the school continues to think of research activities as separate from the teaching process, the possibilities of real change in educational practice, as well as in the effectiveness of the theory-practice relationship, will decrease.

However, the change that may happen will not only be on the part of teachers, as agents who guide the teaching and learning process, but also of the school as an institution that learns, because the structure that it has instituted is not able to meet the demand required of it in terms of space, temporality, social history, educational organization and action, since, when one thinks of research as the main axis of the teaching activity, it is not proposed that it be done in the traditional closed and linear molds, which, supported by a technical rationalist theoretical discourse, radically separate teaching from research and, vice versa, from teaching activities in basic school.

Obviously, we know that the obstacles are not few, both internal and external, but one cannot remain cloistered or accommodated, passively waiting that the *status* of investigation that is conventionally instituted in the academic environment and also in the

Basic School, can prevent the teacher from using the investigation to formulate, answer, seek and propose solutions about what they teach and why they teach. Focusing on the construction of autonomy for those who teach and those who learn, since the relationships constituted in this process are historical, political, social, contextual, in short, plural, and if considered in the pedagogical practice, they support the construction and reconstruction of the school and the educational practice.

Considering that using research as a methodological tool for the development of teaching work is a serious proposal, which requires ethical commitment and rigor in its operationalization, in the day-to-day life of the school, regardless of the level at which it is acting, it is always about themes that never dispense with acts such as: studying, reading, writing, which, notably, can be called or understood in different ways, however, these constitute, as a general rule, the premises for the construction of knowledge. Throughout this discussion, we reflect on the need to establish criteria for teaching practice to be effective based on research. In this context, Demo (1992 p. 25) presents five levels of research, namely: "1st Level - Reproductive Interpretation; 2nd - Level Own Interpretation; 3rd Level - Reconstruction; 4th - Construction Level; 5th Level - Creation and Discovery".

In the first level, Reproductive Interpretation, the author highlights the need to work gradually, because the transformation process does not occur abruptly, it is therefore necessary to propose to the student challenging situations in which he can take the study texts as a systematic basis to present his interpretation with reliability and security. In this way, a process of passage begins from someone who only copies to assume his own journey towards the construction of his own knowledge.

In the second level of investigation called Self-Interpretation, the study material continues to be the referential, and the student has a certain autonomy to determine his study format with his own interpretation and autonomous reading, demonstrating an investigative spirit and allowing himself to inquire about the different possibilities that arise in his study and learning activities.

Considering that the student in his learning process necessarily becomes familiar with the model or object under study, this leads him to issue opinions and make inferences, consequently, he will be able to face the third level of investigation called Reconstruction. This level takes the existing construction as a starting point to demonstrate its knowledge by redoing it and presenting its own proposal for the construction of what it was able to produce. Based on existing scientific contributions that serve as support to propose and

oppose safely, but also to allow oneself to doubt, question oneself and also challenge oneself, take initiative and imprint one's own condition as a learner who is capable of conquering one's own space.

In the fourth level of research called Construction, the existing references are indicators that open the way for the investigation to be carried out with the perspective of a new construction that advances significantly with the premise of analysis in the process of construction of new knowledge. This allows the learner and educator to exercise their ability to formulate and assume their own position, always instrumentalized by the knowledge that leads them to experience theory and practice in a movement of permanent construction, a dynamic and challenging process, as the subjects involved in it are constantly required to demonstrate their creative potential. This is where the fifth level of research called Creation and Discovery arises. At this level, one is able to extrapolate the limits regarding what is established as a reference, and follow the path of innovation and exercise one's potential as an investigator, launching other references, creating new alternatives and occupying new spaces that justify the production of knowledge. A process in which the components creativity, inventiveness and criticality are part of the personal and professional commitment of those who teach and those who learn, allowing new paradigms to be introduced in the theoretical and methodological field, a task that few researchers achieve.

Taking as a reference the contributions presented by the different authors on the levels of research, the conviction that research is a valuable way to enhance teaching and the professional autonomy of teachers has been increasingly reinforced. The discussion undertaken here does not have the objective of classifying this or that investigation, but to use the existing contributions even on the different levels and criteria that have been proposed to carry out a work of social quality in the field of education and teaching, without reinforcing the dominant demarcation between researchers and teachers.

By advocating in favor of research as a structuring axis of the teaching work, it is believed in the possibility and capacity of teachers to theorize their own practice in a reasoned and contextualized way with the political and socio-historical process that is proper to the development of humanity. Logically, it is necessary to consider that the teacher, in order to work in the perspective in theory, will need to be based on a training that develops skills to investigate in, about and for educational action, that is, to assume an attitude of critical intellectual who questions, problematizes in an intentional way in relation

to his work, the role of the school and in improving the quality of the teaching and learning process.

It is evident that this training must be centered on theoretical-scientific, socio-political and pedagogical principles, which constitute support for the teacher to overcome the theory-practice dichotomy, as well as demystify the idea that the researcher produces science and the teacher teaches. In our understanding, this separation only impoverishes the process of knowledge production, because those who teach need to research, as well as those who research only comply with the complete ritual of knowledge, if they do so through teaching.

In this perspective of training, it is appropriate to review concepts related to teaching, learning, research, educational research and pedagogical research. On the subject, Demo (1992, p.10) explains "that it is necessary to build the need to build paths, not recipes that tend to destroy the challenge of construction."

We agree with the author, since building paths in the process of teaching and learning means offering, through dialogue, conditions for the organization of organized thinking about the object of knowledge. In this way, teaching and learning are part of the same process, since the student and the educator are engaged in the process of discovering and elaborating this knowledge.

The conceptions of teaching and learning vary according to the conception of education that one has. Thus, in a socio-interactionist approach, teaching goes beyond the limits of information transmission, and learning is not restricted only to the mechanical processing of this information. The interactive process of teaching and learning is an indispensable condition for the search for knowledge, which takes place through investigation, which in Demo's understanding, "means critical and creative dialogue with reality, culminating in one's own elaboration and the ability to intervene." Next, he reaffirms that investigation is the attitude of learning to learn (2000, p.128). In this line of thought, Machado (1997, p. 04) defines investigation as:

> A type of scientific activity within the framework of the aid of methods and techniques specific to it, to modify qualitatively and quantitatively the specific school, community and social framework in order to obtain new knowledge or knowledge perfecting both for the research system and for the researched.

From these understandings, it is interesting to distinguish differences between research in education and pedagogical research, Research in education is characterized by

the search for knowledge in the field of education in general, focused on educational phenomena and their complexity related to situational meanings, while Pedagogical research is more concerned with teaching action, that is, with the practical character of the teacher's work, having as a common axis the analysis of the construction and functioning of teaching situations.

The school is a space for the production and socialization of knowledge, thus, it is a genuine field of research, however, it has not used its raw material from which emanates the most varied research problems, whose subjects involved are teachers, students and the entire school community. The pedagogical process, in turn, needs theoretical-methodological support that supports teaching actions and enhances student learning.

In addition, the school institution has not sought to assume this identity as a place of knowledge production, because what it has been doing, both at the level of teaching and at the level of teacher training, only reinforces its old function of transmitting previously produced knowledge. A practice that does not meet the demands of contemporaneity that require a competent professional, who uses different possibilities to produce their own knowledge without discarding the knowledge previously appropriated by teachers, in the exercise of their function and enables the (re)construction of a new posture for teachers and students as authors of this process of teaching and learning, via research.

RESEARCH IN THE INNOVATION OF THE TEACHING PROCESS

The school, as an educational institution, is a space rich in knowledge that can be worked on from a critical perspective, breaking with the linear posture that teaching is instructing, training, domesticating, and starting to consider the student and the teacher as subjects of the process and work partners, who together build and develop creativity and criticality in an autonomous way.

In this process, the teacher is the subject who assumes the orientation of teaching activities, both in the collective and individual spheres, which allows transforming the classroom into a place where learning to learn is a priority (Demo, 2000). Teaching situations should be challenging actions that allow the emergence of research skills, in which the elaboration of knowledge can be done by arguing, questioning, proposing and counterposing with propriety, which leads to research.

Teaching, having research as a starting point, leads the student to get involved in the constant search for a source of information, which allows them to problematize the themes

of study with greater security, to participate actively, to interact in the process, to make their own interpretations, to reelaborate the doing and to reconstruct knowledge. Overcoming the traditional forms of teaching tied to the norms prescribed by the programs and manuals, since teaching does not mean a simple Applied Science. Teaching, for Martineau (1999, p.42), "is to create, innovate, invent unprecedented procedures, in order to face unforeseen events in the classroom".

To work with the student in the aforementioned perspective, it is necessary to consider didactic premises, such as: playful motivation, electronic handling, updating and reading (Demo, 1998), since they allow the student to organize different forms of work to deepen and build new knowledge, using the educational challenge in the development of creative and investigative potentialities. It is relevant that the student's potential be explored by teachers, since the advancement in electronic communication means requires that:

> Teacher and student should be attentive to use these means well without becoming mere repeaters of the knowledge already produced, but that they feel challenged to build and rebuild permanently, using the school space and time in an intelligent way, where research is a condition for the emancipation of both. (Demo, 1998, p. 85)element.

The educational work lacks methodological care that is decisive in the organization of knowledge that forms the basis of support for the teaching process, which should support the student to develop the ability to "know how to think" and "learn to learn" (Demo, 2000).

Learning to think is a basic requirement for the student to be able to establish relationships of understanding about reality, having as a reference the knowledge that enables him to face new situations, solve problems and seek alternatives. Knowing how to think represents the starting point for learning to learn, because in the conjunction of these actions, the student will be able to exercise theory and practice in a critical and creative way, which allows constant updating to break crystallized practices of passing on information.

The student oriented to produce his knowledge, from learning to learn, will be able to express himself in a reasoned way, building a general and specific vision in a safe way, to remake knowledge in an innovative and ethical way, having investigation as a starting and ending point. The act of studying, reading and writing texts, for example, will have a permanent character, always constituting a moment and/or levels that express the effectiveness and appropriation of new knowledge.

The teacher as a researcher may have the school as a place that constantly raises the need to investigate and, above all, to be prepared for challenges that, according to Demo (1998, p.38) consist of: "(re)constructing one's own pedagogical projects; (re)construct their own scientific texts; (re)make own didactic material; to innovate didactic practice; constantly recovering competence."

All these challenges are indispensable to the good performance of the research teacher who, in order to concretely carry out his work, in this perspective, will have to constantly exercise the experience and coexistence of the investigation so that an interactive movement of the aspects of apprehension, interpretation, reconstruction, creation and discovery is established, which are also indispensable elements for the production of new knowledge. In this context, the research teacher will be able to elaborate and execute his own Pedagogical Project based on existing scientific productions, as well as on his own productions, since his field of action will require specific didactic materials that he himself will be able to elaborate and thus innovate his own practice.

As we well know, the teaching practice goes through methodological processes understood here, not only as the mere application of techniques, but as the mobilization of different knowledge that grounds the teacher to critically manage the knowledge already produced, as well as the search for new paths that lead to the production of different ideas, projects and innovative visions that contribute to resignify teaching and pedagogical practice.

The innovation of didactic practice through research in the Basic School requires the teacher to establish goals to carry out the pedagogical work, with the challenge of emancipating the student from the situation of listener to the condition of interactive subject. The process of emancipation that is intended to be carried out with the student consists of the use of the "method of reconstructive questioning" (Demo, 2000), considering that it is capable of allowing the student to develop his autonomy as a subject participating in a larger social context. For this, it is necessary, according to Cortella (1999, p.125):

> That the teacher has a broad vision of the student's experiential universe, having as principles (starting point), in order to reach the goal (point of arrival) of the pedagogical process; After all, the main objective of educational practice is to advance the ability to understand and intervene in reality beyond the present stage, generating autonomy and humanization.

Working, with a view to promoting the student as an interactive subject, can be placed as an alternative to combat school failure that has always been present in school

institutions. However, to overcome these challenges, it is necessary to offer conditions to the teacher so that he is in a constant process of improvement and updating. This can be achieved through courses that allow the recovery of competence around the unity of theory and practice, in which one can exercise "self-criticism and criticism of practices by returning to theory, innovating theory and practice" (Demo, 1998, p.51).

The teacher, in the exercise of teaching, whose axis is research, should be permanently recovering and developing new skills which are part of the dimensions of teaching professionalism, about which Alarcão (2001, p. 09), in a very didactic way and in tune with the performance of the research teacher in the context of basic school, groups them into four dimensions, namely: "attitudinal skills; action skills; methodological skills and communication skills".

It is not intended to discuss each of these competencies from a conceptual point of view, but to point out attitudes that can be developed by teachers in the exercise of teaching, having investigation as an axis, includes attitudes such as: exposing oneself to constant questioning; allow yourself to be a permanent learner; to be open to changes and divergences, to be in tune with local and global reality; demonstrate commitment and respect for yourself and others in your work.

We understand that the teacher, by experiencing and assuming this posture, will be putting into practice the skills of action, since it is in the execution of their own projects that the ability to work in groups, ask for help, collaborate, in short, be in a permanent process of investigation and evaluation materialize.

It is evident that the experience of the actions mentioned is processed through methodological competences that include: observation, raising hypotheses, formulating research questions, establishing thematic relationships that require systematic monitoring of all research activity, which logically are aimed at solving problems arising from the daily life of the school.

The teaching process, based on research, in addition to activating the different competencies listed, allows the communication process to be clearly established about the production of knowledge, which, in addition to the textual systematization of the work carried out, also uses the argumentative and interpretative dialogue about experiences of the pedagogical practice analyzed in the light of theories that illuminate the different teaching situations. A process that should culminate with what can be called a solid professional training that contemplates not only the theoretical aspects, but also the

contextualized and experiential practice of the investigation that will be developed in the classrooms, aiming to innovate the pedagogical practice and promote the autonomy of teachers and students.

Considering that this study has as its main axis the reflection on the quality of the teaching and learning process in the Basic Education school from the innovation of pedagogical practice, centered on research as the main strategy, it is also necessary to reflect on what is meant by innovation and quality in education, since both arise in a context that requires change.

Educational innovation is a theme present today since the demands for improvement in the field of education point to the urgency of systematic research on the nature and process of educational innovation, on conditions, factors and variables that significantly affect the successful or failed development of innovative projects. This is where a theory of educational change begins.

From this perspective, we understand that educational innovation is complex and includes processes of definition, construction and social participation in which everyone involved in the educational system, in the administration, as well as teachers, students and other subjects, can inquire, discover, reflect, criticize, in a reasoned way about what to change, how to change, in what direction and with what policies and resources to be carried out.

In an unsatisfactory social and educational reality, innovation appears as an effective mechanism for achieving quality, that is, replacing undesirable and deficient educational situations. Thus, it is necessary to remember that the term quality is not new and has been questioned by several theorists, who call attention to the different definitions of qualities that generally explain the points of view of those who expose them. In this sense, it is worth highlighting two approaches that in recent years have been discussed and implemented in different sectors of society, according to Martín Bris (2002, p 206): quality and equity *versus* quality efficiency or profitability "calidad y equidad versus calidad y ificiência o profitability."

The approach that privileges quality as efficiency or profitability, whose characterization is linked to inputs, processes, products and purposes that can always be achieved around quantity and measurements, as indicators of efficiency and even laws and standards to achieve it, without the concern of establishing a correlation between the elements of the process, the context and the needs of the subjects involved, social inequalities are increasing more and more.

The approach that deals with quality associated with equity considers it as a process interrelated with all the elements that make up the context. It seeks to satisfy the educational and social needs and expectations of all, in the individual, collective and/or group aspects. In this regard, Martín Bris (2002 p 206) "Cree que la calidad compre el mejoramento interminable del proceso ampliado de um ciclo". He believes that quality is the permanent improvement of the extended process of a cycle. (Our translation)

In view of the above, it is clearly perceived that innovation and quality maintain a close link, since there is a network of relationships that are established in each of them and converge for an innovative and coherent intervention that materializes in the pedagogical practice through planning, with research as its permanent diagnostic instrument, in order to meet the goals of educational innovation.

Regarding innovation in the field of education, two positions have been highlighted, which are: "institutional dimension to what is accused of following the liberal line of education; the other linked to the sociocritical dimension that intends to improve it since a social apuesta and that is based on the organizations that learn Martín Bris (2002). p. 207). An institutional dimension that is accused of following the liberal line of education, the other linked to the sociocratic dimension that aims at improvement from a social bet and is based on organizations that learn. (Our translation)

We understand that in a society with great social inequalities, the sociocratic position would be the most appropriate to meet the needs of the less favored, however, it is clear that we cannot forget the institutional dimension, because it is in it that the development processes occur, with a view to raising the quality of the educational process.

From this perspective, it is necessary for the educator to be able to ponder on the positive aspects of the two positions, assume a posture that values what exists in the process and adds the possibilities of reaching quality, considering the social and contextual, promoting quality with equity. In this regard, Martín Bris (2002, p. 207) states: The quality does not reside in the absolute value of the achievements, sinón in the added value of the context and the starting points of the allunnos." Quality does not lie in the absolute value of achievements, but in the added value, in view of the context and the starting points of the students. (Our translation).

Quality in a broad, complex and procedural perspective, maintains the same understanding also contained in the research process, which allows reducing uncertainties and holding accountable all those who participate in the process of developing educational

actions, from the perspective of innovation and change. Once again, the need to be in a constant process of investigation is evident. Understood in this way, the dynamics of the pedagogical process are ensured through revisions, updates and successive reformulations at all times of the teaching activity, allowing control and feedback of the process, that is, comparing results achieved with those projected, in the search for innovation and change.

FINAL CONSIDERATIONS

The present study aimed to reflect on the possibilities of exercising systematic research in the school environment. In this sense, it reiterates that research in the Basic Education school must go beyond the level of only complying with what was foreseen in plans, projects and programs, but executing thinking, feeling and doing well, which is fundamental for the quality of the teaching and learning process, involving the student and educator and the other subjects of the educational process in the sociocratic perspective, thus enabling the emancipation of the school as an institution that produces new knowledge.

We are well aware of the importance of defining a coherent research model that best suits the school context. A possibility that has epistemological, pedagogical and institutional support, as discussed throughout this work by authors who have made their valuable contribution in the sense of breaking with a crystallized pedagogical practice and creating a new teaching practice in which quality, innovation and investigation are inseparable parts of the teacher's professionality. Hence, the perspective of using the tools of knowledge in the organization and execution of research proposals in the context of the classroom, which would allow the achievement of objectives and purposes common to all who aim for an innovative educational practice of social quality.

The considerations made about the performance of the teacher and the student as the main subjects of the teaching and learning process reaffirm our conviction that it is not only possible to transform the school and the classroom into a place of investigation, critical action of teachers and students, but also to contribute to making it less reproductionist and more creative, as it has the teacher as a competent advisor in the process of learning, teaching and investigating.

We know that using research as a basic tool to improve the teaching and learning process in the Basic Education school is not an easy task, but it is not impossible, it takes into account that there is clarity about the challenges to be faced in the long, medium and

short term, but these permeate the entire educational process that is constituted by social conditions, cultural, political, epistemological and pedagogical aspects, which were reflected on during this study.

In this direction, we emphasize the need for a solid teacher training without losing sight of the necessary articulation between initial and continuing education, ensuring theoretical-practical solidity and the establishment of permanent dialogue between the different knowledges that constitute the spaces of training and professional teaching performance, in which the teacher will in fact be able to use research as the structuring axis of his work.

In this bias, the research teacher will be able to develop his pedagogical practice with the purpose of: working on knowledge from a historical perspective, as it is not built at random, but from human and social conditions; valuing divergent thinking as a condition for creativity, interpreting what has already been discovered, arguing and recomposing ideas; guide towards meaningful learning based on curiosity, demanding knowledge, uncertainty and doubt as part of the learning process leading to critical reflection; to use knowledge in an interdisciplinary way, seeking to establish relationships that interpenetrate each other to reduce the boundaries of specialties; valuing socio-intellectual skills to work on teaching contents via social problematization.

Employing research as a teaching tool is challenging, since it goes beyond a simple activity, as it includes thinking and making decisions, in macro and micro contexts, of a professional and personal nature, as they include possibilities for the future for the student and educator who together experience the feelings of search and inquiry that is characteristic of the entire teaching and learning process in a critical direction.

Using research in the school of Basic Education as a strategy to qualify the teacher's work and raise the quality of student learning is a challenge that, in addition to requiring solid and permanent training, also requires that the teacher incorporate the professional commitment to integrate the attitude of constant research into his work, and the need to systematize their experiences; being less sure of oneself and seeing oneself more as an object of study; become more reflective as an educational agent; to become an attentive observer of the school environment, in the search for conscious transformation through problematization; locate convergent and divergent points in their work, thus facilitating the resolution of conflicts in the pedagogical relationship; have a broader vision to understand

and intervene in the issues of their daily school life; be inventive and creative in guiding investigative activities; have flexibility regarding evaluation and self-evaluation.

Therefore, we perceive as urgent the need for educational institutions at the Basic and Higher levels to restructure their main functions in order to meet the demands of contemporaneity, in the direction of forming, educating, developing and producing knowledge, using the entire technological and scientific arsenal, having the student and educator as protagonists able to redo the process of knowledge construction in a collective way, mediated by different research strategies capable of also promoting the emancipation of those involved in the educational process.

As a achievement of our general objective, we found that it is possible to develop in Basic Education a research teaching practice to the extent that the teacher training process contemplates such a perspective, and envisions a training based on the preparation of a teaching professional capable of adding to the practice itself the exercise of research, as well as making the necessary demands that ensure the conditions for the effectiveness of a formative work.

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