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SOCIAL REPRESENTATIONS OF SCIENCE TEACHING IN EARLY CHILDHOOD EDUCATION

REPRESENTAÇÕES SOCIAIS SOBRE O ENSINO DE CIÊNCIAS NA EDUCAÇÃO INFANTIL

REPRESENTACIONES SOCIALES SOBRE LA ENSEÑANZA DE LAS CIENCIAS EN LA EDUCACIÓN INFANTIL

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ABSTRACT

This study aims to investigate the social representations of early childhood education teachers regarding science teaching. The research seeks to understand how these social actors perceive the importance, challenges, and practices related to science teaching at this educational stage. Through qualitative field research based on focus groups, the study contributes to the understanding of the factors that influence perceptions and practices related to science teaching, in order to provide support for working relationships in this area of early childhood education. The results, discussions, and initial considerations identify the need for studies focused on social representations among teachers in early childhood education focused on science teaching.

Keywords: Education. Preschool. Function Teaching.

RESUMO

Este estudo tem por objetivo investigar as representações sociais dos professores da educação infantil sobre o ensino de Ciências. A pesquisa busca compreender como esses atores sociais percebem a importância, os desafios e as práticas relacionadas ao ensino de Ciências nessa etapa educacional. Por meio de uma pesquisa de campo com a abordagem qualitativa, com base no grupo focal, o estudo contribui para a compreensão dos fatores que influenciam as percepções e práticas relacionadas ao ensino de Ciências, a fim de fornecer subsídios para as relações de trabalho dessa área na Educação Infantil. Os resultados, discussões e considerações iniciais identificam a necessidade de estudos voltados as Representações Sociais entre docentes na educação infantil voltadas ao ensino de ciências.

Palavras-chave: Educação. Pré-escola. Ensino de Função.

RESUMEN

Este estudio tiene como objetivo investigar las representaciones sociales de los profesores de educación infantil sobre la enseñanza de las ciencias. La investigación busca comprender cómo estos actores sociales perciben la importancia, los retos y las prácticas relacionadas con la enseñanza de las ciencias en esta etapa educativa. A través de una investigación de

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campo con un enfoque cualitativo, basada en grupos focales, el estudio contribuye a la comprensión de los factores que influyen en las percepciones y prácticas relacionadas con la enseñanza de las ciencias, con el fin de proporcionar información para las relaciones laborales en esta área de la educación infantil. Los resultados, debates y consideraciones iniciales identifican la necesidad de estudios centrados en las representaciones sociales entre los docentes de educación infantil dedicados a la enseñanza de las ciencias.

Palabras clave: Educación. Preescolar. Enseñanza de la Función.

1 INTRODUCTION

The theories of common sense, or Social Representations (SR), permeate the daily lives of subjects with the purpose of making previously unknown subjects common, that is, sharing socially accepted knowledge. In this context, there are many issues that guide the teaching of Science in Early Childhood Education, among them, the interdisciplinary and collaborative relationship that provides reflections and scientific investigation to professionals in the educational routine stands out. According to Gomes (2012, p.125), the theory of social representations was established in the field of social psychology by the author Serge Moscovici, in 1961, "with the publication of his work on the social representations of psychoanalysis in France (*La psychanalyse, son image et son public*). This theory seeks to understand how certain representations of the world are formed in our minds."

According to Carvalho (2012), for many years, knowledge was transmitted to students only through faculty exposure. The students repeated experiments through a protocol and memorized scientific names. The exercises were only about location in the textbook and memorization. However, over the years, from one generation to the next, criticism about the way of teaching and learning has increased.

In this way, Krasilchik (1987) reports that the teaching of Science, in the Brazilian context, has undergone different transformations over several decades. However, it still needs a lot of investments, especially in relation to teacher training. This is because initial training courses are not always able to adequately prepare the teachers responsible for this field of knowledge.

Based on the facts mentioned, the need to promote spaces for the continuing education of teachers who teach Science content in Early Childhood Education in a collaborative way is emphasized. Thus, it is necessary to fill the gaps in training, providing critical thinking about educational practices and teaching knowledge. As a consequence, students will have classes focused on reflection and the construction of scientific knowledge.

For this to be possible, teaching actions based on collaborative work between teachers and hour-activity are adopted as a possibility of this critical thinking, especially in the teaching of Science, which requires interdisciplinarity between professionals and contents.

Throughout the study, bibliographic references are used, such as articles, books, theses and dissertations that will address the collaborative work between teachers in early childhood education, such as:

Collaborative work can be understood as a pedagogical strategy in which teachers plan, in an articulated way, teaching procedures for the service of students. Thus, it is possible to discuss the real problems that surround school space, time and politics.

The intention to investigate the Social Representations of the teachers in charge of the teacher-activity hour in relation to collaborative work emerged from the professional and academic experiences of this teacher-researcher.

In graduation, the first contacts with research in education took place, through two Scientific Initiation Projects – PIBIC/CNPq, in the area of History and Historiography of Education, in which the following were studied: "The Foundation of the College of Rio de Janeiro in the Sixteenth Century" (2013), and "Education in the Captaincy of São Vicente in the Sixteenth Century" (2014), This contact with research enabled different historical reflections on the teaching work. However, it was through participation in the Teaching and Research Project: "Perspectives and new perspectives: analyzing and resizing educational practices for young children", the experience in "Hospital Pedagogy", carried out at the University Hospital of Maringá, as well as monitoring at the College of Pedagogical Application (CAP/UEM), that my interest in researching pedagogical work in basic education grew.

After completing her graduation, in 2014, the teacher-researcher started teaching in early childhood education and the concerns about the organization of school work with children increased. So, from continuing education: specializations in the area of School Management and Coordination, Specialized Educational Service, Hospital Pedagogy and Higher Education Teaching, which enabled an even closer look at research and the school reality.

In 2016, approved in a public competition, the teacher-researcher assumes the position of Early Childhood Educator, teaching in kindergarten classes I and II. And in 2017, she starts to work in the position of Teacher (20h) in kindergarten classes IV and V, going through, so far, the functions of regent teacher, assistant, classroom support and hour-activity teacher, school guidance and supervision. In addition to these functions, she also served as Workplace Representative (RLT) with the Union of Municipal Public Servants of Maringá (SISMMAR) and Municipal Education Counselor in the 2020-2021 and 2022 – 2023 term.

These spaces for professional action and defense of the rights of workers in education are triggers of many issues to be deepened, which led me to the Master's Degree in Education in the line of research: Teaching, Learning and Teacher Training in the Graduate Program in Education at the State University of Maringá (PPE/UEM), which resulted in the

Master's Dissertation, entitled as: "From the right to hour-activity to the need of the teacher(r) hour-activity in early childhood education", supervised by Professor Silvia Pereira Gonzaga de Moraes, published in 2021, which also obtained theoretical support from the Research and Study Group "Educational Work and Schooling" (GENTEE/UEM) and the Pedagogical Workshop of Mathematics (OPM/UEM).

Thus, from the results of the academic and professional trajectory, mobilize new reflections on this need to think about Social Representations to be developed in the research line: Science and Mathematics Teacher Training, in the Graduate Program for Science and Mathematics of the State University of Maringá (PCM/UEM).

In this sense, during the course of the research, answers to the research problem: *What are the social representations of the teacher(s)-activity-hour about the regent teachers and the social representations of the regent professors about the activity-hour coents*?

To answer this problem, we seek to investigate the social representations of early childhood education students about the teaching of science and mathematics, so the study is organized into: I) identify the social representations of early childhood education students about the teaching of science and mathematics and III) analyze in which aspects the SR found can be modified to improve the pedagogical work relationship between the two professionals involved and, consequently, to increase the didactic-pedagogical effectiveness of their actions in Science classes.

In this context, from the presentation of Social Representations, it will be possible to interpret problems, present solutions, promote a political space and make propositions to improve this teacher-teacher, student-teacher, student-content relationship of science and mathematics, from an interdisciplinary space in the school environment.

2 THEORETICAL FRAMEWORK

The theory of Social Representations was instituted after the publication of a work on the subject, focused on the field of social psychology, by Serge Moscovici, in 1961, in France (La psychanalyse, son image et son public). This theory seeks to understand how certain representations of the world are formed in our minds (GOMES, 2012). Thus, the theory is based on the principle that the human being is immersed in an environment surrounded by words, ideas and images that influence us in such a way that our attitudes and thoughts are guided by these representations. "Reality is, for the person, to a large extent, determined by what is socially accepted as reality" (LEWIN, 1948 apud MOSCOVICI, 2003, p. 36). But,

unlike Marxists, Moscovici does not understand that people think and say only reflect the dominant ideology in which they are under control, because for the author:

> [...] People and groups, far from being passive receptors, think for themselves, incessantly produce and communicate their own specific representations and solutions to the questions they themselves pose. On the streets, bars, offices, hospitals, laboratories, etc., people analyze, comment, formulate spontaneous, unofficial "philosophies" that have a decisive impact on their social relations, on their choices, on the way they educate their children, how they plan their future, etc. Events, sciences and ideologies only provide them with "food for thought" (MOSCOVICI, 2003, p. 45).

In this sense, there are two questions that guide the field of our research based on Social Representations are: *Why are representations created? In our reasons for creating them, what explains their cognitive properties?* According to Moscovici (1978, 2003), society is fragmented into two universes: the consensual and the reified.

The consensual universe is elaborated from conversation, linguistic conventions and an implicit accumulation of images and conceptions that are considered certain and mutually accepted. This puts people on an equal footing, so that they enable each one to speak for the benefit of a collective and under its auspices. In fact, it can be said that "in most public meeting places, these amateur politicians, doctors, educators, sociologists, astronomers, etc. can be found expressing their opinions, revealing their points of view and constructing the law" (MOSCOVICI, 2003, p. 50-51).

In the reified universe, society is divided into several instances of knowledge, so only a particular competence acquired can direct its right to be heard in a given social group. "There is an appropriate behavior for each circumstance, a linguistic formula for each confrontation and, needless to say, the appropriate information for a given context" (MOSCOVICI, 2003, p. 52).

Our understanding of the reified universe occurs through the sciences, the universe consensual through Social Representations. A striking peculiarity of the consensual universe is stability, that is:

> [...] Consensual universes are places where everyone wants to feel at home, safe from any risk, friction or conflict. Everything that is said or done there only confirms the beliefs and interpretations acquired, corroborates, rather than contradicts, tradition. It is expected that the same situations, gestures, ideas will always happen again. Change as such is only perceived and accepted as long as it presents a type of experience and avoids the withering of dialogue, under the weight of repetition. As a whole, the dynamics of relationships is a dynamic of familiarization, where objects,

people and events are perceived and understood in relation to previous encounters and paradigms (MOSCOVICI, 2003, p. 54-55).

When the ideas coming from the reified universe are inconsistent with those practiced in the consensual universe, there is a demand for an adaptation to make something unfamiliar familiar. For Moscovici (2003, p. 57), Social Representations are compared to

> (...) a "confession" is the attempt to define and make more accessible the practices of the psychoanalyst towards his patient – this "medical treatment without remedy" that seems eminently paradoxical in our culture. The concept is then separated from its analytical context and transported to a context of priests and penitents, of confessing priests and repentant sinners. The method of free association is then linked to the rules of confession. In this way, what at first seemed offensive and paradoxical, becomes a common and normal process. Psychoanalysis is nothing more than a form of confession. And later, when psychoanalysis is accepted and becomes a full-fledged social representation, confession is seen, more or less as a form of psychoanalysis. Once the method of free association has been separated from its theoretical context and has assumed religious connotations, it ceases to cause surprise and uneasiness and assumes, on the contrary, an absolutely common character. And this is not, as we might be tempted to believe, a simple problem of analogy, but a real, socially significant function, a change of values and feelings.

On the other hand, the sharing of common sense theories about certain objects ensures communication between subjects and provides a guide for their conduct (SANTOS, 2005, p. 29). This modification from the unusual to the ordinary occurs with the help of two cognitive mechanisms based on memory and previous conclusions, for example: anchoring and objectification (MOSCOVICI, 1978, 2003).

Anchoring is a tool used by our mind "[...] that transforms something strange and disturbing, that intrigues us, into our particular system of categories and compares it with a paradigm of a category that we think is appropriate" (MOSCOVICI, 2003, p. 61). In this confrontation, our scales of values and the feeling that one has for the object in question, according to Gomes (2012), direct us to the desire to define it as normal or non-normal. By delimiting and inserting a certain object or idea in a category, it acquires peculiarities of this category and receives, as a result, impressions, opinions and feelings towards it, such as:

> When the first information about AIDS appeared, the press immediately called the "new disease" a "gay cancer" or a "gay plague." The fact that it was initially discovered in homosexual subjects, that it caused death without knowing exactly the causes, and that it was contagious, led the press to associate it with cancer (mortal) and the plague

> (contagious and deadly). A meaning was attributed to the new object (AIDS) based on previous knowledge and a name was attributed to it (SANTOS, 2005, p. 33).

Complementing anchoring, objectification is an artifice that discovers the iconic quality of a conception and reproduces a concept in an image or in a figurative nucleus, "(...) which does not necessarily have to be a figure, but a set of meanings that can concretize the object (CARVALHAIS, 2009, p. 127). It can still be considered that "we only have to compare God with a father and what was invisible, instantly becomes visible in our minds, as a person to whom we can respond as such" (MOSCOVICI, 2003, p. 72). Or, to transfigure the complex of psychoanalytic theory developed as a theoretical hypothesis into a real characteristic of the other. In summary, the ideas constituted in specific contexts are perceived as something palpable, concrete and external to people (SANTOS, 2005). Thus, it is assumed that these are the fundamental points of the theory of Social Representations.

Nevertheless, Sá (1998) draws our attention to the fact that although the term "social representation" was founded by Serge Moscovici, to characterize especially the type of phenomenon to which his theoretical interpretation referred, today it is used in a broad way, without a primordial correspondence with the concept initially proposed. "They have genesis independent of the one that resulted in the Muscovician perspective and do not present the character of 'school' that this perspective has today" (SÁ, 1998, p. 61-62). The "Muscovician school" itself unfolds into four complementary theoretical currents, however, supported by the Structural Approach, with Jean-Claude Abric, since this Structural Approach to social representations defines a social representation as an organization, permeated by different dimensions and not as a set of events and processes purely cognitive and it does not conceive representations as a set of purely cognitive events and processes; nor is it dedicated to attempts to establish relations of primacy of the cognitive aspect over the affective and also over the affective in relation to the cognitive, points out Campos et. al (2003).

Therefore, the structural approach defined by Abric (1994 a, 1994 b, 1998), Flament (1994) and Rouquette and Rateau (1998) conceives social representation as an organization, a structure crossed by different dimensions. In this sense, according to Magalhães (2020, p. 05) "teachers are considered professionals who carry out reflections and questions, problematizing their own pedagogical practice". In this sense, it seeks to give these professionals an overview of their work in the field of science.

3 METHODOLOGY

The research under development had the survey and analysis of theoretical data with scientific articles selected from a systematic search in different academic databases and with the support of artificial intelligence software. Among the scientific databases, the following stand out: Google Scholar, SciELO, Web of Science and Scopus, ensuring the expansion of the search scope and the validation of the sources used.

Also used were consulted platforms: *Semantic Scholar*, *Scite.ai, Dimensions AI, Elicit*, *Consensus,* and *Connected Papers*, which employ artificial intelligence technologies to optimize the identification, organization, and analysis of relevant scientific publications. These tools allowed the refinement of searches, based on keywords such as: social representations, science teaching in early childhood education, early childhood education, scientific literacy and the National Common Curriculum Base (BNCC) that facilitated the visualization of relationships or divergences between authors, studies and central concepts.

The selection of articles considered the thematic relevance, methodological rigor and timeliness of the publications, prioritizing studies published in the last ten years. From the readings and analysis of the selected materials, it was sought to build a consistent theoretical framework that would support the discussion on the insertion of Science teaching in early childhood education, considering the curricular, pedagogical and social aspects involved.

The bibliographic and documentary research on BNCC was also considered, in which it was investigated that the teaching of science in early childhood education is named in the BNCC which, within the fields of experience, has the axis: spaces, times, quantities, relationships and transformations, in which it guides the work focused on the initial notions of science, mathematics and knowledge of the world, For example: time, space, nature, measurements, quantities and transformations.

In the words of Queiroz (2006), although quantitative and qualitative research demonstrate methodological particularities, they can be considered complementary and, when united, can be allies in each reality of the investigation, which, in the view of Leite (2020), refers to an approach of double representativeness. Thus, from this context, in order to achieve the objective of the present research, a mixed approach is chosen.

The qualitative approach will be presented from the perspective of Howard Becker (2007), Bronislaw Malinowski (2018), Simone Dourado and Ednaldo Ribeiro (2021), in which they demonstrate that the choice of qualitative methodology in different scientific fields, including studies in education and science teaching, is of a practical and non-ideological nature, in which practicality is related to the construction of the research objects and the

definition of the objectives to be achieved through the objects of study. Therefore, qualitative research is considered to be that approach of investigation in the place where the phenomenon occurs and it is necessary to interact with it.

Qualitative, social, empirical research seeks to typify the variety of representations of people in their social world, however, it aims to know the way people relate to the social world, so that it is possible to understand the level of reality of meanings, motivations, aspirations, beliefs, values and attitudes using descriptions, comparisons and interpretations.

In this sense, for the application of the data collection instruments, two institutions will be considered, one in the southern region and the other in the northern region of the municipality to be researched, geographically located in the Northwest of Paraná. Such groups will receive fictitious names to respect the ethics of anonymity of the research participants. The criterion for choosing the locations is relative to the environment coming from the reality of these teachers.

The research project was submitted to the Research Ethics Committee (REC) for validation and analysis of the Informed Consent Form (ICF), because, according to Batista et al. (2012), the intention of the RECs is to analyze the protocols of scientific investigation, which involve human beings in aspects related to the research subjects, the importance and relevance of the research. Protocols are evaluated in relation to the efforts, resources, and time spent. The CEP also has the mission of monitoring the progress of the projects.

Therefore, all research involving human beings implies ethical and legal characteristics and must be submitted for consideration by the Research Ethics Committee through the CEP/CONEP system (Research Ethics Committees/National Research Ethics Committee) before its beginning, the material used in the research, such as questionnaires, among others, because the research can only be started after the release opinion, as regulated in Resolution 466/2012 (BRASIL, 2012). For the submission of the project , it was based on the Capes manual (BASIL, 2002).

Data collection will take place through written records and audio recording and will occur in three stages. The first is focused on teacher participation based on notes of the first five words of what they remember about the term "work in Science and Mathematics classes in Early Childhood Education". According to Wolter and Wachelke (2013), there is no specific rule limiting the number of words that can be described, however, most researchers request between three and five. After explaining the words, the teachers should rank them, in descending order of relevance. To conclude Stage 1, personal and professional data are requested, and teachers prepare an essay about the meaning of each of the words listed, for

better interpretation later (CARMO; MAGALHÃES JÚNIOR; KIOURANIS, 2018). Books and materials used by them and interviews will also be analyzed.

In the second stage, the sample will consist of 40 students from each unit. Data collection via questionnaire. The guidelines will be carried out explaining all the actions, in which the Free and Informed Consent Term (TALE) will be carried out, as provided for in Resolution No. 466/2012 of the National Health Council.

After data collection, the evoked terms will be exported in spreadsheets. Then, the analysis of the justifications presented by the subjects for each word evoked will be carried out. This analysis will enable the organization of semantic groups. Then, for the identification of SR in the peripheral system, it is intended to use the Structural proposal of Abric (2001), identifying the sum obtained from the degree of relevance whose subjects researched will attribute to a certain semantic group or evoked word, divided by the frequency with which the word was evoked.

Finally, performing the prototypical analysis, the analysis of similarity[3] categories will also be considered through the last step consists of the Focus Group[4]. For the development of this technique, an invitation will be made to the teachers to participate in a focus group, where a script of questions (annex 4) will be made for the interviews, maintaining the originality and fidelity of the speeches. Through the organized discussion of this selected group, more information is obtained about the teacher's SR hour-activity in Science classes, with regard to content analysis and triangulation.

4 RESULTS AND DISCUSSIONS

The initial results of the research on Social Representations related to collaborative work, as it is a form of organization of the teaching work aimed at solving problems in a way that stimulates innovation and enables a process that allows people to interpret and conceive aspects of reality to act in relation to them, since representation takes the place of the social object to which it refers and becomes reality for the actors social (WACHELKE; CAMARGO, 2007).

Another significant point of the research is the contribution to the teaching of science and mathematics, as the practice of teaching science can be considered under two aspects:

[3]Similarity is a representation that is based on graph theory and enables the identification of co-occurrences and connectedness between words, and its results help in the analysis of the structure of a *textual corpus* (CARMAGO; JUSTO, 2013).

[4] The focus group, according to Panisson (2012) is a process of discussion based on the organization, of Anglo-Saxon origin and which arrived in Brazil at the end of the 1940s.

system of knowledge and form of work, in which they are closely related. Thus, defend the idea that even in preschool, children use a scientific approach to learn about the world in which they live, as well as scientists, because they end up using the same process to learn and among them is curiosity, which if mediated by the teacher promotes respect for evidence, willingness to tolerate uncertainty, creativity and ingenuity, critical reflection, collaboration with others, respect for biological sensitivity and persistence. In the words of Silva (2015), Science can be understood as an important area that enables new knowledge and investigation in children in relation to curiosity about the social environment in which they live.

Reflections on the teaching of science focused on the social representations of teachers in early childhood education can promote reflections on the initial and continuing training of professionals in Science and Mathematics Education, at the most different levels and systems of education, aiming to discuss the training of Science and Mathematics teachers.

Research focused on social representations in science teaching provides the resolution of problems relevant to society. In other words, the results of a study aim to improve the work process among teachers in early childhood education to improve and ensure quality teaching to children, because from the SR in Sciences, from the perspective of early childhood education teachers it will be possible to conceive of them a more intimate contact with the various forms of life and environment.

Table 1

Surveys

Year	Title	Authors	Database
2016	Social representations of Early Childhood Education teachers about the development of pedagogical practice in the environment	Maria Suzana de Stefano Menin, Alessandra de Morais Shimizu, Cláudia Maria de Lima	SciELO
2009	Social representations of childhood: a study with parents and educators of Early Childhood Education	Tércia Millnitz Demathé, Maria Helena Baptista Vilares Cordeiro	Research Notebooks
2023	Early Childhood Education, curriculum, BNCC: fields of experience and transition to Elementary School	Regina Célia Machado Coelho de Oliveira	Estácio Repository / Master's Dissertation –
2023	Childhood and Early Childhood Education:	Rúbia Renata das Neves Gonzaga	UEL Repository – State University of Londrina

	social representations of teachers		

Source: Prepared by the researchers (2025)

The studies analyzed highlight that the pedagogical practices and conceptions of Early Childhood Education teachers are deeply marked by their social representations — constructions that directly influence the way childhood and teaching are understood and carried out.

Maria Suzana de Stefano Menin; Alessandra de Morais Shimizu; Cláudia Maria de Lima (2016) brought contributions, in which they investigate the social representations of early childhood education teachers about the teaching of Science, with a focus on the environment. They demonstrate that the practices are, in general, punctual and linked to commemorative dates, without didactic continuity. This deserves reflection when analyzing the research data when identifying how the teaching work occurs within the researched institutions.

On the other hand, when dealing with the teaching of science, the studies distance themselves from the approach of science teaching in relation to the social representations supported by the national curriculum. Regina Célia Machado Coelho (2023), who sought to analyze the regulatory documents (CF/88, ECA, LDB, DCNEI, PNE, BNCC) and investigated how learning rights are articulated in the transition from Early Childhood Education to Elementary School. However, to think specifically about the teaching of science, documentary research was used in an analysis of the BNCC and it was identified that the field "Spaces, Times, Quantities, Relations and Transformations" addresses its intrinsic relationship with scientific knowledge, as it covers the experiences in which children can "expand their knowledge of the physical and sociocultural world and can express themselves in a concrete and abstract way in their daily lives" (BNCC, 2017).

This field of experience is strictly linked to the teaching of science and recognizes the natural curiosity of children about the physical world, manifested by questions and comments about natural phenomena and thus reflects their transformations, the characteristics of objects and causal relationships.

The conception of fields of experience is based on the premise that children learn in an integrated and relational way, not compartmentalized. Barbosa and Richter (2015) argue that the fields of experience didactically reconfigure the knowledge of different areas according to the children's experiences, respecting the specificity of children's action. This approach makes it possible to overcome the fragmentation of knowledge and promote the integration of different languages and forms of children's expression.

5 FINAL CONSIDERATIONS

During the development of the research, it is expected that this research will contribute to a deeper understanding of the social representations about the teaching of Science in Early Childhood Education. The initial results of the research can be used for reflections on the curriculum and the work of hour-activity and regent teachers in an interdisciplinary and collaborative way, in order to promote a quality and emancipatory education.

The expected results may help in the debates on educational policies, curricular plans and teacher training programs, aiming at the improvement of teaching practice in this area and the encouragement of children's interest in Science in early childhood education.

REFERENCES

Batista, K. T., & et al. (2012). O papel dos comitês de ética em pesquisa. Revista Brasileira de Cirurgia Plástica, 27(1), 150–155.

Brasil, Ministério da Saúde, Conselho Nacional de Saúde. (2002). Manual operacional para comitês de ética em pesquisa. Brasília: Ministério da Saúde.

Carmo, T., Magalhães Júnior, C. A., & Kiouranis, N. M. M. (2018). Representações sociais sobre "ser professor de química": A formação inicial em foco. Debates em Educação, 10(21), 329–355. https://doi.org/10.28998/2175-6608.2018v10n21p329-355

Carvalho, R. L., & Corrêa, R. A. (2012). A criação de ambientes favoráveis à aprendizagem significativa crítica nas aulas de matemática em contextos de cursos regulares. In 5º ENAS - Encontro Nacional de Aprendizagem Significativa, Garanhuns, 2012, Anais de Resumos (p. 19). Garanhuns.

Creswell, J. W. (2007). Projeto de pesquisa: Métodos qualitativo, quantitativo e misto (L. de Oliveira da Rocha, Trans., 2nd ed.). Porto Alegre: Artmed.

Creswell, J. W., & Clark, V. L. P. (2010). Designing and conducting mixed methods research. Thousand Oaks, CA: Sage.

Cunha, R. C. O. B., & Barbosa, A. (2017). Trabalho coletivo e colaborativo na escola: Condições e princípios de trabalho. Revista Unisinos, 21(3), 267–275.

Demathé, T. M., & Cordeiro, M. H. B. V. (2023). Representações sociais sobre infância: Um estudo com pais e educadoras de Educação Infantil. Cadernos de Pesquisa, 53(197), 1–22. https://publicacoes.fcc.org.br/cp/article/view/8179

Dourado, A. V. (2021). Do direito a hora-atividade à necessidade da(o) professora(r) hora-atividade na Educação Infantil (Dissertação de Mestrado, Universidade Estadual de Maringá). Orientadora: Silvia Pereira Gonzaga de Moraes, Maringá.

Dourado, S., & Ribeiro, E. (2021). Metodologia qualitativa e quantitativa. In C. A. de O. Magalhães Júnior & M. C. Batista (Eds.), Metodologia da pesquisa em educação e ensino de ciências (1st ed., pp. n.a.). Maringá, PR: Gráfica e Editora Massoni.

Galvão, M. C. B., Pluye, P., & Ricarte, I. L. M. (2017). Métodos de pesquisa mistos e revisões de literatura mistas: Conceitos, construção e critérios de avaliação. INCID: Revista de Ciência da Informação e Documentação, 8(2), 4–24. https://doi.org/10.11606/issn.2178-2075.v8i2p4-24

Gibbs, A. F. G. (1997). Social research update. Social Research Update, (19), 1–6. http://sru.soc.surrey.ac.uk/SRU19.html

Gomes, L. C. (2012). Representação social dos autores dos livros didáticos de física sobre o conceito de calor (Dissertação de Mestrado, Universidade Estadual de Maringá). Maringá.

Gonzaga, R. R. das N. (2023). Infância e Educação Infantil: Representações sociais de professores (Dissertação de Mestrado, Universidade Estadual de Londrina). Londrina. https://bdtd.ibict.br/vufind/Record/UEL_bcc-123456

Krasilchik, M. (1987). O professor e o currículo das ciências. São Paulo: EPU/EDUSP.

Leite, J. de C. (1988). Ensino de ciências e a formação do cidadão. Em Aberto, 7(40), 55–60.

Leite, J. de C. (2020). Ser professor(a) de Ciências e Biologia: Representações sociais na formação inicial (Dissertação de Mestrado, Universidade Estadual de Maringá). Maringá.

Magalhães Júnior, C. A. de O., & et al. (2020). Concepções e representações sociais de professores sobre a sua formação inicial: Construção e validação de um questionário. Ensaio: Pesquisa em Educação em Ciências, 22, e12364. https://doi.org/10.1590/21172020210110

Moscovici, S. (1978). A representação social da psicanálise (Á. Cabral, Trans.). Rio de Janeiro: Zahar.

Moscovici, S. (2003). Representações sociais: Investigações em psicologia social (P. A. Guareschi, Trans.). Petrópolis, RJ: Vozes.

Oliveira, R. C. M. C. de. (2023). Educação Infantil, currículo, BNCC: Campos de experiência e transição para o Ensino Fundamental (Dissertação de Mestrado, Centro Universitário Estácio de Ribeirão Preto). Ribeirão Preto. https://repositorio.estacio.br/handle/123456789/XXXXX

Sá, C. P. (1998). A construção do objeto de pesquisa em representações sociais. Rio de Janeiro: EdUERJ.

Santos, M. F. S. (2005). A teoria das representações sociais. In M. F. S. Santos & L. M. Almeida (Eds.), Diálogos com a teoria da representação social (pp. 14–38). Recife: EdUFPE.

Silva, F. D. A. (2015). Representações sociais de professores da educação infantil sobre o desenvolvimento da prática pedagógica em ciências (Tese de Doutorado, Universidade Federal de Uberlândia). Uberlândia.

Wachelke, J. F. R., & Camargo, B. V. (2007). Representações sociais, representações individuais e comportamento. Interamerican Journal of Psychology, 41(3), 379–390.

Menin, M. S. de S., Shimizu, A. de M., & Lima, C. M. de. (2009). Representações sociais de professores da Educação Infantil sobre o desenvolvimento da prática pedagógica em meio ambiente. Educação e Pesquisa, 35(3), 469–485. https://www.scielo.br/j/ep/a/qJBJpMbwHX3DCK8zT3kd4Mt