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INVESTIGATIVE COMMUNITY AND PROFESSIONAL DEVELOPMENT OF TEACHERS

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ABSTRACT

The aim of this article is to analyze how Early Childhood Education teachers from an investigative community in the public school system translate the National Common Curricular Base for Early Childhood Education (BNCC, Portuguese abbreviation) into pedagogical practices. It is a descriptive-analytical qualitative research. The research instruments used were: semi-structured interview, observation, and document analysis. The study involved two teachers and one principal from the municipal public network of Early Childhood Education in Barueri - SP. An investigative community is understood as contexts in which teachers construct knowledge about their own practices, engaging in dialogue with theories. The data highlight the importance of knowledge-building processes for teaching, with special emphasis on the role of each participant in the construction of pedagogical content knowledge that materializes the BNCC. The research indicates the significance of ongoing professional development at the workplace.

Keywords: investigative community; teacher learning; professional development of teachers.

RESUMO

COMUNIDADE INVESTIGATIVA E DESENVOLVIMENTO PROFISSIONAL DE PROFESSORES

O objetivo deste artigo é analisar como professores de Educação Infantil de uma comunidade investigativa da rede pública traduzem a Base Nacional Comum

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Curricular da Educação Infantil (BNCC) em práticas pedagógicas. Trata-se de uma pesquisa descritivo-analítica de natureza qualitativa. Como instrumentos de pesquisa, foram utilizados: entrevista com roteiro semiestruturado, observação e análise de documentos. Participaram do estudo duas professoras e uma diretora da rede pública municipal de Educação Infantil de Barueri – SP. Por comunidade investigativa, entende-se contextos nos quais professores constroem conhecimentos sobre as próprias práticas, dialogando com teorias. Os dados evidenciam a importância dos processos de construção da base de conhecimento para o ensino com especial destaque para o protagonismo de cada participante na construção de conhecimento pedagógico de conteúdo que materializa a BNCC. A pesquisa indica a importância da formação continuada no local de trabalho.
Palavras-chave: comunidade investigativa; aprendizagem docente; desenvolvimento profissional de professores.

RESUMEN

COMUNIDAD INVESTIGADORA Y DESARROLLO PROFESIONAL DE LOS DOCENTES

El objetivo de este artículo es analizar cómo los maestros de educación infantil de una comunidad pública de investigación traducen la Base Curricular Nacional Común de Educación de la Primera Infancia (BNCC, abreviatura en portugués) en prácticas pedagógicas. Se trata de una investigación descriptiva-analítica de carácter cualitativo. Como instrumentos de investigación se utilizaron: entrevista con guión semiestructurado, observación y análisis de documentos. Dos docentes y un director de la red pública municipal de Educación Infantil de Barueri - SP participaron del estudio. Una comunidad de investigación significa contextos en los que los maestros construyen conocimiento sobre sus propias prácticas, dialogando con teorías. Los datos muestran la importancia de los procesos de construcción de la base de conocimiento para la enseñanza con especial énfasis en el papel de cada participante en la construcción del conocimiento pedagógico de contenidos que materializa el BNCC. La investigación indica la importancia de la educación continua en el lugar de trabajo.
Palabras clave: comunidad investigadora; aprendizaje del profesorado; desarrollo profesional de los docentes.

Introduction[1]

The aim of this article is to analyze how Early Childhood Education teachers from an investigative community within the public school system translate the National Common Curricular Base for Early Childhood Education (BNCC, Portuguese abbreviation) into pedagogical practices. The research was conducted at a public Early Childhood Education school located in the municipality of Barueri, in the western region of the São Paulo metropolitan area, during the period from 2018 to 2020. We examine the pedagogical work of two teachers and one principal.

For discussion and analysis, we focus on the training model proposed by the school principal, which is characterized by the professional development of teachers, materialized during the Collective Pedagogical Work Time (HTPCs, Portuguese abbreviation) connected to the school context. Thus, selections from a project developed by the teachers will be presented, with the intention of analyzing the resonance of the studies conducted during the HTPCs, and how these teachers translated the fields of experiences and the learning and development objectives of the BNCC into pedagogical practices achievable for their students.

Thus, the intention is to give centrality to teacher-authored practices, in which the teacher is perceived as a competent, autonomous, and creative individual. It is emphasized that teachers with extensive experience in education, researchers, and supported by their ongoing professional development, can find ways of working that promote learning and development for their students, regardless of the educational program, whether it is local or national.

Following the Methodological Pathway

This research is designed as a descriptive-analytical study of qualitative nature. The instruments used in this study were interviews conducted with research partners (FORMOSINHO; OLIVEIRA-FORMOSINHO, 2019), observations made during the HTPCs meetings, and portfolios from both teachers and the principal. According to these authors, in the field of teaching, it is the theoretical choices that enlighten reflection and practice, the selection of committed colleagues engaging in dialogue to improve teaching performance, and, above all, the option to see students as essential companions in guiding teaching practice.

The principal, in addition to the Teaching Course, holds degrees in Literature and Pedagogy. She worked for three years in High School, teaching Portuguese, and fourteen years in Early Childhood Education as a preschool teacher in the municipal network of Barueri. Over the past fifteen years, she worked as a principal in Early Childhood Education. To ensure the anonymity of the participating teachers, we identified them as "X" and "Y".

Teacher "X" has twenty-seven years of teaching experience and has always worked in Early Childhood Education in the Public Education Network, in preschool classrooms. She holds a secondary education degree in Teaching and a Bachelor's degree in Pedagogy.

Teacher "Y" has twenty-seven years of experience in teaching, all in Early Childhood Education, within the Public Education Network, and with preschool-age students. She has a secondary education degree in Teaching and a Bachelor's degree in Social Sciences.

1 The research was submitted to the Brazil Platform, following all the confidentiality, completion, and document posting procedures required by the platform, as well as care in handling research participants. The CAAE of the project is CAAE 18126919.4.0000.0084.
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The Early Childhood Education school we investigated has 1,200 students, with 21 classrooms in both morning and afternoon sessions, resulting in 42 classrooms with an average of up to 34 students in each. There are 42 teachers, all of them public servants appointed by the Municipal Secretary of Barueri.

The school presents a welcoming and well-being ambiance, reflected in its areas that demonstrate respect and appreciation for the children and their deeds. One of these areas is the playground, which, besides being the favorite spot for all children, it serves as inspiring settings and hold resources for initiating classroom projects. The explanation lies in the fact that the playground is in a green area with many plants, trees, grass, earthen floors with trunks, wood, leaves, and other elements that, once discovered by the children, become true treasures, resulting in great creativity and games.

Theoretical Framework: Defining Concepts

The National Common Curricular Base (BNCC, Portuguese abbreviation) is a mandatory document that sets forth the learning outcomes that all students in Brazilian territory must acquire throughout Basic Education. This determination aims to ensure their rights to learning and development, in accordance with the National Education Plan (PNE, Portuguese abbreviation), (BRASIL, 2017).

We understand, advocate for, and theorize that teacher training should take place within the school environment because we believe in a training that benefits not only the educators but also places primary focus on the student, besides the creation of meaningful changes in the school educational processes. This model of training is in alignment with the concept of teachers' professional development, supported by the ideas of the following authors.

Marcelo García (2009, p. 10):

> [...] a process, which can be individual or collective, but should be contextualized in the teacher's workplace - the school - and that contributes to the development of their professional competencies through experiences of different nature, both formal and informal.

Oliveira-Formosinho (2009, p. 226):

> [...] an ongoing process of improving teaching practices, centered on the teacher or a group of teachers in interaction, including formal and informal moments, with the concern of promoting educational changes for the benefit of students, families, and communities.

For both authors, professional development is a lifelong process that considers both individual and collective dimensions. In this process, the teacher is viewed as a unique individual shaped by their life experiences, beliefs, social interactions, emotions, knowledge, and various other factors that constitute the teaching professional.

The school is a privileged environment in order to teachers' professional development take place once it can facilitate the construction of a "culture of collaboration" (MARCELO GARCÍA, 1999, p. 141) among teachers, breaking away from the common culture of teacher individualism. This culture of collaboration among teachers can take place in many areas and moments within the school, such as conversations in the teachers' lounge, during breaks or Individual Work Time (HTI, Portuguese abbreviation), in deliberate partnerships where colleagues observe and analyze each other's classes, and so on. This collaboration, whether institutionalized or spontaneous, can also occur during official training moments within the school - the Collective Pedagogical Work Time (HTPC, Portuguese abbreviation).

The wide-ranging exchanges among peers and collective work also serve the essential function of strengthening the profession through the construction of a critical and reflective class consciousness, and engagement in struggles aimed to improve recognition and working conditions for teachers in all aspects of

their profession. These elements are necessary to contribute to the development of teachers, that should take place in daily school activities, as affirmed by Lima and Gomes (2002, p. 181).

> Teachers need to demonstrate that the real situations they face in their daily lives are not far from those experienced by their colleagues. The conditions of life and work, the competencies and/or deficiencies of their training built and rebuilt during their teaching profession are part of a social and human structure. It is necessary to understand this mesh, redefining this context, pooling the efforts of a professional category, without losing sight of the struggle or the reality in which we are inserted.

In this context, Grigoli et al. (2010), supported by the studies of Hargreaves and Fullan (2000), add value to in-school professional development by proposing that the school is a "learning organization" (GRIGOLI et al., 2010, p. 240), meaning that as teachers develop, the school also develops.

Bolívar (1997) agrees with the rule that the school is a place of learning, as it learns from its memory and history as an institution. Regarding the teacher, the context and work relationships that provide elements of learning. According to the author, the school acquires the status of a learning organization when the process of improvement becomes a permanent goal of the institution.

In advocating for the school as fertile ground for teachers' professional development, Oliveira-Formosinho (2009, p. 268) states that:

> School-based professional development is thus a form of lifelong learning, considered as a global educational action, as a participatory and articulated training with situations and/or in work situations, merging initial and ongoing training in the same lifelong education process.

Understanding the teacher as a whole person and directing their professional development to the school setting align with the idea of considering schools as investigative communities. Investigative communities are places where teachers adopt an investigative stance, remain engaged with it, have knowledge of the community in which they teach, and are willing to discuss and change their practice to improve their performance and the education of children.

The main element that describes a community as investigative is what Cochran-Smith and Lytle (2015, p. 249) refer to as "inquiry as stance," which concerns the position that teachers adopt within this context towards knowledge and their own practice. In investigative communities, educators engage in a shared inquiry, considering it as a purposeful endeavor and a collective attitude in response to new educational demands. Thus, according to these authors, "the notion of inquiry as stance underscores that teacher learning for the next century needs to be understood not as an individual accomplishment process, but as a long-term collective project embedded in a democratic agenda" (COCHRAN-SMITH; LYTLE, 2015, p. 296, our translation).

Cochran-Smith and Lytle (2015) define investigative stance as an intellectual perspective, a way of making sense of and connecting the daily work of each teacher to the work of others, as well as to broader social, historical, cultural, and political contexts. This entails the interweaving of knowledge from different theories and educational approaches, resulting in a deeper and more comprehensive understanding of the educational phenomenon, the teaching and learning process, so that teachers can develop the skills to objectively and subjectively describe pedagogical practices in their multiple determinants and variables.

The teacher with an investigative stance is constantly engaged in the theory-practice and practice-theory interplay. In this sense, investigative communities serve as important spaces where teachers have voices, and these voices are heard "loudly and articulately" (GOODSON, 2013, p. 67).

According to Cochran-Smith (2016), what determines whether a community is investigative or not are the questions that its own members ask themselves, rather than those

imposed upon them. In this context, there is a constant presence of questioning assumptions, hypotheses, and usual or universal practices, with a focus on adopting a systematic approach and considering alternative choices (COCHRAN-SMITH, 2016 apud FIORENTINI; CRECCI, 2016).

However, in order to the school-centered professional development takes place, "instructional leadership" (MARCELO GARCÍA, 1999, p. 141) among teachers in the school is essential. This instructional leadership motivates, guides, and drives teachers towards the necessary changes and innovations in their classroom practices and school-wide practices. In the case of the study at hand, this leadership is assumed by the school principal.

The instructional leadership of the principal aligns with the new profile of a manager proposed by Lück (2000, p. 16):

> A manager of social dynamics, a facilitator and orchestrator of stakeholders, an orchestrator of diversity to give it unity and consistency, in the construction of the educational environment and secure promotion of student development. To do so, in their work, they pay attention to each event, circumstance, and action as part of a set of events, circumstances, and actions, considering them globally, in an interactive and dynamic manner.

This new management profile is in harmony with the innovative manager proposed by Amorim (2017), who conceives it as a leader who advocates for education and the school as a strategic place for the construction of diverse, scientifically validated knowledge necessary for human development. They believe in the work of their team, stay motivated, create channels of integration between the school, society, and public authorities, and engage in the ongoing professional development of the school staff, expanding the teacher's training spaces.

He conceives the teacher as "a source of knowledge and skills necessary for instruction" (COHEN; BALL, 1999, p. 6 apud DARLING-HAMMOND, 2019, p. 2). This contrasts with the view that the teacher is merely a repository of facts and ideas. In addition to that, this managerial profile sees the teacher as a questioner of their own childhood images, an encourager of each child's learning, a learner alongside them, and a constant critic of their practice, engaging with theory and creating challenging environments and situations for their students (MOSS, 2011).

Considering the teacher from these perspectives brings to mind a competent professional, as indicated by Darling-Hammond and Bransford (Preface, xxiii, 2019) when referencing Lee Shulman: "Those who can, do; those who understand, teach.".

In order to become a successful and effective teacher, it is essential to possess knowledge of how to transform content considering the purposes of instruction, the methodologies to be used, the time dedicated to each theme, the materials, and the spaces utilized to facilitate knowledge acquisition and children's learning construction – these components. According to Shulman (2014), these components should be provided in the foundation of teacher education, supported by a knowledge base for teaching.

The knowledge base for teaching, according to Shulman (2014, p. 200), is "a codified and codifiable aggregate of knowledge, skills, understanding, and technologies, of ethics and disposition toward collective responsibility, and also a means of representing and communicating it.".

When considered by scholars as imperative, the existence of a knowledge base for teaching, Shulman (2014, p. 206) and his team, among other authors, postulated that this knowledge base for teaching should be composed of the following elements:

> [...] content knowledge; general pedagogical knowledge; curriculum knowledge; pedagogical content knowledge; knowledge of students and their characteristics; knowledge of educational contexts; knowledge of the purposes, goals, and values of education and its historical and philosophical foundations.

Of these knowledges, according to Shulman (2014, p. 207), pedagogical content knowledge (PCK) takes primacy in the knowledge base for teaching because:

> It identifies the distinct areas of knowledge necessary for teaching. It represents the combination of content and pedagogy in understanding how specific topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of students, and presented in the educational process in the classroom.

It is a kind of knowledge about how to teach something that is built by each individual teacher in their professional paths, considering different curriculum components, areas of knowledge, levels, and modes of teaching. In the same line of thought, Berry, Depaepe, and Driel (2016) point out that pedagogical content knowledge is perceived as professional knowledge, constructed by the teacher, and it is flexible and expandable based on their experiences in initial and in-service training. It is closely tied to the context in which it is applied and, therefore, cannot be evaluated in a normative or comparative manner.

According to Shulman (1987), PCK refers to the way content is elaborated and presented in order to be understood by children, using analogies, illustrations, examples, explanations, and demonstrations. It includes the teacher's understanding of what facilitates and discourages children's learning in a particular topic, as well as their misconceptions and how these may affect their learning (ALMEIDA et al., 2019). For the episode of this understanding and consequently teaching action, PCK mobilizes, within the base of knowledge for teaching, a series of actions called "processes of pedagogical reasoning and action" (SHULMAN, 1987, p. 12) or the process of pedagogical reasoning and action. This process of pedagogical reasoning and action refers to a series of events initiated in pedagogical practice, aimed at providing conditions for the teacher to develop relevant knowledge about how to teach different topics to children in different contexts (MARCON; GRAÇA; NASCIMENTO, 2011).

Shulman (1987) presents the process of pedagogical reasoning and action as a cycle consisting of six elements: "understanding, transformation, instruction, assessment, reflection, new understandings" (LOUGHRAN; KEAST; COOPER, 2016, p. 389). Understanding is linked to how the teacher comprehends the subject matter they teach, a specialized understanding (SHULMAN, 1987). Transformation is the way in which the teacher processes the ideas they understand so that they can be taught. Instruction involves all the visible characteristics of teaching in the classroom (SHULMAN, 1987). Assessment, on the other hand, is the process that takes place during and after instruction, both through ongoing and informal evaluations of students' understanding, existence of doubts or errors, as well as through more systematic and formal methods of assessment (MIZUKAMI, 2004, p. 43). It is important to note that in assessment within the process of pedagogical reasoning and action, the focus is not on the student but rather on the teacher's performance in relation to the established teaching goals (MARCON; GRAÇA; NASCIMENTO, 2011). Reflection is the process that involves reviewing and critically analyzing one's performance in teaching practice.

The aim is that, by reconstructing and recreating this practice, it is possible to capture the events that occurred, the emotions generated, and the learnings obtained. The new understanding is as stated by Marcon, Graça, and Nascimento (2011, p. 267):

> The moment the teacher realizes that, through an initial decentralization created by dilemmas or issues, they were able to restructure their knowledge base, either by reconstructing the existing components or building new ones based on them.

This kind of knowledge, according to these authors, relies on information from the teaching and learning context that originates from different moments of reflection. Reflec-

tion-in-action, characterized as diagnostic, occurs during teaching, in the teacher's mind, as a result of a deeply refined subconscious knowledge that is triggered by a situation in the present action (LOUGHRAN; KEAST; COOPER, 2016; SCHÖN, 1997). Thus, it uses the knowledge from the foundation to meticulously examine the context, categorize the information, select the most important ones that may cause issues or difficulties, and establish priorities.

Marcon, Graça, and Nascimento (2011), relying on the studies of Gimeno Sacristán (1995) and Grossman et al. (1989), point out that upon obtaining this information, pedagogical content knowledge selects the most relevant problem situation and calls upon all the deposited knowledge from the knowledge base that relates to the teaching and learning situation requiring attention. At this moment, pedagogical content knowledge triggers a destabilization in the knowledge base by seeking possibilities for resolving the situation. Thus, with each new knowledge constructed, pedagogical content knowledge sends it back to the knowledge base, justifying Shulman's proposition (1987) that the "knowledge base is not fixed and immutable" (LOUGHRAN; KEAST; COOPER, 2016, p. 388).

Next, we present the last, but not least important concept of this article, which is part of our theoretical framework, that of Conceptual Maps, as proposed by Grillo and Lima (2008, p.145),

> They are graphic representations of groups of concepts organized in the form of diagrams that indicate relationships between these concepts. Although seemingly simple and often mistaken for schemes or organizational charts, maps have the specificity of making the meanings attributed to concepts evident and clarifying the connections that exist between them in a specific area of knowledge, a course, a discipline, an article, a lecture, among others.

Concept maps played a significant role in the formation of the investigative community comprised of the principal and the teachers analyzed in this study.

The investigative community and the pedagogical practices of the teachers

Ideally speaking, HTPCs were created with the purpose of promoting studies, exchanging professional experiences, and sharing teaching practices, as well as serving as a space for teachers to be heard and fostering their professional development, as proposed by Oliveira-Formosinho (1999) and Marcelo García (2009).

The topics addressed in the HTPC, at the EMEI we followed, under the guidance of the principal, encompassed an ecological environment perspective advocated by Bronfenbrenner (1996, p. 5), "[...] as a set of nested structures, one inside the other, like a set of Russian dolls [...] extending far beyond the immediate situation and directly affecting the developing individual [...]". This encompassed issues at both the micro and macro levels, having a direct impact on the lives and practices of the teachers in this community.

The principal's approach provided indicators of ethical, aesthetic, and political commitment to the teachers, the families, and, above all, the children, allowing for both the consideration of existing beliefs within the group and the incorporation of new ones based on study and dialogue.

The HTPC meetings from the school principal's perspective:

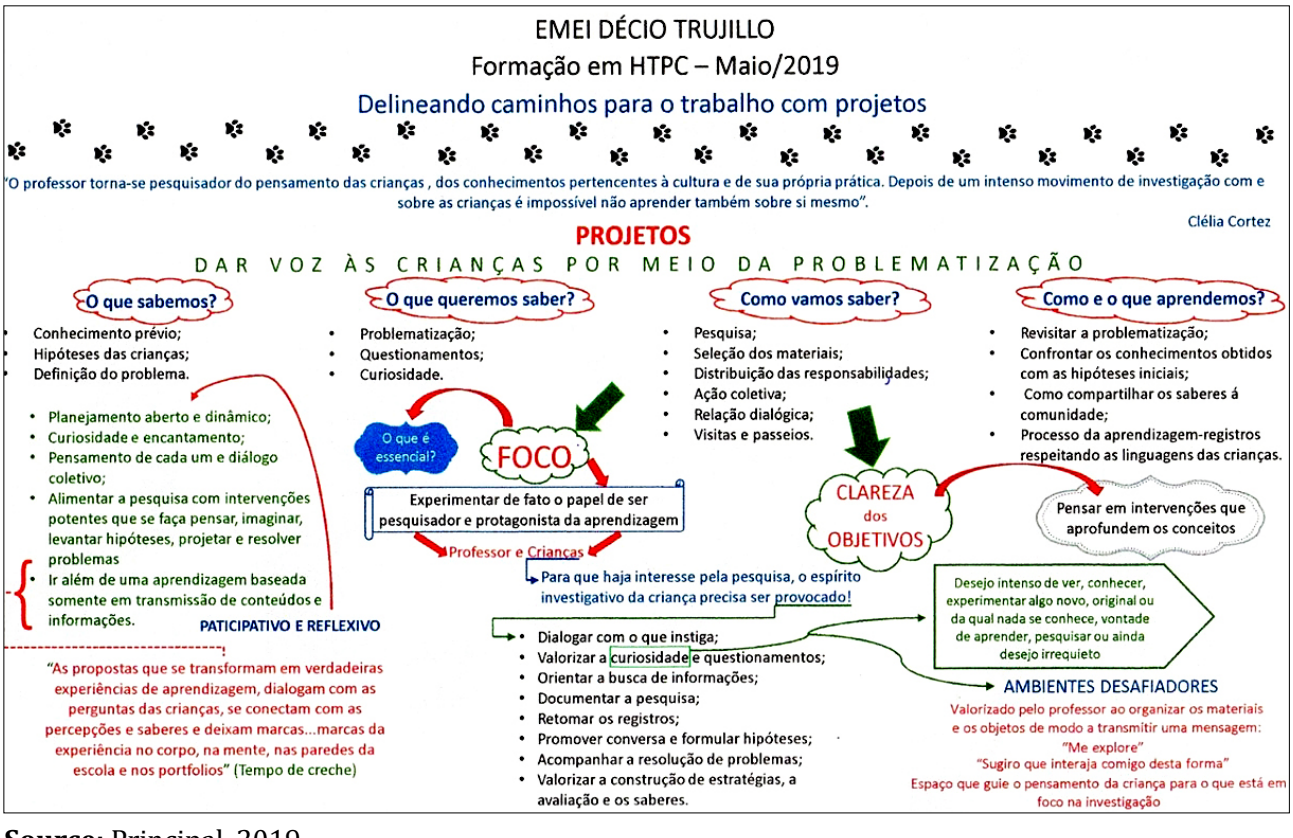
> [...] it is a moment of reflection and transformation. I believe in the professional as a researcher. What comes to my mind when I think about these trainings is the conception of childhood and childhood school. The topics that I bring to these HTPC meetings unfold throughout the year, I don't have anything fixed [...] The school has to be a light space, and education as a possibility of transformation. We have to think of the school as a community space where everyone is co-responsible for the children who are there. When I think about these training moments, I think about this.

Regarding the potential of the formative content to assist the teachers in their pedagogical proposals and assessment models, the principal explains:

> The content of the HTPC is gradually outlined, and there may come a time during the year when I don't know what else to discuss, but it is the teachers' own anxieties and day-to-day actions that set the tone. We are talking about narratives of Mini-Stories to help the children's potential, and it will be great for the families to receive a beautiful story about their child without judgment, comparison, or pointing out difficulties. This will help when the teachers carry out the semester evaluations.

One of the formative strategies used by the principal was the use of Conceptual Maps, which aimed to facilitate understanding and strengthen knowledge of the fundamental foundations of early childhood education at the school. These maps were constructed during HTPC sessions together with the teachers or created by the principal and presented to the group at the end of a study cycle. Below is the Conceptual Map entitled "Outlining pathways for project work."

Image 1 - Conceptual Map "Outlining pathways for project work."



Source: Principal, 2019.

Based on the concept of school as a space for childhood, the principal engaged in personal study and coordinated some Pedagogical Workshops (HTPCs) with the theme - Projects in Early Childhood Education. These HTPCs were divided into two stages: HTPC (April 29, 2019) - Studies on projects in Early Childhood Education, and HTPC (May 20, 2019) - Why work with projects in Early Childhood Education?

The concept of childhood school refers to a rich and stimulating space where the child has the freedom to "unlearn" (LOPES, 2018, p. 129) the environments designed for them by adults, taking into account their needs. In the childhood school, the child finds the necessary conditions for their learning and development, as it is based on respect for the child as a whole, unique, historical being, shaped by a life story that is considered when selecting the knowledge to be offered. The child is seen

as the protagonist of their actions, competent from birth, and is regarded as a social being, constructing their learning through interactions with peers, adults, and the environment around them (BRASIL, 2009; CORSARO, 2002).

Returning to the HTPC meetings, it is worth noting that the study on the theme of "projects" did not end in just two sessions but became the focus of several meetings that took place in the principal's office, during walks around the school, and in follow-up visits to the teachers' classrooms to address doubts, seek suggestions, and provide guidance.

With the intention of building the idea that projects should emerge from the children's interests and needs, hold meaning for them, and be steeped in pedagogical intentionality, where their voices are heard and their actions are guided. Projects should, therefore, show coherence and points of connection with the child's immediate interests, with new knowledge, and with knowledge historically constructed - scientific, social, and cultural - which are essential for the child's life as citizens.

Following this approach, the principal brought the text "The Airplane Project" for reflection and analysis, based on the book by Helm and Beneke (2005), entitled "The Power of Projects: Meeting Contemporary Challenges in Early Childhood Classrooms-Strategies and Solutions." The selected passage from the book contained the account of a teacher who noticed the children's interest in airplanes, as evidenced by their conversations in the classroom, playtime activities during breaks, observations of airplanes in the sky, and the perception of smoke trails marking the clouds.

Based on these indications, the teacher saw an excellent opportunity to work with the children's interests and needs and expand them with scientific, social, and cultural knowledge. Firstly, she verified if the subject was strong for the children's development and learning and if it could create a hypothetical network. Within this network, the teacher was inspired by the Brainstorming technique, taking as a reference one of the key points of this strategy, which is to present a topic to the group and welcome their ideas in order to collect solutions for a problem, seek innovations, and build new knowledge. Based on the children's ideas and with her pedagogical intention, the teacher created a net of potential knowledge to be addressed, providing an opportunity for the children's learning.

It is worth noting that this type of perception is characteristic of teachers who have a strong knowledge base and are open to new learning (SHULMAN, 2014), with an expertise of the content to be taught, which involved deepening the subject and expanding their knowledge base accordingly.

The next stage of this HTPC was the presentation of a conceptual map (HELM; BENEKE, 2005) on the use of projects in Early Childhood Education.[2] As proposed by Helm and Beneke (2005), the principal's intention was to provide a guide as a reference to help the teachers build projects following this model. This phase involved reflective reading of the text, careful analysis of this conceptual map, and the challenge posed by the principal's question: "Do the projects we develop here at school and those that will be developed in the future have the potential to construct knowledge with the children?" Based on this inquiry, the teachers conducted a personal assessment of the effectiveness of the project they were planning to develop with their children and those that were already in progress. Some teachers realized that their themes were not as comprehensive, as they had few branches, which did not allow them to advance with the topic. Meanwhile, other projects from other teachers offered broader scope. Although this training only constituted an initial step for the study of projects, it unsettled some of the

2 This Conceptual Map is presented in detail in SILVA, M. T. da. Preschool Teachers of an Investigative Community Translating the National Common Core Curriculum into Pedagogical Practices. Thesis (Ph.D. in Education, Art, and History of Culture). Universidade Presbiteriana Mackenzie, São Paulo, 2021.

group's established certainties and motivated them to further investigate the subject.

We emphasize that in this training, the profile of the principal, as a competent professional committed to education and highly skilled in teaching, is equivalent to that of an innovative manager who understands the school as a place capable of fostering diverse knowledge. They act as an orchestrator of actors, an integrator of diversity to provide unity and consistency. Moreover, they are capable of staying motivated and inspiring their team, perceiving and taking responsibility for the development of their teachers and the entire group, forming themselves with them. Furthermore, they maintain credibility and trust in the potential of everyone in the school, encouraging them to grow continuously (AMORIM, 2017; LÜCK, 2000).

We highlight that this configuration of study in HTPCs, nurtured and consolidated on the school ground, pursuing the professional development of teachers (OLIVEIRA-FORMOSINHO, 2009; MARCELO, 2009), allowed the group to bring theories already established, as well as teaching practices and the teacher's voice, all as propelling elements of changes in the quality of teachers' work, to the center of the dialogue. This contributed to effective education, ensuring learning and development not only for the teachers but also for the children, and engaging in the construction of a school as a community of meaning, values, knowledge, and exchanges where research is valued (COCHRAN-SMITH; LYTLE, 2015; COCHRAN-SMITH apud FIORENTINI; CRECCI, 2016).

Continuing with the empowerment of teachers to improve their work with projects, the HTPC on May 20, 2019, featured the proposal of reading and reflecting on the text by Cortez (2013), a trainer from the Instituto Avisa Lá, obtained from the magazine Nova Escola – "What does a good project for Early Childhood Education need?" According to Cortez (2013), projects can help schools to assume and expand their responsibilities in promoting new knowledge with meaning and depth. For this to happen, the author pointed out some aspects that teachers should pay attention to: choosing the project theme in partnership with the children; maintaining a focus to systematize and expand children's knowledge; involving the children in the project's journey; aiming to arouse curiosity in the little ones; valuing planning without losing flexibility.

After the discussion and analysis carried out by the teachers and the principal regarding the above-mentioned text, the next step of the HTPC was to share a project developed in 2019 by Teacher "X", entitled "Ants", with the 2nd phase of Preschool, comprising 27 children aged five years old. In this project, the potential of the branches proposed by Helm and Beneke (2005) with their nets of knowledge was highlighted.

The purpose of this moment of sharing experiences, based on a project from a teacher within the school, was to provide the colleagues with assistance in the development and writing of their own projects, which the principal pointed out as a significant challenge for some teachers.

By adopting the approach of collecting examples from the teachers' own experiences within the school for the training sessions, the value of the teachers' work was emphasized, which resulted in encouraging the team to believe in their ideas, as advocated by Oliveira-Formosinho (2009). This approach meets the teachers' need to be honored and supported in order to nurture their students. Additionally, this process allowed for the appreciation and maintenance of the sense of community, considering their unique histories, shared discourse, creation, and support for their own conceptions and pedagogies as a group (COCHRAN-SMITH; LYTLE, 2015; BOLIVAR, 1997).

The examples were usually illustrations of their own school practice, collected from good practices and even from the group's mistakes. The mistakes were not judged or even identified by the author. However, they were treated

as powerful elements for analysis and reflection, to improve teaching and learning, for the benefit of the children, and to strengthen the school's position as a learning organization (BOLIVAR, 1997; GRIGOLI et al., 2010).

Teacher "X's" project endorsed the premises of a work that originated in her own classroom, where curiosity and the children's interests served as the driving forces for the teacher's decisions, and her pedagogical intentionality set the tone. It demonstrated her lightness and commitment in responding to the children's questions.

In the words of Teacher "X", the ant project began like this:

> [...] an event is captivating the children attention. A large tree near the classroom is the object of observation. In reality, the interest is not in the tree itself, but in what happens on it. A group of ants working tirelessly, collecting leaves and carrying them to their anthill under the tree. Every time they leave the classroom, the children head over to the tree to watch the ants at work. Their glances are focused and almost absorbed. They cheer on the tiny ants that seem to make a tremendous effort to carry the piece of leaf and reach the anthill. When they arrive, the children celebrate. Going to the bathroom has become an excuse to sneak a peek at the ants. I couldn't ignore this interest of the children, so we started researching ants. I committed to bringing a video about ant organization for the following week. Thus, the theme "ants" became part of the planning for the upcoming meetings.

It is highlighted that the Pedagogical Content Knowledge (PCK) demonstrated by the teacher played a predominant role in the development of her lesson plans, in identifying the knowledge required for learning, both to reinforce and expand it, and in combining strategies that facilitated a co-construction of knowledge with the children, taking into account their interests, motivations, and needs (SHULMAN, 2014; MIZUKAMI, 2004).

Below, we present one of the project outlines for "Ants", developed by Teacher "X":

Table 1 – Ants Project Projeto

SKILLS	PROPOSALS
» *Understanding the routine of an anthill and its social organization.* » *Being interested in research activities to learn about issues concerning the physical world.*	» *Discussing the work of the ants they observed in the last few days, leading the dialogue with the following questions:* • *How do they cut the leaves?* • *Where do they take the collected leaves?* • *What do they do with the collected leaves?* » *Showing a video that illustrates the organization of the ants.*

Source: Teacher X's portfolio, 2019.

The Pedagogical Content Knowledge (PCK), tasked with selecting and summoning elements from the knowledge base to address a problematic situation perceived through the teacher's reflection-in-action, called upon the first element of the pedagogical reasoning and action process: comprehension (SHULMAN, 1987).

With comprehension activated, the teacher perceived the strength of the children's interest in the anthill, and based on her expertise of the topic, she sought strategies to explore it, thus constituting the transformation element (SHULMAN, 1987).

Through observational drawings of the ants' path to the anthill, their leaf-cutting and carrying behavior, the children demonstrated their spatial skills, understanding of the ants' body positions, body parts, and directions. They also created maps to mark the ants' routes to the anthills, including measurements and

written names of places (with the teacher's intervention as a scribe), as well as engaging in counting. They conducted group research to test hypotheses, engage in dialogue, and reflect on their theories and discoveries during their investigations. They also handled various materials to find answers to their questions, such as using microscopes and magnifying glasses.

Through daily observation of the ants' work, the children developed other learning experiences, as expressed below:

> "The ants go to the anthill that is underground. [...] Sometimes there's an anthill that looks like a tower, but the one near the tree is not like that" (Child "X"). [...] "The ants only eat those leaves in the winter" (Child "X"). "They all live together because they are friends" (Child "X"). [...] "There's a queen in the anthill. She sits on the throne" (Child "X") (Source: Portfolio of the Principal, 2019).

These strategies that enhanced the construction of learning in the children were imbued with teaching situations, another essential element of pedagogical reasoning and action (SHULMAN, 1987; MIZUKAMI, 2004; ALMEIDA et al., 2019).

The children's expressions were important materials and indicators, both for the evaluation process (SHULMAN, 1987) and for advancing or revisiting the knowledge to be learned. This approach is not inherent in teaching; it is learned and developed, requiring a solid, open, and broad knowledge base (LOUGHRAN; KEAST; COOPER, 2016). It reinforces the statement that "those who can, do, and those who understand, teach" (DARLING-HAMMOND; BRANSFORD, 2019, Foreword, xxiii).

We noticed that the teacher constantly conducted evaluations, both of the knowledge acquired by the children and of her pedagogical approach. Many times, the evaluation arose from observations, but also from good questions that encouraged the little ones to seek answers and showed the teacher the level of the group's knowledge about the topic:

> The ants are not there today because it's cold (Child "X"). Why don't they work in the cold? (Teacher) Because the cold takes them away (Child "X"). The wind takes them along with the plants they are carrying (Child "X"). There are a lot of leaves inside the anthill (Child "X").

The constant evaluation of her work performance and the group's learning provided the teacher with the opportunity to guide and redirect the path of her proposals and the level of interventions, as expressed in her speech:

> The video I showed about the ants was important for them to broaden their knowledge about the life and organization inside an anthill. For instance, knowing what ants do with the leaves they collect and take to the anthill and what role the queen plays.

The new understanding about the theme of ants was shared by the teacher and the children, as the teacher asked questions that prompted the children to create and test hypotheses; raise and solve problems; engage in dialogues with the class and the teacher. In this way, old knowledge received new information, causing the old knowledge base to be disassembled and reorganized, leading to a new understanding of the studied theme (MIZUKAMI, 2004; ALMEIDA et al., 2019).

The reflection, in this project, arose in parallel with assessment, as the teacher diagnosed and analyzed the situation, while also thinking about it, organizing and reorganizing her practice through lesson plans (MARCON; GRAÇA; NASCIMENTO, 2011; SHÖN, 1997).

We noticed that, without the need to explicitly mention the presence of the Fields of Experience in the scope of the lesson plan (Self, Other, and Us; Body, Gesture, and Movement; Traits, Sounds, Colors, and Shapes; Listening, Speaking, Thinking, and Imagining; and Spaces, Times, Quantities, Relationships, and Transformations), they acted simultaneously, demonstrating a harmonious and integrated approach in which the child was regarded as a whole being and a protagonist in their actions.

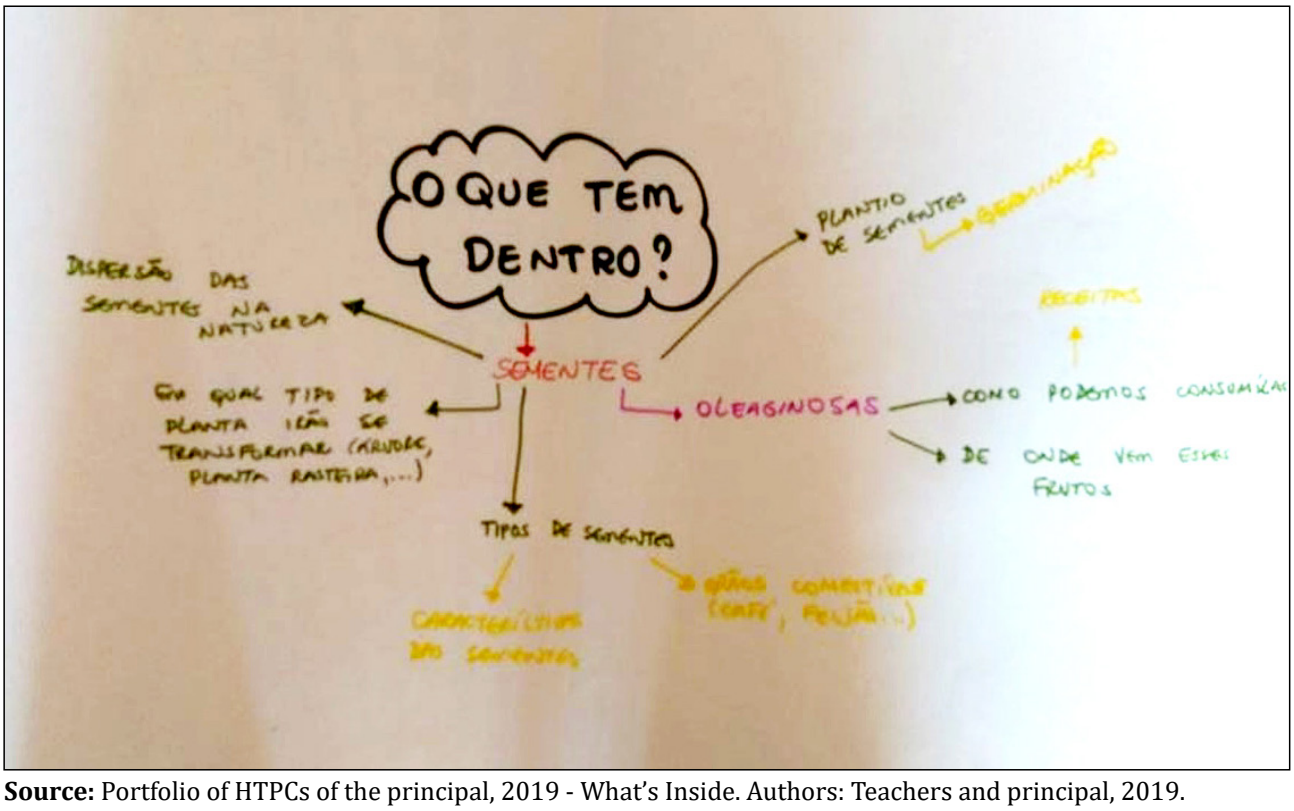
In such practices, interactions among children, the teacher, materials, space, and knowl-

edge emerged; the construction of perceptions; the identification and constitution of children as individual, social, and cultural beings with a voice, while actively participating in sharing thoughts, engaging in creative productions, and gaining access to numbers and writing. All these actions carried out by the teacher were permeated by the awareness that the children were immersed in spaces and times of different dimensions, in a world constituted by natural and sociocultural phenomena, and that they needed to grasp this knowledge (BRASIL, 2017).

After the presentation of the "Ants" project by Teacher "X", the teachers were encouraged to rethink a project that was already underway or would be executed based on Helm and Beneke's (2005) ideas of a potential network of topics for working with the children.

From this moment, the project "What's Inside Things" emerged, which was co-constructed by the participating teachers and the school administration, and became Teacher Y's classroom project.

Image 2 - Project – What's Inside Things



Source: Portfolio of HTPCs of the principal, 2019 - What's Inside. Authors: Teachers and principal, 2019.

Due to the words in highlight not being legible for reading, they have been transcribed below.

1. Below seed planting – germination;
2. Above how we can consume – recipes;
3. Below seed types – on the right arrow - edible grains (coffee, beans...), on the left arrow – seed characteristics.

The HTPCs of the investigative community as reinforcement for the work of teacher "Y" - project "What's Inside Things".

Teacher "Y", with her 2nd phase and Preschool class containing 30 children aged five years old, started from the initial idea of the project "What's Inside Things," conceived during the HTPC on May 20, 2019, entitled - "Why Work with Projects in Early Childhood Education?" Subsequently, guided by the perception of her students' interest and curiosity, they expressed a desire to know what was in-

side things whenever they encountered fruits, flowers, or other elements of nature while exploring the school yards and parks. They would open them and ask what was inside or how the inner structure would be.

Thus, the teacher explains how the project arises in the classroom:

> Faced with this observation and listening, she brought to the group of children the proposal to carry out research and investigation on what is inside some fruits, seeds, flowers, and other natural elements that children usually find in our outdoor spaces, since we have the privilege of being part of a school surrounded by many plants, birds, and small animals such as butterflies, beetles, ants, bees, caterpillars, among others, elements that arouse children's curiosity and imagination (Teacher "Y", selection from her portfolio, 2019).

This presupposes, as proposed by Darling-Hammond et al. (2019), that the teacher, at this moment, needed to organize her practice based on conscious decisions about the selection of content and learning strategies, considering how, when, and what to teach, in light of what she wanted to achieve with her students' learning.

With this realization, the teacher, driven by her strong, not fixed, and broad base of knowledge for teaching (LOUGHRAN; KEAST; COOPER, 2016) and by reflection-in-action (LOUGHRAN; KEAST; COOPER, 2016; SHÖN, 1997; MARCON; GRAÇA; NASCIMENTO, 2011), initiated the process of mobilizing her Pedagogical Content Knowledge (PCK). This involved making the subject matter accessible and comprehensible to the children in a useful manner, considering their needs, interests, and pedagogical intention (BRANSFORD et al., 2019; SHULMAN, 2014, 2015; MIZUKAMI, 2004).

To address this issue, the Pedagogical Content Knowledge (PCK), resulted from careful observation and driven by actions and reflection-in-action, organized the information and made it available for decision-making, triggering the teacher's process of pedagogical reasoning and action. Initially, this process relied on her understanding to assess whether the subject matter was strong enough and could generate networks of knowledge (DEWEY, 1976; MARCON; GRAÇA; NASCIMENTO, 2011; ALMEIDA et al., 2019; HELM; BENEKE, 2005).

In this way, the teacher realized that, given the children's interest and curiosity in knowing what was inside things and their structure, it would be possible to support and expand their experiences and theories with new knowledge. Thus, the list of Learning to construct with the children emerged: investigate what is inside things; explore and learn about different natural elements; learn about different fruits and their seeds; learn about seed dispersal in nature; catalog seeds and fruits from our flora; conduct research on elements found by the children.

At this moment, another subprocess of the process of pedagogical reasoning and action was activated, instruction, which empowered teacher "Y" to see the possibility of constructing the following knowledge: investigate what is inside things; research different natural elements, learn to identify fruits and their seeds; learn about seed dispersal in nature; catalog seeds and fruits from our flora and know how to conduct research to find answers.

With the question of how to make this knowledge accessible to the children, transformation came into play, proposing achievable situations such as: bringing and collecting elements from nature with the group of children, for example: chestnuts, berries, pods, fruits, and others; assembling a basket with the collected elements and presenting it to the children; talking with the group about the collected seeds and asking them: What types of plants did they come from? What types of plants will they become? Were the seeds found on the ground? Set up a display with different types of seeds in the classroom for the children's research and observation of what a seed looks like inside.

To learn about the knowledge of seed dispersal in nature and to know the dandelion

seed, transformation operated with the following strategies: bringing dandelion flowers and seeds so that the children would know where the seed would be; taking a walk with the children through the outdoor spaces of the school to locate the dandelion plant in the lawns; scattering dandelion seeds on the school lawns together with the children; making observation drawings of the dandelion; creating a panel with records of the research and discoveries made by the children; observing the dandelion flower through a magnifying glass.

To suggest new proposals, advance, or revisit content, the teacher relied on two elements of pedagogical reasoning and action, which once again, went hand in hand - assessment and reflection (LOUGHRAN; KEAST; COOPER, 2016), here are some quotations:

> I brought some tamarind pods to the group and asked the children if they knew what it was; Do you think there is something inside this shell? The girls' curiosity grows, and then I decide to ask: Do you think there is something inside this shell? (Teacher); Faced with the children's curiosity about what is inside the pods, I proposed that they take a walk through the outdoor spaces of the school to collect elements from nature [...]. (Teacher "Y", selection from the Portfolio, 2019).

We understand that the teacher's assessment occurred during instruction, with relevant questions, while the children were investigating in search of answers, informing her about their understanding of the topic and the need for expansion or review (MIZUKAMI, 2004).

We identified that reflection-in-action and reflection on reflection-in-action (LOUGHRAN; KEAST; COOPER, 2016; SHÖN, 1997; MARCON; GRAÇA; NASCIMENTO, 2011) were essential tools for the teacher to analyze each situation, diagnose, relive emotions, and reorganize or propose new approaches.

The new understanding, according to Mizukami (2004), Almeida et al. (2019), and Marcon, Graça, and Nascimento (2011), was marked by the deconstruction and reconstruction of knowledge about the topic under discussion. It emerged from the fact that the children became capable of behaving like researchers, investigating what existed inside the elements; relying on their theories, observation, and testing of results for certification; creating drawings, graphic schemes, and writing according to their abilities (assisted by the teacher). In this process of unveiling a topic, the teacher and her class achieved a new understanding of the subject matter.

Building a pedagogical practice within this perspective became a reality because the teacher was supported by teacher professional development centered in the school environment, recognizing her as a unique person and author of her pedagogical practice (OLIVEIRA-FORMOSINHO, 2009; MARCELO, 2009; COHEN; BALL, 1999, p. 6, cited in DARLING-HAMMOND). Furthermore, she was embedded in an investigative community that encouraged and valued her to theorize by investigating her own practices, connecting local children's knowledge with the school's broader context, and participating in the construction of a community culture with shared discourses and unique stories (FIORENTINI; CRECCI, 2016; COCHRAN-SMITH; LYTLE, 2015).

It is worth noting that the supports for HTPC training in the school, consisting of studies and conceptual maps (GRILLO; LIMA, 2008) provided by a competent, committed, and innovative school administrator (LÜCK, 2000; AMORIM, 2017), combined with the teacher's research-oriented profile and pedagogical intent, were essential for the emergence of original practices capable of materializing the National Common Curricular Base (BNCC, Portuguese abbreviation), and going beyond the prescribed knowledge in the Fields of Experiences (Self, the other, and us; Body, gestures, and movements; Traits, sounds, colors, and shapes; Listening, speaking, thinking, and imagination; and Spaces, times, quantities, and transformations). This led to the creation of meaningful and relevant lesson plans connected to the children's interests.

Below, we present how the teacher's project work aligns with the National Common Curricular Base (BNCC, Portuguese abbreviation) for Early Childhood Education.

It is noteworthy that bringing fruits not commonly part of the children's daily life for them to discover their characteristics (papaya, cocoa, and cashew) allowed them to act in an articulated manner across the five Fields of Experience listed below:

- The self, the other, and us: as they came into contact with and experienced fruits from different contexts and had the opportunity to take care of their health by expanding their repertoire of healthy foods.
- Body, gestures, and movements: They engaged their senses as they observed the fruits, touched them, picked some (stretching, bending, jumping), smelled them, ventured to taste them, and embodied the concepts before naming them (FOCHI, 2021).
- Traits, sounds, colors, and shapes: They appreciated the fruits, their shapes, colors, textures, gestures to hold them, and capture the seeds inside the fruit.
- Listening, speaking, thinking, and imagination: Through sharing their experiences with each other, listening to the teacher adding information about their experiences, and accessing the construction of written language through the project's panel created in the classroom.
- Spaces, times, quantities, and transformations: The group acquired knowledge about plants: germination, growth, flowering, and fruit production, while dealing with natural phenomena such as the sun, rain, etc.

By organizing appreciation circles for the children to share their research with their friends, the Fields of Experience were accessed simultaneously as follows:

- The Self, the Other, and Us: Children, while explaining and constructing their perceptions and questioning, differentiated themselves from others and identified themselves as social beings.
- Body, Gestures, and Movements: Through gestures, movements, and establishing relationships with their peers, they communicated emotions.
- Traces, Sounds, Colors, and Shapes: When the children had the opportunity to experience two very important elements of culture full of symbolism and ritual, which is sitting in a circle to listen, speak, and appreciate each other's thoughts.
- Listening, Speaking, Thinking, and Imagination: By practicing active listening and interpreting each other's speech, sharing ideas with logical reasoning, and expressing theories, hypotheses, and research descriptions clearly.
- Spaces, Times, Quantities, Relations, and Transformations: When presenting their research, the children needed to contextualize where it occurred, in what time, dealing with knowledge of the physical world – the plants and the transformations they underwent, the size of fruits and seeds, and the quantity or absence of seeds.

Some final considerations

In this article, we explored into the quest for understanding how Early Childhood Education teachers from an investigative community became capable of translating the National Common Curricular Base for Early Childhood Education into pedagogical practices.

We understand that the first favorable point for the construction of practices achievable for children and that enabled the translation of a mandatory document of national character like the BNCC was the fact that the school was an investigative community, as in this place, teachers displayed an investigative stance, demonstrating a constant search for knowledge,

taking responsibility for their own professional development and that of their classroom, and being constantly alert to discover what the children knew about a certain subject and what they needed to expand their understanding.

The investigative community empowered the teachers to build local memory, commitment to the school community, the connection between theory and practice, and practice and theory. They developed critical thinking to ask and answer their questions and resisted accepting ready-made, closed, and disconnected curricula. They also recognized the relationship between local and universal knowledge. However, they possessed the ability to construct practices related to the children's context, which allowed them to relate them to the historical, cultural, and artistic knowledge built and valued by humanity.

We noticed that the second point that consolidated the translation of the BNCC into fruitful work for the teachers and facilitated the children's learning was the principal being a competent, researcher, and committed manager to her teachers. This fact was demonstrated by the model of professional development for the teachers, carried out at the school. By advocating for this type of training, the principal created and supported studies based on respecting the teachers as unique individuals, complete with their life histories, and involved in an ongoing process of development throughout their lives. As the teachers continued to grow and develop, the entire school environment benefitted from this growth.

We found that as a third element, the teachers were skilled professionals, with extensive experience and possessing a strong and flexible knowledge base for teaching. Therefore, they were well-equipped to carry out projects born from the children's interests. Guided by their teaching intentions, they expanded and enriched the classroom's learning experiences. Consequently, the knowledge base for teaching granted them the expertise to approach the same subject in various ways, considering the different times, styles, and rhythms of children's learning, drawing on the students' life stories and prior knowledge.

Therefore, for us, this study confirmed Shulman's maxim that "those who can, do, and those who understand, teach" (DARLING-HAMMOND; BRANSFORD, 2019, Foreword, xxiii).

REFERENCES

ALMEIDA, Patrícia Cristina Albieri; DAVIS, Claudia Leme Ferreira; CALIL, Ana Maria Gimenes Corrêa; VILALVA, Adriana Mallman. Categorias Teóricas de Shulman: revisão integrativa no campo da formação docente. **Cadernos de Pesquisa**, São Paulo, v. 49, n. 174, p. 130-150, out/dez. 2019. Disponível em: https://doi.org/10.1590/198053146654. Acesso em: 20 out. 2021.

AMORIM, A. Gestor escolar inovador: educação da contemporaneidade. Revista Lusófona de Educação. Universidade Lusófona de Humanidades e Tecnologias. v. 2, n. 35, p. 67-82, 2 jun. 2017. Disponível em: http://dx.doi.org/10.24140/issn.1645-7250.rle35.04. Acesso em: 18 set. 2020.

BERRY, Amanda.; DEPAEPE, Fien.; DRIEL, Jan Van Driel. Pedagogical Content Knowledge in Teacher Education. *In*: LOUGHRAN, John; HAMILTON, Mary Lynn. **International Handbook of Teacher Education**. Springer Science+Business Media: Singapore, 2016, v.1, cap. 9, p. 347-385.

BOLÍVAR, Antônio. A escola como organização que aprende. *In*: CANÁRIO, Rui (Org). **Formação e situações de trabalho**. Porto: Porto Editora, 1997, v. 1, cap. 5, p.79-100.

BRASIL. **Base Nacional Comum Curricular:** educação é a base. (Versão dezembro 2017). Brasília, DF: MEC, 2017. Disponível em: http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=79601-anexo-texto-bncc-reexportado-pdf-2&category_slug=dezembro-2017-pdf&Itemid=30192>. Acesso em: 04 mar. 2020.

BRASIL. **Resolução nº 5, de 17 de dezembro de 2009**. Fixa as Diretrizes Curriculares Nacionais para a Educação. Ministério da Educação Conselho Nacional de Educação Câmara de Educação Básica. Brasília, 2009. Disponível em: http://www.seduc.ro.gov.br/portal/legislacao/RESCNE005_2009.pdf. Acesso em: 12 abr. 2020.

BRONFENBRENNER, Urie. **A ecologia do desenvolvimento humano:** experimentos naturais e planejados. Porto Alegre: Artmed, 1996. 272p.

COCHRAN-SMITH, Marilyn; LYTLE, Susan Lythe. Relationships of Knowledge and practice: teacher learning in communities. **Review of Research in Education**, v. 24, n.1, p. 249-305, 02 nov. 1999. Disponível em: https://www.academia.edu/4746288/Chapter_8_Relationships_of_Knowledge_and_Practice_Teacher_Learning_in_Communities. Acesso em: 7 mar. 2020.

CORTEZ, Clélia. O que um bom projeto para a Educação Infantil precisa ter*?* Nova Escola, São Paulo. 01 ago. 2013. Disponível em: https://novaescola.org.br/conteudo/50/o-que-um-bom-projeto-para-educacao-infantil-deve-ter. Acesso em: 7 de mar. 2020.

DARLING-HAMMOND, Linda.; BRANSFORD, John. **Preparando os professores para um mundo em transformação:** o que devem aprender e estar aptos a fazer. Tradução de Linda Darling-hammond; John Bransford; Cristina Fumagalli Mantovani. Revisão técnica de Luciana Vellinho Corso. Porto Alegre: Penso, 2019, prefácio xxiii; p.143-169.

DEWEY, Jowey. **Experiência e educação** (1859-1952). Tradução de Anísio Teixeira. 2 ed. São Paulo: Ed. Nacional, 1976, 152p.

FIORENTINI, Dario.; CRECCI, Vanessa Moreira Crecci. Interlocuções com Marilyn Cochran-Smith sobre aprendizagem e pesquisa do professor em comunidades investigativas. Revista Brasileira de Educação, [S.L.], v. 21, n. 65, p. 505-524, jun. 2016. Disponível em: http://dx.doi.org/10.1590/s1413-24782016216526. Acesso em: 12 mar. 2020.

FOCHI, Sérgio Fochi; COUTINHO, Angela Maria Scalabrin. A escuta como gesto de acolhimento. Palestra proferida no curso o acolhimento, as relações e o despertar para a reinvenção da Escola da Infância pelo Vincular cursos, 2021. Disponível em: https://vincularcursos.myedools.com/enrollments/5633164/courses/46273/course_contents/1746327. Acesso em: 19 mar. 2021.

FOCHI, Paulo Sergio. **Afinal, o que os bebês fazem no berçário?** Comunicação, autonomia e saber-fazer de bebês em um contexto de vida coletiva. Porto Alegre: Penso Editora, 2015. 159p.

GOODSON, Ivor. Dar voz ao professor: Histórias de vida dos professores e o seu desenvolvimento profissional. *In*: NÓVOA, Ant**ônio (Org). Vidas de professores**. Portugal: Porto Editora, 2013. v. 2, cap. 4, p. 63-75.

GRIGOLI, Josefa; LIMA, Claudia M.; TEIXEIRA, Leny R.; VASCONCELLOS, Mônica. A escola como lócus de formação docente: uma gestão bem-sucedida. Cadernos de Pesquisa**,** [S.L.], v. 40, n. 139, p. 237-256, abr. 2010. Disponível em: http://dx.doi.org/10.1590/s0100-15742010000100012. Acesso em: 09 maio 2020.

GRILLO, Marlene Correro; LIMA, Valderez Maria de Rosário. Mapa conceitual. *In*: FREITAS, Ana Lúcia Souza de. **A gestão da aula universitária na PUCRS**. Porto alegre: EDIPUCRS, 2008. v. 1, cap. 2, p. 145-153.

HELM, Judy Harris; BENEKE, Sallee. *et al*. **O poder dos projetos:** novas estratégias e soluções para a Educação Infantil. Tradução Vinícius Figueira. Porto Alegre: Artmed, 2005. 176p.

LIMA, Maria do Socorro Lucema; GOMES, Malrianeide Oliveira. Redimensionamento o papel dos profissionais da educação: algumas considerações. *In*: PIMENTA, Selma Garrido; GHEDIN, Evandro. **Professor reflexivo no Brasil: gênese e crítica de um conceito.** São Paulo: Cortez, 2002. v.1, cap. 5, p. 163-186.

LOUGHRAN, John; KEAST, Stephen; COOPER, Rebecca Cooperca. Pedagogical Reasoning in teaching education. **International Handbook of Teacher Education**. v. 1. Singapore: Springer Science+Business Media, 2016, 582p.

LÜCK, Heloisa; Perspectivas da gestão escolar e implicações quanto à formação de seus gestores*.* **Em aberto***,* Brasília*.* v. 17, n. 72, p. 11-33, fev./jun. 2000. Disponível em: https://educacao.mppr.mp.br/arquivos/File/gestao_democratica/kit5/perspectivas_da_gestao_escolar_e_implicacoes.pdf. Acesso em: 10 maio 2020.

MARCELO GARCÍA, Carlos. **Formação de professores:** para uma mudança educativa. Portugal: Porto Editora, 1999. 273p.

MARCELO GARCIA, Carlos. Desenvolvimento Profissional Docente*:* passado e futuro. Sísifo. **Revista de Ciências da Educação**. Lisboa, n. 8, p. 7-22, jan./abr. 2009.

MARCON, Daniel; GRAÇA, Amândio Braga dos Santos; NASCIMENTO, Juarez Vieira do. Busca de paralelismo entre conhecimento pedagógico do conteúdo e processo de raciocínio e ação pedagógica. Educação em Revista, [S.L.], v. 27, n. 1, p. 261-294, abr. 2011. Disponível em: http://dx.doi.org/10.1590/s0102-46982011000100012. Acesso

em: 19 ago. 2019.

MIZUKAMI, Maria da Graça Nicole. Aprendizagem da docência*:* algumas contribuições de L. S. Shulman. **Educação**, Santa Maria, v. 29, n. 2, p. 33-39, jul./dez. 2004.

MOSS, Peter. Reconceitualizando a infância: crianças, instituições e profissionais. *In*: MACHADO, Ana Lúcia de Machado (Org). **Encontros e desencontros em Educação Infantil.** 4. ed. São Paulo: Cortez, 2011. v.1, cap.3, p. 235-247.

OLIVEIRA-FORMOSINHO, Júlia. Desenvolvimento profissional dos professores. In: FORMOSINHO, João (cord). **Formação de professores:** aprendizagem profissional e acção docente, Portugal: Porto Editora, 2009. 399p.

SHULMAN, Lee. Knowledge and Teaching: foundations of the new reform. **Havard Educational Review**, Washington, v. 57, n. 1, p. 1-27, 1987. Disponível em: https://people.ucsc.edu/~ktellez/shulman.pdf. Acesso em: 05 jan. 2020.

SHULMAN, Lee. Conhecimento e ensino: fundamentos para a nova reforma. **Cadernos Cenpec, São Paulo. v. 4, n. 2, p. 196-229, dez. 2014. Disponível em:** https://www2.uepg.br//programa-des/wp-content/uploads/sites/32/2019/08/SHULMANN-sobre-ENSINO.pdf. Acesso em: 10 nov. 2019.

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