





THE ORGANIZATION OF TEACHING PROMOTING THE DEVELOPMENT OF THEORETICAL THINKING: POSSIBILITIES FOR ELEMENTARY SCHOOL STUDENTS IN THE EARLY GRADES¹

Rosane Aparecida Brandalise Corrêa²  

Janaina Damasco Umbelino³  

Abstract

This study investigates how the organization of teaching contributes to the development of theoretical thinking in elementary school students, based on Cultural-Historical Theory and Activity Theory. The objective is to analyze how planned pedagogical practices promote the appropriation of scientific concepts, establishing an effective relationship between teaching, learning, and human development. Drawing on Vygotsky, Leontiev, and Moura, the study highlights the Teaching Guiding Activity (TGA) as a theoretical and methodological foundation and the Triggering Learning Situations (TLS) as a central component for organizing teaching in a mediated and meaningful way. The analysis of academic works, such as Nascimento's dissertation (2010) and Sforni's thesis (2003), evidenced that intentional pedagogical practices allow students to overcome empirical knowledge, reaching higher levels of abstraction and generalization. The results show that the study activity, mediated by the interaction between teacher and student, is essential for cognitive development. Practices that integrate theory and practice favor the transformative appropriation of scientific concepts. It is concluded that the organization of teaching, grounded in the Historical-Cultural Theory, Activity Theory, and TGA, enhances students' ability to understand concepts and apply them in different contexts, promoting integral and critical development.

Keywords: Teaching guiding activity; Teaching organization; Theoretical thinking; Cultural-Historical Theory.

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² Master's degree in Education from the State University of Western Paraná - Francisco Beltrão Campus (UNIOESTE). Specialist in Specialized Educational Services from the State University of Maringá (UEM). Specialist in Fundamentals of Education from the State University of Western Paraná (UNIOESTE). Specialist in Educational Law, rosanebrandalisecorrea@gmail.com

³ PhD in Education, State University of Western Paraná (UNIOESTE), she teaches in the Pedagogy course at the Cascavel Campus and in the Postgraduate Program in Education (PPGEFB). She is the leader of the Study and Research Group on Teaching, Learning, and Historical-Cultural Theory (GEPEATH) and a member of the Study and Research Group on Pedagogical Activity (GEPAPe); janadumbelino@gmail.com

A ORGANIZAÇÃO DO ENSINO PROMOTORA DO DESENVOLVIMENTO DO PENSAMENTO TEÓRICO: POSSIBILIDADES PARA ESTUDANTES DOS ANOS INICIAIS DO ENSINO FUNDAMENTAL

Resumo: Este estudo investiga como a organização do ensino contribui para o desenvolvimento do pensamento teórico em estudantes dos anos iniciais do Ensino Fundamental, pautando-se na Teoria Histórico-Cultural e na Teoria da Atividade. O objetivo é analisar como as práticas pedagógicas planejadas promovem a apropriação de conceitos científicos, estabelecendo uma relação efetiva entre o ensino, aprendizagem e desenvolvimento humano. Com base em Vigotski, Leontiev e Moura, o estudo destaca a Atividade Orientadora de Ensino (AOE) como base teórico e metodológica e as Situações Desencadeadoras de Aprendizagem (SDAs) como componente central para organizar o ensino de forma mediada e significativa. A análise de trabalhos acadêmicos, como a dissertação de Nascimento (2010) e a tese de Sforzi (2003), evidenciaram que as práticas pedagógicas intencionais permitem aos estudantes superar o conhecimento empírico, alcançando níveis mais elevados de abstração e generalização. Os resultados mostram que a atividade de estudo, mediada pela interação entre o professor e o estudante, é essencial para o desenvolvimento cognitivo. Práticas que integram teoria e prática favorecem a apropriação transformadora de conceitos científicos. Conclui-se que a organização do ensino, fundamentada na Teoria Histórico-Cultural, Teoria da Atividade e AOE ampliam a capacidade dos estudantes de compreender os conceitos e aplicá-los em diferentes contextos, promovendo o desenvolvimento integral e crítico.

Palavras-chave: Atividade orientadora de ensino; Organização do ensino; Pensamento teórico; Teoria Histórico-Cultural.

LA ORGANIZACIÓN DE LA ENSEÑANZA QUE PROMUEVE EL DESARROLLO DEL PENSAMIENTO TEÓRICO: POSIBILIDADES PARA ESTUDIANTES DE LOS PRIMEROS AÑOS DE LA EDUCACIÓN PRIMARIA

Resumen: Este estudio investiga cómo la organización de la enseñanza contribuye al desarrollo del pensamiento teórico en estudiantes de los primeros años de la educación primaria, basándose en la Teoría Histórico-Cultural y la Teoría de la Actividad. El objetivo es analizar cómo las prácticas pedagógicas planificadas promueven la apropiación de conceptos científicos, estableciendo una relación efectiva entre enseñanza, aprendizaje y desarrollo humano. Basado en Vigotsky, Leontiev y Moura, el estudio destaca la Actividad Orientadora de Enseñanza (AOE) como base teórica y metodológica, y las Situaciones Desencadenantes de Aprendizaje (SDA) como componente central para organizar la enseñanza de forma mediada y significativa. El análisis de trabajos académicos, como la disertación de Nascimento (2010) y la tesis de Sforzi (2003), muestra que las prácticas pedagógicas intencionales permiten a los estudiantes superar el conocimiento empírico, alcanzando niveles más altos de abstracción y generalización. Los resultados demuestran que la Actividad de Estudio, mediada por la interacción entre profesor y estudiante, es esencial para el desarrollo cognitivo. Se concluye que la organización de la enseñanza, fundamentada en la Teoría Histórico-Cultural, la Teoría de la Actividad y la Actividad Orientadora de Enseñanza, amplía la capacidad de los estudiantes para comprender y aplicar conceptos en diversos contextos, promoviendo un desarrollo integral y crítico.

Palabras clave: Actividad orientadora de enseñanza; Organización de la enseñanza; Pensamiento teórico; Teoría Histórico-Cultural.

Introduction

Contemporary education faces significant challenges in the student learning process, especially in the early years of elementary school. Data from large-scale assessments, such as the Basic Education Assessment System (SAEB)⁴, have revealed alarming gaps in the appropriation of fundamental concepts, such as reading, writing, and mathematics, with many students completing this stage without fully developing these essential processes.

This scenario highlights the need to rethink and reorganize teaching to ensure meaningful learning and holistic human development. The organization of teaching plays an important role in this context, not merely as a means of transmitting knowledge but as an intentional and planned process that enables the conscious appropriation of historically produced knowledge.

The school, as a privileged space for cultural mediation, assumes a unique function in the formation of the individual, with the teacher taking on the role of mediator in this process.

This article aims to present the discussions from a master's research study that sought to understand how the organization of teaching can contribute to the development of theoretical thinking in students in the early years of elementary school. To analyze this question, the investigation was based on the assumptions of the Cultural-Historical Theory, the Activity Theory, and the Orienting Teaching Activity (OTA) regarding the educational process. The research was also supported by the theoretical and methodological contributions of the Pedagogical Activity Study and Research Group (GEPAPe), whose academic productions offer a solid foundation for understanding the relationship between the organization of teaching and the development of theoretical thinking.

This research is justified by the need to propose pedagogical alternatives to overcome the challenges of basic education, especially concerning the promotion of an intentional, planned, and systematized teaching practice.

The investigation contributes theoretical and practical subsidies that can assist teachers and school managers in transforming the teaching and learning processes, aiming to ensure students' access to scientific and cultural knowledge.

⁴ SAEB is a comprehensive external assessment aimed at measuring the quality of basic education in Brazil. Conducted by the Anísio Teixeira National Institute for Educational Studies and Research (INEP), SAEB consists of tests and questionnaires that analyze students' learning levels (Brazil, 2023).

The main objective of the research was to analyze how the organization of teaching, based on the foundations of Cultural-Historical Theory, can contribute to the development of theoretical thinking in students in the early years of elementary school. Specifically, it sought to understand the relationship between teaching, learning, and human development within the scope of OTA; to deepen the study of Activity Theory and its application in the study activity; to analyze how study activity can stimulate theoretical thinking; and to evaluate the contributions of GEPAPe to the organization of teaching and its articulation with pedagogical practice.

With this approach, it is expected to offer theoretical and practical pathways that can contribute to quality education, focused on the holistic development of students and the formation of critical and reflective individuals.

Theoretical Foundations of the Research

According to Leontiev (1978), the interaction between human activity and consciousness is based on Marxist principles. The author defined activity as the fundamental element of human experience, playing an important role in orienting the individual in relation to the world around them.

Activity is essential for individuals' relationships with their environment and with others, aiming at the satisfaction of needs and the holistic development of the human being.

To address the investigated questions, Activity Theory is adopted as a framework because it allows for an understanding of human psychic development from a cultural-historical perspective, making it relevant for the analysis of teaching and learning processes.

According to Leontiev (2017), human activity is motivated by needs that are directed toward specific, concrete, or conceptual objects and is completed when the need is satisfied. This process involves objectives aligned with general motives, while concrete conditions determine the necessary operations for actions.

Within the scope of education, Cultural-Historical Theory conceives of learning as a process that occurs through the mediation of social relationships and the use of symbolic instruments, such as Language, Art, and Science, which need to be transmitted and assimilated by students. Umbelino (2021) described pedagogical activity as the unity between student learning and teacher teaching, while Bernardes (2012) highlighted its collective and

transformative nature, indicating that pedagogical practice not only transmits knowledge but also promotes the humanity of individuals.

Educational practice requires conscious actions to promote the development of theoretical thinking in students, with the appropriation of knowledge being its main motive. In this regard, the research of the Pedagogical Activity Study and Research Group (GEPAPe) addresses how organized pedagogical activity can foster theoretical thinking, starting from the relationship between learning and development.

Moura (2005, p. 4) corroborated this, stating that:

[...] the research and studies developed at GEPAPe have as their starting point human activity related to the learning movement of teachers and students in educational relationships, as well as the spaces in which pedagogical activities are constituted.

GEPAPe's purpose is to overcome inequalities and promote humanization, positioning human activity as a central element of its investigations, particularly in the context of educational interactions between teachers and students. Its research focuses on understanding the learning and development processes that occur in pedagogical activity.

By adopting human activity as the basis of its approach, the group seeks to analyze and improve pedagogical practices, considering the perspectives of both teachers and students. And, for Araújo and Moraes (2017, p. 52):

[...] Pedagogical Activity is understood as systematic and intentional educational work with generic human objectifications in different spheres of life, contributing to their appropriation by new generations, and is presented as a determinant for the formation of personality.

In this dynamic, the teacher organizes the teaching, while the students, with their experiences and needs, become the central subjects of the learning process. The processes of teaching and learning require essential elements to be conducted effectively and comprehensively.

Among these elements, the role of the teacher stands out, whose main responsibility is to plan and direct the development of teaching. In parallel, students, as the subjects of learning, bring their experiences, needs, and motivations, which constitute the starting point for the appropriation of knowledge. A fundamental element is the content to be taught, which plays a central role in enabling the formation of concepts, the execution of generalizations, analyses,

and syntheses, as well as the development of theoretical reasoning and logical thinking, essential aspects that should guide the teaching process.

Therefore, thinking about the constitutive elements of the teaching activity implies understanding that the act of teaching transcends the mere transmission of information, integrating cognitive, social, emotional, and cultural dimensions.

An organization of teaching that aims at human development requires a careful analysis of the content before defining the learning tasks.

Moura (2002, p. 148) stated that "content is the social objective made possible in the classroom," indicating that it is not limited to a set of information but constitutes a materialization of social objectives within the educational context.

Thus, content must be understood as a dynamic element that enables students to appropriate relevant and socially significant knowledge in the educational process.

The act of teaching transcends the simple transmission of content, integrating social, emotional, and cultural dimensions that enrich the educational process.

The Content Analysis, as emphasized by Moura (2002), is essential for transforming social objectives into concrete learning. Sforzi (2017, p. 92) proposed critical questions that help determine the relevance and didactic approach of the content, relating it to the students' experiences and needs.

[...] does this concept allow us to understand and act on which phenomena?
Which previously experienced practices can be explained by the concept to be taught? What questions, problems, or situations can mobilize students' thinking to create in them the motive for studying the concept?

Teaching planning must include clear objectives, appropriate methods, and resources that consider the diversity of students, promoting the mobilization of higher psychic functions and creating motives for learning.

Teaching actions should integrate sociocultural contexts, respecting the individuality of students, and assessment should be continuous, promoting adjustments in teaching to meet learning needs.

By promoting the appropriation of scientific concepts, the teacher plays a fundamental role in students' cognitive development, encouraging advanced skills such as critical analysis, synthesis, reflection, and problem-solving.

In this context, learning activity assumes a central position, offering students practical and dynamic opportunities to build knowledge, improve reasoning, and develop autonomy and critical thinking.

But how does this process occur? How does the student effectively learn? Moura (1996, p. 32) contributed to this reflection by stating that:

[...] the teaching activity, assumed as the core of educational action, seems to us to have two dimensions: the formation of the teacher and the formation of the student. Both have common elements: the problem-situation, a dynamic for a solution, and a possibility for assessment. The student's problem-situation is learning, and the teacher's is teaching. The set of data for the problem's solution is the level of development of the teacher and the student that allows for the articulation of this data.

According to Moura et al. (2010), the teacher's work can be guided by theoretical bases that assist in the organization of teaching. School education, by enabling the appropriation of humanity's accumulated intellectual culture, must be systematic, intentional, and planned, being materialized in pedagogical activity, which brings together both teaching and learning.

However, there is a point of tension between what is planned by the teacher and what is, in fact, learned by the students. The element that connects these two dimensions—teaching and learning—is the Orienting Teaching Activity (OTA), as proposed by Moura (1992).

This activity can be operationalized through strategies such as games, virtual histories of concepts, and emerging situations from daily life, with the objective of creating challenges and promoting learning in a problem-based way.

To fulfill this function, it is necessary to elaborate a Triggering Learning Situation (TLS) that retrieves the origin of the concept to be taught and recreates the human need that motivated its creation, in this case, a virtual history of the concept.

The TLS, according to Moura, is composed of four elements with specific functions in the teaching and learning processes. The *triggering problem* needs to present the genesis of the concept and motivate students by proposing a situation that needs to be solved collectively, with the support and mediation of the teacher. This problem mobilizes the students' motives and needs, encouraging them to seek solutions.

Furthermore, the TLS includes the *organization of space*, structuring a learning environment that favors social interactions and problem-solving. Another essential element is the *synthesis*, which consolidates the understanding of the concept being worked on, allowing for a broader and more complete view of the content. Finally, continuous assessment verifies students' progress in understanding the concept, enabling adjustments in the pedagogical process whenever necessary.

The TLS is integrated into the Teaching Plan prepared by the teacher. For this reason, it is essential that a thorough analysis of the content is carried out prior to defining the learning tasks, with the aim of identifying its essence as a symbolic instrument. In this sense, Sforzi (2017, p. 92) stated:

[...] does this concept allow us to understand and act on which phenomena? Which previously experienced practices can be explained by the concept to be taught? What questions, problems, or situations can mobilize students' thinking to create in them the motive for studying the concept?

The author highlighted that planning must begin with a careful analysis of the learning object, considering the student as an active subject in the process and the affective and cognitive aspects that will be activated. To begin this analysis, the teacher can raise some questions, as Sforzi (2017, p. 92) pointed out:

Regarding the learning object - What is central to this concept? Is it an instrument created by man to understand which aspects of objective reality?
Regarding the learning subject - What is the current and expected level of development for this group of students? What social practices experienced by them can be related to the concept to be taught? And, Regarding the affective-cognitive processes - What questions, problems, or situations can mobilize students' thinking, arousing the motive to study the concept? What situations can be observed, imagined, or perceived by them through this concept?

After this initial analysis, it becomes possible to plan teaching actions more effectively. By understanding the central concept and its essential core, the teacher can organize the content according to the specific needs of the group, even meeting the individual demands of students who require more support. Questioning students' prior knowledge about the topic to be taught makes it possible to relate this knowledge to new content, which can be explored through triggering learning situations that stimulate curiosity and motivation.

Thus, the elaboration of teaching actions that consider the particularities of the content, the specific characteristics of the students, and the cognitive and affective processes involved

constitutes an essential approach to favoring the meaningful appropriation of knowledge, in addition to promoting the development of students' theoretical thinking.

Methodological Pathways of the Research

To answer the research question and achieve the proposed objectives, a theoretical approach based on the principles of Cultural-Historical Theory, Activity Theory, and Orienting Teaching Activity (OTA) was adopted. These foundations provided a comprehension of the psychological and pedagogical bases that support human development and learning within a historical, social, and cultural context.

Furthermore, theses and dissertations from GEPAPe, produced between 1992 and 2022, were analyzed, highlighting the group's trajectory of more than 30 years in the investigation of pedagogical activity. The process included interviews with the founder and researchers who contributed from the earliest years, even before the Group's official registration with the CNPq. Academic productions on the organization of teaching and the development of theoretical thinking in the early years of elementary school were selected, with a focus on research that addresses pedagogical activity and its transformative potential.

As mentioned, an analysis of the scientific production of GEPAPe members was carried out, including dissertations and theses by its members and their advisees, as well as articles and contributions in books and chapters. These productions served as a reference to guide the understanding of how the organization of teaching can favor the development of theoretical thinking in students in the early years of elementary school.

Data collection began with a careful reading of the official GEPAPe website⁵, which gathers relevant information about the group's publications and activities. Next, an analysis of the Lattes Curricula of the researchers linked to GEPAPe was conducted to map the group's scientific production. Subsequently, we researched the Lattes Curricula of each of them to identify the number of theses and dissertations advised by the professor-members of the Group, the published articles, books and/or the organization of books, and book chapters produced by them. The scientific activity identified is listed in table 1, below.

⁵ The website consulted was sites.google.com/usp.br/gepape-usp, containing relevant information about the research group's publications and activities.

Table 1 - Scientific/academic activity of GEPAPe members

GEPAPe researcher	Articles	Books and/or Organization	Book Chapters	Complete works published in conference proceedings	Expanded abstracts and abstracts published in conference proceedings	Work presentations	Guidelines Dissertations Theses
Ademir Damazio	50	03	27	80	74	125	55
Alan Kardec Carvalho Sarmento	06	01	00	03	01	04	00
Algacir José Rigon	15	01	12	17	10	06	-
Amanda Arajs Marques Vaccas	-	-	01				-
Ana Paula Gladcheff Munhoz	08	-	08	13	02	19	01
Anágela Cristina Morete Felix	03	-	04	07	0	07	-
Andrea Maturano Longarezi	72	31	70	93	80	130	26
Anemari Roesler Luersen Vieira Lopes	68	11	41	171	63	49	44
Carolina Picchetti Nascimento	16	01	13	12	12	31	-
Débora Cristina Piotto	30	06	21	21	24	78	06
Dilza Côco	24	29	44	68	63	113	22
Elaine Sampaio Araújo	40	06	33	33	13	40	15
Fabiana Fiorezi de Marco	42	12	20	61	21	51	23

Flávia da Silva Ferreira Asbahr	38	04	43	24	62	61	12
Flávia Dias de Souza	22	11	18	22	13	24	15
Flávio Rodrigo Furlanetto	03	-	06	14	04	26	02
Halana Garcez Borowsky	14	-	15	43	19	01	03
Janaina Damasco Umbelino	12	04	09	28	22	58	11
João Paulo Attie	12	04	13	18	10	10	05
Josélia Euzébio da Rosa	48	01	22	40	76	99	16
Manoel Oriosvaldo de Moura	53	08	30	58	09	147	48
Maria Eliza Mattosinho Bernardes	26	06	32	26	44	40	13
Maria Isabel Batista Serrão	10	02	18	18	30	71	11
Maria Lúcia Panossian	45	10	20	51	11	22	15
Maria Marta da Silva	29	04	22	35	03	18	01
Maria do Carmo de Sousa	47	13	39	102	36	166	40
Marisa da Silva Dias	16	05	19	49	29	50	28
Marta Sueli de Faria Sforni	53	05	33	50	34	135	23
Moisés Alves Fraga	01	-	05	03	03	05	-
Neusa Maria Marques de Souza	23	07	15	88	58	72	13
Neuton Alves de Araújo	16	06	21	12	02	22	14

Priscila de Souza Chisté Leite	33	26	39	45	07	63	14
Ronaldo Campelo da Costa	08	08	04	11	15	40	17
Sandra Aparecida Fraga da Silva	29	30	45	153	71	241	25
Silvia Pereira Gonzaga de Moraes	37	01	21	30	33	26	14
Vanessa Dias Moretti	48	05	25	69	02	45	18
Vidalcir Ortigara	30	03	14	31	14	74	47
Wellington Lima Cedro	48	11	49	98	42	71	28
Total de produções	1075	275	871	1697	1012	2240	625

Source: Systematized by the researcher based on the GEPAPe website and the researchers' Lattes Curriculum Vitae.

Table 1 presents the quantitative data on the academic output of GEPAPe members from 1992 to 2022, encompassing different categories of intellectual contributions. The analyzed data reveal a diverse and significant panorama of activities, with particular emphasis on the considerable number of articles published in scientific journals, totaling 1,075 publications. This is followed by 871 book chapters and 275 works, including authored books and/or edited collections.

In addition, a high number of full papers presented at conferences was observed—1,697 in total—along with 1,012 extended or short abstracts published in conference proceedings. Scientific event presentations are also noteworthy, with 2,240 recorded entries, highlighting the Group's strong presence in academic dissemination and debate forums. Complementing this, there is a significant number of 625 master's theses and doctoral dissertations supervised, demonstrating GEPAPe's commitment to training new researchers and to the consolidation of investigations grounded in solid theoretical foundations.

In the subsequent phase, a survey was conducted of the dissertations and theses produced by GEPAPe members, with the aim of deepening the analysis regarding the defined

objective: the organization of teaching, the development of theoretical thinking, and the early years of elementary education.

After an initial review of the theses and dissertations authored by GEPAPe members, a large volume of academic work was identified, which led to the establishment of criteria for selecting the studies to be analyzed. The first criterion adopted was to select the theses and dissertations supervised by Professor Manoel Oriosvaldo de Moura, with a focus on those that aligned with the object of this study.

Following a preliminary reading, the importance of synthesizing the abstracts of the selected studies was recognized, highlighting the research object and the methodologies employed by each author. This procedure aims to understand how the organization of teaching can contribute to the development of theoretical thinking in students in the early years of elementary education.

Based on this analysis, a table was developed presenting the authors (members of GEPAPe), the titles of their dissertations or theses, and summaries indicating relevant elements related to the objective of the study. Subsequently, selection criteria were established, prioritizing studies that directly addressed the organization of teaching, the development of theoretical thinking, and the early years of elementary education.

Finally, an analytical reading of the theses and dissertations listed in Table 2 was carried out, identifying those that specifically address the process of organizing teaching and its impact on the development of theoretical thinking.

Table 2 - Selection of productions for analysis

Title		Summary and selection criteria
Carolina Nascimento	Picchetti	The dissertation is consistently aligned with the purpose of this research, presenting the development of theoretical thinking through the organization of teaching. The formative experiment conducted by the author was applied by her and other researchers to 4th-grade elementary school students, promoting the development of theoretical thinking, especially through the approach of art, in this specific case, the circus. By investigating theoretical thinking in the field of arts, with an emphasis on aesthetic-artistic thinking, the researcher ensured that students had access to theoretical concepts through the mediation of artistic practice. In her research, the author detailed how the organization of teaching can be structured to foster the development of theoretical thinking.
The organization of teaching and the formation of aesthetic-artistic thinking in historical-cultural theory		
Dissertation		
Marta Sueli de Faria Sforzi		The aforementioned thesis seeks to clarify the theoretical and methodological conditions that favor the teaching and learning of scientific concepts, using the historical-cultural perspective as a reference, especially Leontiev's Activity

Conceptual learning and teaching organization: contribution of activity theory	Theory, investigating the relationship between the appropriation of concepts and psychic development. The field study was developed by researcher Maria Elisa Mattosinho Bernardes with 3rd-year elementary school students, specifically with geometry content, and kindly provided to researcher Marta Sueli de Faria Sforni, who carefully analyzed the recordings, allowing her to systematize how conceptual learning and teaching organization occur, identifying the need for mediation based on elements of theoretical thinking, such as reflection, analysis, and planning of internal actions. This mediation is important to facilitate the transition from actions to operations, promoting new levels of thought organization.
Thesis	
Moisés Alves Fraga	The dissertation analyzed the organization of teaching angle and location concepts, using official documents that guide education in Brazilian elementary schools as a reference, in addition to historical sources on the development of these concepts. The main objective was to identify possible factors that influence students' difficulties in understanding the concept of angles. The empirical research was conducted with 4th and 5th grade students who participated in the Mathematics and Science Club at the USP School of Education, a learning environment chosen for providing adequate conditions for the development of teaching activities focused on this concept. This work made valuable contributions to this research, including fundamental elements for reflection, such as the role of theoretical thinking development, the use of games, and the application of learning-triggering situations to promote understanding of the concept of angle. It was not selected because the organization of teaching was predefined as the main requirement.
Significance of angle: evidence of the concept in localization activities	
Dissertation	
Ronaldo Campelo da Costa	This research was conducted within the scope of the project entitled "Mathematics Education in the Early Years of Elementary School: Principles and Practices of Teaching Organization," developed within the Faculty of Education at the University of São Paulo (USP/SP) and funded by CAPES through the Education Observatory Program (Obeduc). The project involved higher education faculty members, undergraduate and graduate students (master's and doctoral levels), as well as teachers, supervisors, and coordinators from basic education. The central objective was to investigate the meaning-making process related to the use of teaching materials in pedagogical activities in Mathematics. Data were collected through video recordings that captured participants' interactions during Mathematics teaching activities carried out within the project's framework. These activities, structured according to the Teaching Guiding Activity (AOE), were based on problem-situations that encouraged collective discussion and collaborative problem-solving. Grounded in the principles of Activity Theory, the pre-service teacher also developed greater awareness of the role of mediating tools in the learning process, including the selection of appropriate teaching materials to support students' mathematical understanding. Although the study provided significant contributions, its emphasis was placed on Mathematics education and the development of teaching competencies related to the articulation of knowledge and practice in the use of didactic materials. For this reason, the research was not selected for detailed analysis, in accordance with the criteria established.
Teaching materials in mathematics education: the significance of mediating artifacts for teachers in continuing education	
Thesis	

Source: GEPAPe website and systematized by the author.

A leitura das teses e dissertações selecionadas no quadro 02, volta à pergunta problematizadora: Como a organização do ensino pode ser promotora do pensamento teórico nos estudantes dos anos iniciais do Ensino Fundamental?

Diante de tantas leituras de teses e dissertações, foi possível compreender que a trajetória do grupo e das pesquisas e produções já realizadas por seus membros é fundamental para contextualizar as reflexões e contribuições de pesquisadores atuais sobre a organização do ensino na atividade pedagógica e para a análise a respeito do objeto proposto.

Research Results

The proposed study focused its analysis on academic productions—theses and dissertations—produced or supervised by members of GEPAPe, with special emphasis on those that addressed the organization of teaching and the promotion of theoretical thinking in the early years of elementary education. This selection was based on the understanding that such works provide a solid foundation for comprehending the research object, offering an in-depth analysis of the pedagogical practices developed by the group.

Through this investigation, the study seeks to respond to the central research question while also constructing theoretical and methodological support for an approach to teaching organization that effectively contributes to students' holistic development.

To identify works that could help address the guiding question of this research, a survey of theses and dissertations produced by GEPAPe members was conducted. Among these, 26 studies supervised by Professor Manoel Oriosvaldo de Moura were identified and initially analyzed through a review of their abstracts, tables of contents, and introductions.

To define the analytical corpus, priority was given to studies that specifically addressed issues related to the organization of teaching, the development of theoretical thinking, and the implementation of educational experiments with students in the early years of elementary education.

Based on these criteria, one dissertation and one doctoral thesis were selected, both closely aligned with the objectives of this study, particularly regarding the themes of teaching organization, theoretical thinking, and pedagogical activity. These are:

- Carolina Picchetti Nascimento (2010): *"The Organization of Teaching and the Development of Aesthetic-Artistic Thinking in the Historical-Cultural Theory."*
- Marta Sueli de Faria Sforzi (2003): *"Conceptual Learning and Teaching Organization: Contributions from Activity Theory."*

These works were selected due to their relevant contributions to understanding the connection between teaching organization and the development of theoretical thinking in the early years of elementary education—elements central to the goals of this research.

For the purposes of analysis, the authors and their respective works were organized in alphabetical order and examined based on the concept of “isolated elements.” This concept, as defined by Caraça (1951, p. 112), refers to the abstraction of a set of specific elements or facts from a broader whole, temporarily disregarding their relationships with other components: *"Faced with the impossibility of grasping, in a single view, the entirety of the Universe, the observer isolates and highlights, from that totality, a set of beings and facts, abstracting from all others with which they are related."*

The dissertation by Carolina Picchetti Nascimento (2010), entitled *"The Organization of Teaching and the Development of Aesthetic-Artistic Thinking in the Historical-Cultural Theory,"* aimed to understand how teaching can be structured to foster the development of theoretical thinking, grounded in historical-cultural theory.

The research emphasized the promotion of theoretical thinking through aesthetic-artistic thought, especially within the context of Physical Education, which encompasses aspects related to bodily culture and aesthetics.

Nascimento (2010) highlighted the relevance of the Teaching Guiding Activity (AOE) as a mediating element in the teaching-learning process, emphasizing that knowledge arises in response to human needs.

For the author, AOE represents a central theoretical and methodological framework for organizing teaching, contributing to the creation of activities that integrate teaching and learning and promote theoretical thinking.

According to Moura (1996), AOE is structured as the genesis of the concept, encompassing triggering problems, the search for intellectual tools, and the systematization of solutions—elements essential to the pedagogical organization outlined in the study.

Nascimento (2010) argued that teaching should be planned to stimulate students' motivation for learning, positioning them as active agents in this process, capable of transforming both material and immaterial aspects of their reality. Her research offered significant contributions to the development of theoretical thinking in the early years of elementary education, aligning closely with the objectives of GEPAPe.

The doctoral research by Marta Sueli de Faria Sforzi (2003), entitled *"Conceptual Learning and Teaching Organization: Contributions from Activity Theory,"* analyzed how the

processes of teaching and learning scientific concepts can be enhanced, based on Activity Theory (Leontiev) and the contributions of Davidov. The primary aim of the author was to identify the theoretical and methodological conditions that make this process more effective.

Sforni (2003) addressed the relationship between schooling and human development in literate societies, emphasizing the formative specificities of school education. She argued that the teaching of scientific concepts should promote the development of new psychic capacities—such as theoretical thinking—structured through AOE, which begins with a problem-situation.

According to the author, the teaching of scientific concepts should challenge students to reflect in a differentiated manner, developing skills such as investigation, critical analysis, and questioning—essential for cognitive advancement.

From a historical-cultural perspective, Sforni emphasized that knowledge is a social and cultural construction mediated by sign systems, and that learning occurs through the active appropriation of these elements. In this context, the challenge of organizing teaching lies in engaging students in activities that directly connect them to the concepts of various curricular areas, thus promoting meaningful and transformative learning.

In her analysis of teaching practices, Sforni (2003) identified evidence of psychic development through mental operations associated with the study of scientific concepts. The author observed the manifestation of capacities such as reflection, analysis, and internalized action planning—characteristics of theoretical thinking. These aspects were evident in the resolution of tasks linked to the mental operations described by Leontiev, in contrast to the formal logic based on sensory perception, which is still widely adopted in elementary education.

Final Considerations

From this perspective, it is recognized that the organization of teaching defended by the GEPAPe researchers is grounded in the theoretical foundations of the AOE. This approach reflects the essential components of Activity Theory: needs, motives, objectives, actions, and operations. From a methodological point of view, the proposal is materialized through triggering learning situations, which aim to engage students in solving educational problems.

The implementation of pedagogical activity, in this context, encompasses two interdependent processes: teaching, which is the responsibility of the teacher, and learning, which is carried out by the students. In this dynamic, the teacher's objective must be

transformed into a motive that mobilizes student learning, through conscious actions and operations, resulting in the requalification of both parties' thinking.

The analyzed research revealed important points aligned with these foundations, such as:

- a) the definition of central concepts and the identification of motives, actions, and operations;
- b) the promotion of reflective and analytical processes and the elaboration of internal action plans;
- c) the description of the process of organization and development of students' thinking;
- d) the appreciation of the quality of pedagogical interventions carried out by teachers;
- e) the demonstration of the feasibility of organizing teaching based on AOE.

We conclude that the organization of teaching proposed by GEPAPe constitutes an effective means for the development of theoretical thinking in students in the early years of Elementary Education. This methodological theory highlights the potential of AOE as a tool to structure intentional and mediated pedagogical practices, promoting significant advances in the teaching and learning processes.

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