Obutchénie
Revista de Didática e Psicologia Pedagógica

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

# Study activity as a way to appropriate historical knowledge[1]

## A atividade de estudo como processo para a apropriação do conhecimento histórico

*Mônica do Carmo Apolinário de Oliveira* [2]

*Dagoberto Buim Arena* [3]

**ABSTRACT**

Little by little, the defense of a teaching practice that values students' learning, their processes of appropriation and objectification of knowledge, the development of autonomy and their more complex psychic capacities are taking shape in school spaces through research guiding teaching- learning. This article is the result of a research developed at the Instituto Federal de Rondônia, campus of Ji-Paraná, during the second semester of 2019, with students of the Technical Course in Computer Science Integrated to High School. The objective was centered on investigating an intentional and specifically planned pedagogical methodology for the appropriation of historical knowledge through the bias of theoretical-reflective thinking. For that, the Didactic-Formative Experiment of a dialogical nature was used, organized in a study activity, in the light of the Historical-Cultural Theory. Data analysis followed the path of Historical-Dialectical Materialism, since education is a social and political practice produced in the contradictions of everyday life in society. The relevance of this discussion is

**RESUMO**

Pouco a pouco a defesa de uma prática docente que valoriza as aprendizagens dos estudantes, seus processos de apropriação e objetivação do conhecimento, o desenvolvimento da autonomia e de suas capacidades psíquicas mais complexas vão tomando corpo nos espaços escolares por intermédio de pesquisas orientadoras do ensino-aprendizagem. Este artigo resulta de uma pesquisa desenvolvida no Instituto Federal de Rondônia, campus de Ji-Paraná, durante o segundo semestre de 2019, com estudantes do curso Técnico em Informática Integrado ao Ensino Médio. O objetivo esteve centrado em investigar uma metodologia pedagógica intencional e especificamente planejada para a apropriação do conhecimento histórico pelo viés do pensamento teórico-reflexivo. Para tanto, utilizou-se o Experimento Didático-Formativo de natureza dialógica, organizado em uma atividade de estudo, à luz da Teoria Histórico-Cultural. A análise dos dados percorreu o caminho do Materialismo Histórico-Dialético, uma vez que a educação é uma prática social e política produzida nas contradições da

[1] Part of a research project funded by the Capes development agency.

[2] PhD in Education, Professor of History at the Federal Institute of Rondônia – Ji-Paraná campus, Rondônia, Brazil. Orcid: http://orcid.org/0000-0001-5165-7211. E-mail: monica.oliveira@ifro.edu.br.

[3] PhD in Education. Lecturer in Reading. Professor in the Graduate Program in Education and the Department of Didactics at Unesp – Marília campus, São Paulo, Brazil. Orcid: http://orcid.org/0000-0001-9285-6487. E-mail: dagobertobuim@gmail.com.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

configured in the reflection on the study activity as a way to develop in students, under the guidance of teachers, theoretical-scientific thinking, the understanding of concepts in the movements of their historicity, in the relationships, contradictions and connections established in this process.

**Keywords:** Historical-Cultural Theory. Study Activity Theory. Historical Knowledge.

vida cotidiana em sociedade. A pertinência dessa discussão configura-se na reflexão sobre a atividade de estudo como caminho para desenvolver nos alunos, sob orientação docente, o pensamento teórico-científico, a compreensão de conceitos nos movimentos da sua historicidade, nas relações, contradições e conexões estabelecidas nesse processo.

**Palavras-chave**: Teoria Histórico-Cultural. Teoria da Atividade de Estudo. Conhecimento Histórico.

## 1 Introduction

This article is the result of a larger study conducted at the Ji-Paraná campus of the Federal Institute of Rondônia. The subjects were students from two second-year classes in the Technical Course in Information Technology Integrated with High School program. The researcher also taught the surveyed students. A fundamental and troubling question sparked this didactic proposal: How can the Theory of Study Activity promote learning historical knowledge when the motive and objective align and make sense to the student?

The theoretical necessity of answering this question shaped the main objective of investigating a specifically planned, intentional pedagogical methodology for high school students to acquire historical knowledge through Study Activities. To this end, it was necessary to observe and analyze whether and how an organized teaching process based on study activities creates conditions for acquiring historical knowledge and forming students as active, aware historical subjects.

In the teaching-learning process, knowledge is appropriated in such a way as to transform the subject of learning when students can establish a dialogue between everyday life and scientific knowledge in an intermittent manner. This idea is supported by Historical-Cultural Theory (HCT) (Vygotsky, 1981, 1984) and the guiding principles of learning and development based on study activity (Davydov, 1988, 1999; Leontiev, 1978, 1983), as well

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

as the theoretical contributions of the philosophy of language (Bakhtin, 2017; Kosik, 1995).

In general, this is a defense of teaching practices that value student learning, the processes by which students appropriate and objectify knowledge, the development of autonomy, and the development of their more complex psychic capacities. Assuming these principles as guiding elements for organizing teaching, this article proposes using the Theory of Study Activity developed within the Historical-Cultural perspective to contribute to qualitative improvements in teaching and learning historical knowledge in a school environment.

The text is divided into two sections. First, it presents the theoretical and methodological principles of developmental didactics and study activity, emphasizing the configuration of the didactic-formative experiment. Second, it highlights the organization of study activities aimed at appropriating historical knowledge based on the aforementioned theoretical and methodological principles. This section presents the context, the instruments used in the procedures, the diagnosis that informed the planning and development of pedagogical behaviors, and the specifics of each study action and operation that structured and guided the acquisition of historical knowledge, with a focus on the *Middle Ages*.

## 2 Guiding principles

Marx's concept of *activity* originates from German philosophy, particularly the humanist philosophical systems of Hegel and Kant. According to German philosophy, humans are active agents in creating life and the world. Therefore, they are responsible for themselves and the environmental and social spaces they occupy. Human activity comprises the effective actions, ideas, aspirations, and principles of humans. In Marxism, the most valuable concept is activity as the basis of all human life. Consistent with this idea, Lev Vygotsky (1896-1934) elaborates on activity in his writings. However, it was

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Alexis N. Leontiev (1903-1979) and his group of scholars who deepened the approach to Activity Theory based on Vygotsky's work. Building on Historical-Cultural Theory, Elkonin (1904–1988) and Davydov (1930–1998), among others, developed the Theory of Study Activity (TAE). The origin of Developmental Didactics lies within TAE.

Developmental Didactics is formulated from a complex system of theoretical concepts configured in dialectical, developmental teacher-training didactics. It originates from historical-cultural psychology and finds its epistemological basis in historical-dialectical materialism. Its theoretical foundation is inspired by the work of Vygotsky and Leontiev. However, the approach outlined in this scientific text refers to the principles of the Elkonin-Davydov-Repkin system. This system focuses on developing a TAE "whose main content is the self-transformation of the subject through the formation of theoretical thinking based on learning scientific concepts and generalized modes of action" (Puentes, 2019, pp. 49–50).

The configuration of study activity as a unique mode of human interaction was introduced to the academic world by Elkonin and Davydov in the second half of the 1950s. They studied student development in the teaching-learning process. They developed a teaching-learning system that differs from traditional teaching methods in terms of how participants interact with each other to acquire knowledge. This new system later became known as *Developmental Learning*.

In his studies, Elkonin observed in the 1960s that the fundamental aspect of study activity is that its objective and result do not change the object with which the subject operates but rather, change the subject of the activity. This differentiates study activity from any other type of activity. The focus of study activity is the teaching-learning process and the rational use of intellectual capacities by learners.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

According to Leontiev, the term "*activity*" has two structural characteristics: "activity-action-operation" and "motive-end-condition" (LEONTIEV, 1975, as cited in DAVIDOV and MÁRKOVA, 2019, p. 192). The term "*study*" refers not only to the mastery of knowledge or the actions students perform when acquiring knowledge but also to qualitative exchanges, psychological development, restructuring, and reflective enrichment.

Studying is therefore an activity consisting of interrelated study actions and tasks with common objectives that enhance the development of the psyche and human personality — that is, integral development of the individual. Its main components are the *study task, study actions, and control and evaluation actio*ns (V. V. Repkin & N. V. Repkina, 2007; Davidov & Márkova, 2019). Improving each of these components ensures the formation of study activity.

The first component is the *study task.* It corresponds to the unit of analysis of the study activity structure. The main condition for formulating a study task is to create a situation in which a student's prior knowledge is challenged by introducing a contradiction, prompting the search for a solution. Solving the problem leads the student to a study situation.

The purpose of the study task and the student's autonomous solution are related to motivation to study and transforming the student into the subject of the activity (Elkonin, 2019; Davydov, 1999). The study task enables mastery of the procedures for performing the task, as well as modes of action, while allowing for the appropriation of knowledge. It consists of not only actions that provide solutions to the study task but also actions that ensure the student autonomously appropriates and objectifies knowledge.

A student's understanding of study tasks is closely associated with substantial (theoretical) generalization and related to the modes of action formed during the study process. Depending on how they are directed in the educational process, these lead to either *empirical or theoretical generalization.* Empirical generalization is based on observing and comparing the external properties of objects, while theoretical generalization is based on

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

analyzing objects to establish essential relationships. In developmental teaching, didactic actions focus on equipping students with "intellectual tools for acquiring knowledge and ways of thinking, such as abstraction, generalization, and concept formation" (LIBÂNEO & FREITAS, 2019, p. 214). These processes of internalization allow subjects to reconstruct activities, understand relationships and functions, and grasp the interpsychological and intrapsychological processes that comprise consciousness.

Students can transcend the limits of sensory understanding (empirical knowledge) to reach theoretical scientific thinking, which is a prerequisite for intellectual development. This enables students to grasp the essence of scientific thinking when investigating content and to understand concepts, their historicity, relationships, contradictions, and connections. Through this process, students internalize concepts, methods, and cognitive procedures; appropriate essential principles; and apply them to specific situations.

The second component of the study activity structure is *study actions*. Through these actions, students discover the conditions under which the concepts they are learning arise. Study actions facilitate the movement of abstractions, the identification of essential modeling characteristics, and the deduction of specific manifestations based on substantial abstraction. When the process is correctly organized, students' actions are oriented toward individualizing general relationships, understanding guiding principles and central ideas of the studied content, delineating conceptual links, and mastering procedures for moving from general relationships to concretization and from the model to the object and vice versa (DAVÍDOV, 1988).

Within the scope of HCT and developmental teaching, the constitution of a *model* is understood from the perspective of human activity. Modeling is a skill developed through the process of assimilating study actions. A model requires reflection on the essential relationships of a concept. Students are prepared so that they can produce their own types of models later on. Due to its structure, modeling is an activity that requires actions such as analyzing

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

the content to be modeled, understanding the correspondence between symbols and signs, transforming the model, regrouping conceptual elements, and comparing them with reality. In short, modeling is linked to the organization and development of the teaching-learning process with a focus on human development based on theoretical thinking.

The final component of the study activity is the student's performance of *control and evaluation actions,* which presuppose mastery of the performed action. Evaluation enables students to identify and understand their challenges, allowing them to adjust their approach accordingly. Control involves comparing the execution of an action to a standard. These study activity components depend on voluntary attention and establish control over the performance of the action, indicating the efficiency of the student's study actions. These actions provide evidence of the students' self-regulation of their study behavior and of transformations in their mental, moral, and personal development. The set involving each component of the study activity directs, collaborates with, and guides the teaching-learning process, promoting the student's intellectual development. It also allows us to verify the degree of autonomy with which students move from one component to another.

In Developmental Didactics, the objects of study are conscious, organized processes that aim to achieve certain cognitive goals and, above all, facilitate the humanized formation of personality. Accordingly, the methodology of pedagogical action must align with the nature of the studied content, as Vigotski (1984) rightly points out. One method suited to the procedural nature of its objects of study is the *didactic-formative experiment,* which is used to develop and evaluate didactic systems based on developmental didactics. Davidov (1988) defines the didactic-formative experiment as a method for studying the relationship between learning and students' mental development.

Based on Davidov (1988) and Aquino's text (2013), the didactic-formative experiment involves incorporating new methodologies and procedures into educational practices. These procedures are associated with sets of educational

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

resources and technologies in the teaching and learning process of one or more subjects. The purpose is to verify the effectiveness of experimental teaching systems in students' knowledge acquisition. This methodological approach transcends research by becoming an educational and formative method oriented toward fostering the teaching-learning process and the intellectual development of students.

Research based on the concept of study activity employs this method to structure and restructure experimental school programs. This method ensures the activity focuses on the study process and encourages analysis of all its components, such as study tasks, actions, and control and evaluation actions. It also pays special attention to new forms of study activity involving intellectual and moral development and links the activity to the personal and social dimensions of student development.

## 3 Pedagogical actions of the study activity in the appropriation of historical knowledge.

The Didactic-Formative Experiment presented in the following pages was designed to engage students in Integrated Technical Education activities in high school and provide them with opportunities to grow. To this end, teaching and learning strategies were organized to prioritize interactions and exchanges to stimulate motivation and needs. Supported by a developmental perspective, the procedures were linked to a context of social practice; thus, most actions and operations were carried out in groups. A context of critical analysis permeated all study activities. Without going into detail, the teaching, and learning methodology was designed to encourage intellectual activity among students and promote positive developmental changes. Additionally, the Didactic-Formative Experiment method extends beyond the scope of this research, as it constitutes a teaching and learning method consisting of a literature review, diagnosis, planning, application, and analysis.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

It should be noted that the researcher, who was also the teacher of the subjects of the study, collaborated with a group of mediators to facilitate knowledge acquisition. Partnerships with classmates were formed during the process. Through cooperative interaction, they expanded learning and development. The main purpose was to promote students' cognitive development in forming the concept of the Middle Ages and its historical links with the present day.

The historical content surrounding the theme of the *Middle Ages* is part of the History curriculum and forms part of the guide to topics to be covered in elementary and high school. Although the experiment was developed in high school classes, the structure presented is perfectly adaptable to elementary school and can be applied to any other content in the subject, since the approach considers the unity and interrelationship between the components of the study activity.

The didactic action developed in the experiment also benefits from the concept of mediating instruments in learning. Virtual world resources (DICT – Digital Information and Communication Technology) such as VLE – Virtual Learning Environment, WhatsApp, applications, and software, were used in the experiment as mediating artifacts, auxiliary tools for human activity.

Practical historical and cultural knowledge, produced by humans, is even more objectified in contemporary times in the articulated mechanisms of the digital world. These are human inventions that allow individuals to act on cultural, social, and historical aspects and, simultaneously, evaluate the interventions that these inventions perform.

Although Vygotsky's theory does not refer to mediation through DICTs, from a current perspective, it correspondingly deals with the notion of mediation for effective learning. The recognition of DICTs for the intellectual development of the individual can be perceived based on the following statement by Vygotsky:

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

> The introduction of a new cultural tool into an active process inevitably transforms it. In this view, mediating resources such as language and technical tools do not simply facilitate the forms of action that will occur, but completely alter the structure of mental processes (author's translation) (VIGOTSKI, 1981, p.137).

This way of thinking emphasizes the importance of pedagogical practices that use virtual technological resources to encourage critical analysis of cultural elements and the information shared daily on the internet. These practices promote the conscious and practical use of technology and the development of social behaviors based on respect, integration, and solidarity.

However, it is important to recognize the teacher's essential role in the teaching-learning process. New technologies will never replace teachers because their social role is fundamental to HCT principles, including organizing, collaborating, and guiding students in researching, learning, and seeking new information, especially by facilitating interactive student exchanges.

Considering the observed aspects, it's important to note that digital technology's potential is insufficient to guarantee learning and does not indicate that a single technology is suitable for all educational situations. The purpose of the study, the needs of the school, and the content and historical themes addressed are indicators of which technologies should be used and whether it is appropriate to use technology in a given educational situation.

## 3 1. Listening

In developmental learning, managing the student's level of development is essential for organizing the educational process and guiding actions. This allows teachers to plan, monitor, and adjust procedures. To achieve the desired objectives, it is necessary to determine a starting point. This occurs through active listening. The first step is to understand the student as the subject of the study activity.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

According to Vygotsky, diagnosis involves observing the initial signs of the dynamics of everyday school life present in casual conversations and moments of interaction between students and between students and teachers. However, Bakhtin's conception of listening broadens the meanings related to the methodological and reflective processes. It proposes understanding students' words as a dialogical science of listening in which "investigation becomes questioning and conversation" (Bakhtin, 2017, p. 319). Through listening, one can discover what is knowable and verify what is to be revealed in real-life moments in the school environment under specific study conditions. As Helbel (2022, p. 66) says, "There is no bridge connecting the two sides if there is no listening." According to the author, one cannot understand students without listening to them as historical and social subjects.

While listening, you can ask investigative questions to determine how much information students have about the studied content. These questions can be asked during a spontaneous conversation, through a questionnaire or task, or by defining related terms. Finding the most appropriate technique for each teaching situation is challenging.

There is no set formula, but observation and evaluation should provide teachers with data on mistakes and successes, the ability to correct mistakes, problem-solving methods, and interests related to the content that can motivate learning. In other words, teachers should discover the needs, motives, and objectives that lead students to learn.

Listening presupposes diagnosing the educational process to understand students' developmental levels regarding the content and establish the most appropriate path for organizing and planning the teaching-learning process. It enables perception of place, spaces, and subjects. It should be noted that diagnosis is an ongoing search, so evaluation is a constant action that improves and facilitates pedagogical action.

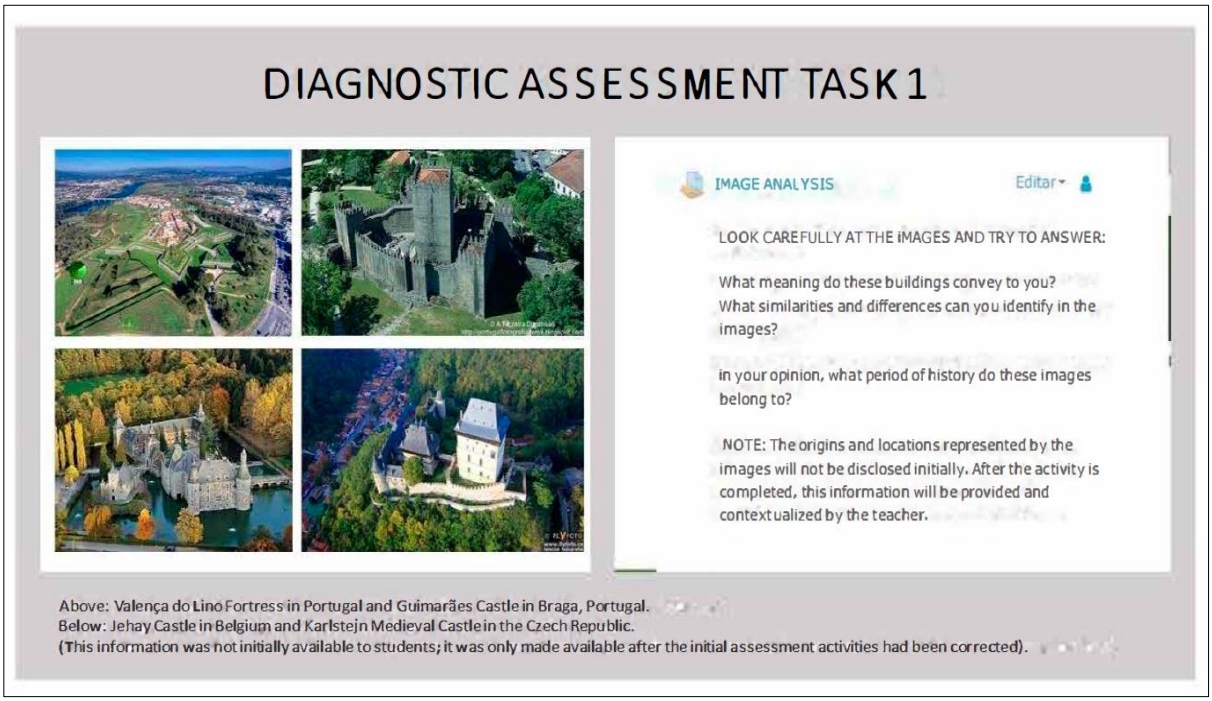
From this perspective, the various teaching activities developed aimed to identify the connections that were and were not established in the

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

conceptual network of the students investigated in relation to content referring to the Middle Ages. The listening exercise tracked evidence of the students' initial apperceptive base, which "includes constant and unstable elements, formed [...] by the constant and repetitive influences of the surrounding environment" (JAKUBINSKIJ, 2015, p.88), to understand and make decisions for the development of study actions and operations. To this end, a diagnostic assessment task was applied, in which students observed and answered questions posted on the VLE. The action took place in two classes: in the first, students performed the tasks; in the second, they discussed the results with the class to understand their classmates' way of thinking.

Three procedures were carried out: 1 – A composition of images that made students think and remember; 2 – A direct question about their ideas and information about the Middle Ages; and 3 – A glossary with keywords about the Middle Ages. The tasks and their initial analyses are presented below.

Figure 1: Diagnostic Assessment Task 1




Source: VLE – Ambiente Virtual de Aprendizagem do IFRO – campus Ji-Paraná, 2019.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

In the *first task,* illustrated in Figure 1, we aimed to determine if students could connect images of medieval castles and fortifications to the need for protection and defense during the social, political, and economic conflicts of the Early Middle Ages. The task was designed to elicit a "reflective assessment" (Repkina, 2019, p. 348) and provide insight into the students' level of education. This prompted them to search for answers. According to Repkina (2019, p. 348), "the search for an answer is the content of a new study task, which presupposes a critical analysis of the applied mode of action and its correction and replacement."

Questions, comparisons, and doubts arose among the students while they were performing the tasks. For example, the first image in this diagnostic task reminded students of the Real Forte Príncipe da Beira in Rondônia. This image aroused the students' cognitive interest. According to Márkova, Dusavitsky, and Repkin (cited in Repkina, 2019, p. 428), "Cognitive interest is the core of the internal motivation system." On the same page, the author adds that internal motives for learning include creative development, acting with and for others, and acquiring new knowledge. Cognitive interests are observable signs that provide teachers with clues about students' motives for learning in a given activity.

The second task aimed to assess the students' understanding of the Middle Ages. To this end, the following question was asked: What information or ideas do you have about the Middle Ages?

Questionnaires are often used as a diagnostic tool to understand the subject of a study. According to Repkina (2019, p. 428), "The reliability of the results depends on several parameters, primarily the quality of the questions (attitude toward the researcher, mood of the class, individual or group exam, etc.)." This question focused on the students' attitudes toward learning about the Middle Ages and its historical content. Attitudes regarding making

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

mistakes, drawing comparisons, formulating ideas, and coherence in arguments constitute intermediate means of evaluation and obtaining evidence about the content of students' answers and can inform levels of historical understanding.

Upon reviewing the answers, a significant number of historically inaccurate or taken-out-of-context ideas or terms were identified. Expressions such as: *"Gladiator period," "Slavery," "Dark period of history," "Much technological development," "Portugal as a power," "Capitalist superior order," "Moving from the chipped stone period to polished stone," "Dark Ages," "Expansion of Islam," "Humanism," "Enlightenment," and "French Revolution,"* among others, indicated errors or a lack of clarity in the argument. Conversely, terms or concepts directly related to the content were identified, albeit to a lesser extent. These allowed us to evaluate the data and organize our planning.

The third task was to create a glossary of thirteen keywords about the Middle Ages. Students had to assign a meaning to words they did not recognize or simply answer "I don't know" if they did not know how to define them. Upon analyzing the responses, it was evident that a significant proportion of the answers regarding the terms *"monetary," "estates," "suzerain," "Holy Inquisition," and "vassal"* were either incorrect or insufficient. This finding indicated the need for further explanation of the content to facilitate concept formation. Defining concepts enables teachers to evaluate how closely students' understanding aligns with the initial goal.

This action served as a starting point for the teacher/researcher who organized and guided the process and for the students, since both the teacher and the students have an initial social practice of knowledge before it becomes school content. This starting point marks the growth of the teacher and students during and at the end of the learning process. These are references that guide the control of the activity.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

In summary, the listening process made it possible to identify the students' actual level of development; recognize some traits of the empirical or theoretical level of thinking; point out some established and unestablished connections; probe knowledge and experiences in relation to the teaching unit; and verify the students' prerequisites to prepare them for other content.

## 3 2. Study actions

The actions and study operations were defined to guide the development of students' thinking about content related to the Middle Ages. The structure designed in the pedagogical process was organized into six actions, each of which consisted of operations related to the content (Middle Ages).

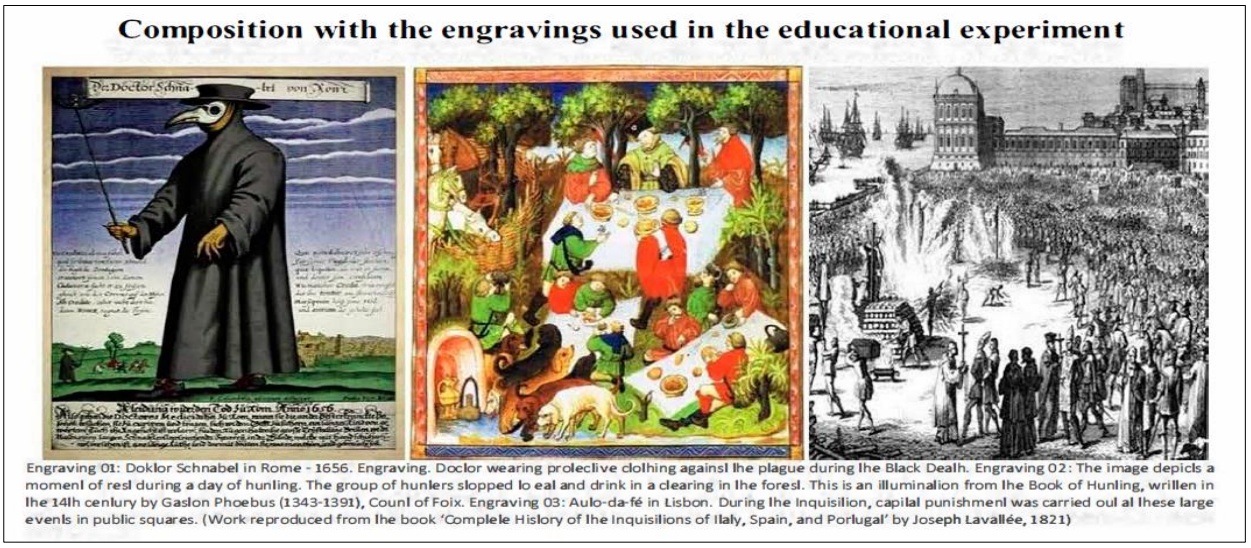
The *first action* was the Object-Sensory Analysis of the content. The focus was on finding, through analysis, the essential defining element of the object of study that allows it to be understood in relation to other objects, to compose a system of knowledge objectified through theoretical thinking. At this point, it was necessary to understand the universal relationship that conceptualizes the Middle Ages in its entirety. The teaching activity was aimed at provoking the formation of concepts about the medieval historical period so that students could arrive at a reasoning, an abstraction of the object.

Through theoretical thinking, the concepts about the Middle Ages, their relationships, and conceptual links were reworked to form a system of knowledge in students that aims to "find, through analysis, the essential element that defines the object and allows it to be understood as an integral object in its relationships with other objects [...]" (MILLER, 2019, p.81). Five operations were performed in this action. In the first operation, the goal was to identify the connections formed and not formed in the student's conceptual network in relation to the content, through the interpretation of engravings, apprehending the level of the zone of proximal development and interfering in it in order to requalify knowledge.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

The cell phone was used as a mediating instrument, and images as mediating signs for the operation. A group was created on the WhatsApp application, through which students received, in the form of instant messages, three images referring to the Middle Ages: the Black Death, medieval hunts, and the Autos de fé (figure 2), respectively. In solving a problem, they were encouraged to describe the images, contextualize them, and present their points of view.

Figure 2: Engravings




The mobile device enabled communication through the app. Using their cell phones, students received image documents and analyzed the images to determine the truth about a historical fact. Through this exercise, each student created their own initial, abstract representation based on their experiences. Later in the process, they began to understand and explain the historical reality represented in the engravings.

The engravings were sent to the students one at a time, without captions. After observing the images, the students presented their impressions and the meanings they had attributed to them through empirical thinking in the form of instant messages, both written and audio. They also commented on their classmates' messages to promote an exchange of ideas and points of

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

view. Language played an essential role in this process, mediating relationships between the participants. This dynamic enabled students to write in discursive situations in which the other is always present. According to Bakhtin, the other guides the entire process of constructing the statement. "To be means to be for the other and, through him, for oneself. Man does not have a sovereign inner territory; he is always and entirely on the border. Looking inside himself, he looks at the other in the eyes or with the eyes of the other" (Bakhtin, 2017, p. 341). Dialogue with the participants allowed us to delve deeper into the topic under investigation, as it gave them the opportunity to express their thoughts, desires, and emotions.

The *second operation* aimed to promote an understanding of the social, political, economic, and cultural organizations of the Early and Late Middle Ages. To this end, the interactive exhibition promoted interaction and collaboration between teachers and students. Slides in Prezi projected historical information, defined concepts, established conceptual links, and presented historical documents used by historians to explain the Middle Ages. This process was linked to the third operation, in which supplementary materials containing texts, videos, and reading recommendations were made available on the virtual learning environment (VLE). Students must be provided with knowledge to guarantee success.

To establish relationships between medieval and modern-day human production, students were presented with an excerpt from Nossas raízes medievais (Our Medieval Roots) by Franco Junior (2008). This excerpt constituted the *fourth operation.* The text provides examples of everyday situations involving knowledge and productions invented in the Middle Ages. This excerpt was used as a starting point to foster a sense of belonging among students because understanding the past provides context for current experiences and knowledge. Next, students researched and identified other medieval contributions to the present day using the internet. They posted the results of their research on the VLE using the Forum tool. Through this tool,

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

students had the opportunity to comment on their classmates' posts. The objective of this exercise was to encourage students to discover the social, cultural, and economic applications of the world around them from a scientific perspective. This approach enabled critical analysis of the historical context and internalization of cultural experiences.

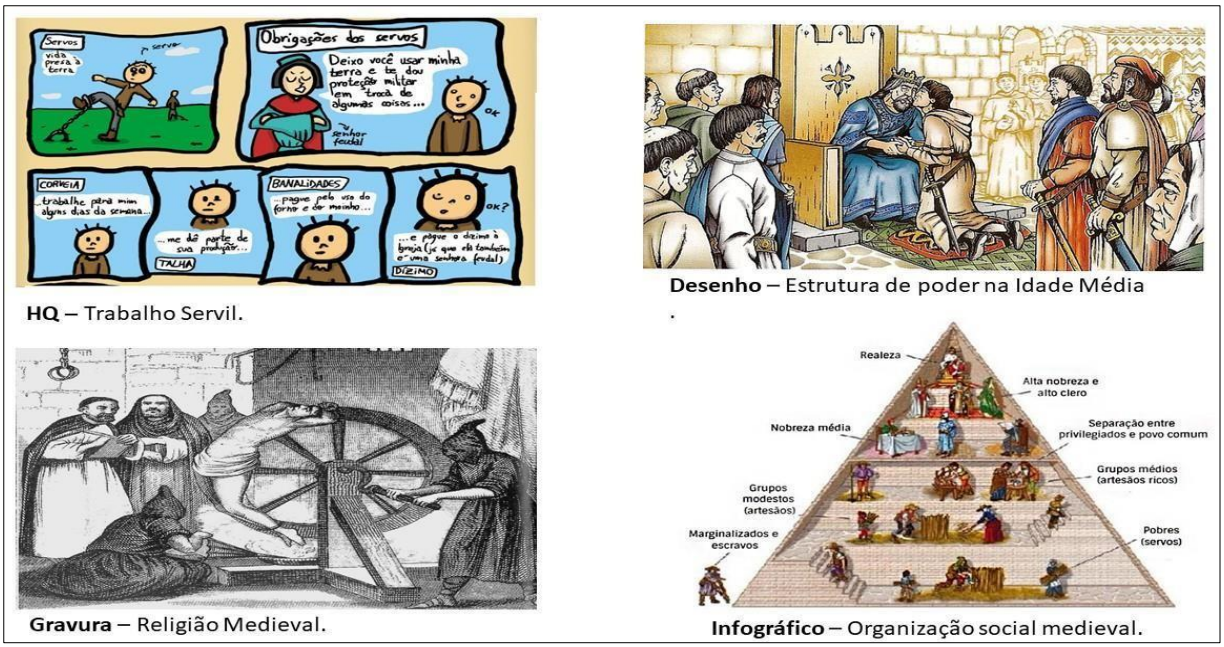
Virtual reading was present throughout the experiment. Internet use was necessary at various points during the interaction, especially when related to image reading. Image reading was necessary for understanding the image contexts presented to students in the fifth operation, a learning task that introduced them to Panofsky's (1979) image reading method. According to the author, iconography is the writing of the image, or what is explicit in the image, while iconology is the study of the meaning of the visual object and the historical and cultural context of the image.

However, students needed to understand the importance of interpreting images beyond content about the Middle Ages. Reading images had to be an experience that made sense to them and guided them to perceive the intentions and hidden interests in any image. Images can be understood as signs aggregated from various codes and cultural elements that require knowledge to be understood. This knowledge is the foundation for critically and analytically interpreting images.

After learning about Panofsky's (1979) theoretical assumptions for reading images, students were instructed to apply the knowledge to the exercise of understanding images. On the VLE, four image documents referring to the Middle Ages were posted, addressing the following themes: *Work in the Middle Ages, Medieval Social Organization, Power Structures in the Middle Ages, and Medieval Religion.* In groups of three or four, students discussed, interpreted, and described the images on the VLE, taking iconological and iconographic aspects into account.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Figure 3: Image reading activity




Source: IFRO Ji-Paraná campus Virtual Learning Environment, 2019.

In this task, the text is an image consisting of clues. Therefore, the image is a cultural sign object. The selection was made to raise questions and provide information of a social, political, economic, and cultural nature. To obtain more in-depth information, students searched the internet for additional images to help them interpret the original image more effectively. This concludes the objective-sensory analysis of the content and provides a method of image interpretation. Through this method, students can appropriate knowledge and become managers of the learning process as they re-elaborate it.

After revealing the broader general relationship regarding the Middle Ages, students were introduced to the *second study activity:* establishing a universal relationship using a model. Understanding historical reality involves reflecting on, interpreting, and evaluating facts. This process is necessary for knowledge because otherwise, it is just a pile of information with little or no meaning for life.

This activity comprises three operations. First, students were guided in forming concepts about the Middle Ages. These concepts are not words, but rather

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

ways of understanding the historical relationship between facts and the implicit totality. Dialectical thinking guides the formation of these concepts. Kosik addresses this concept:

> Understanding a thing means knowing its structure, and the concept of a thing is an understanding of that thing. The primary characteristic of knowledge is the decomposition of the whole. Dialectics does not approach thought from the outside in, nor does it do so immediately. Rather, knowledge is dialectics itself in one of its forms. Knowledge is the decomposition of the whole. In a dialectical conception, the terms "concept" and "abstraction" refer to a method that decomposes the whole to spiritually reproduce the structure of the thing and thus understand it (KOSIK, 1995, p. 18).

To assist with the concept formation process, a proposal was presented to create a mind map, which would encourage students to develop a textual model enabling them to establish connections and articulate their understanding of elements from the High and Late Middle Ages.

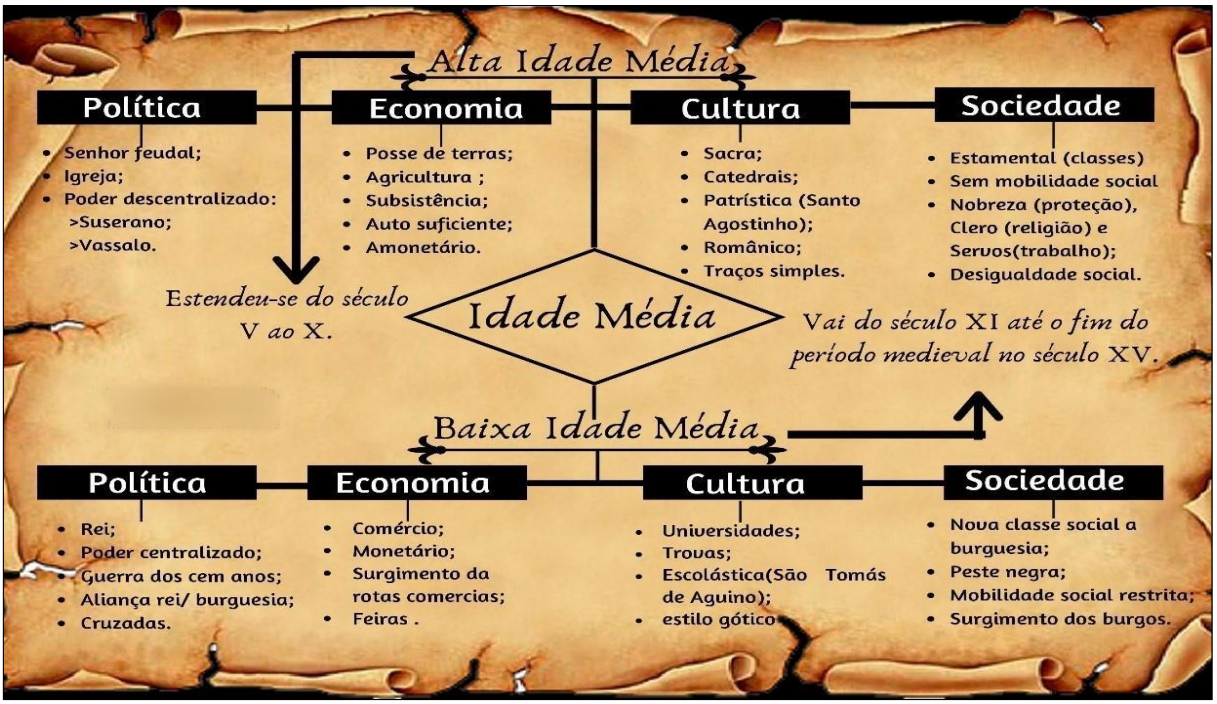
The students were introduced to software that facilitated the graphic organization of mind maps: Canva, Lucidchart, and MindMeister. The work was developed based on group compositions with students at different developmental levels, intending to foster mutual influence within the students' Zones of Proximal Development (Vygotsky, 1984).

For the third activity, students worked in groups to create a mind map classifying elements (cultural, social, political, and economic) of the Early and Late Middle Ages. They conducted internet research, reviewed notes from class discussions, and designed the map in a freeform manner to encourage creativity. Working in groups enabled discussion and information sharing.

Figure 4 shows the map created by one of the groups of participants to demonstrate the operation performed.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Figure 4: Metal map produced by a group of students.




Source: Author's database, 2020.

The appropriation of the scientific concept in the Middle Ages began with a verbal definition of the concept. This was followed by a study of the conceptual network that gives meaning to the theoretical content. According to Longarezi (2017), it is the study of the essence of the scientific concept, starting from the definition and conceptual links, that configures a system of understanding. Using mind maps proved to be an effective teaching resource and strategy. The graphic organization of knowledge through mind maps enables the formation of a web of relationships (Novak & Cañas, 2010) and promotes an environment of scientific and creative idea exchange. It expands collaboration, develops critical and systemic thinking, and strengthens communication.

This study action, also called modeling, enabled students to identify the internal characteristics of the content through a schematic graphic model. The creation of the map reveals how the group organized their theoretical thinking and how they understood and fixed the internal relationships of the content.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

According to Davídov, "study models constitute the essential internal link in the process of assimilating theoretical knowledge and generalized procedures for action" (Davídov, 1988, p. 182, as cited in Miller, 2019). He adds that modeling is "a special aspect of symbolic-signaling idealization in science" (DAVIDOV, 1981, p. 313, cited in MILLER, 2019).

This action also enabled the decomposition of the whole. The constitution of a model is only possible after acquiring information and concepts about the content, which assists in the appropriation process through graphically perceptible relationships and symbolic representations. As stated previously, "Understanding the thing itself means knowing its structure" (Kosik, 1995, p. 18). Breaking down the whole is the main characteristic of knowledge.

After this was accomplished, the *third study a*ction began: transforming the model. Transforming the model to study the properties of the universal relationship of the content obtained through the initial analysis creates conditions for students to perceive connections and the internal movement of objects. To broaden the worldview of the Middle Ages, a textual and iconographic model was developed to enable perception of the content's internal connections.

This action comprised three operations. The first focused on capturing themes related to the content that would arouse students' interest and curiosity and stimulate their desire to learn more. Several topics emerged: *the Templars, wars, medieval religion, prostitution, medieval work methods, epidemics, health issues, beverages consumed during the studied period, clothing, and many others*. Bringing out the content, or the subjects they appreciate, led them to the third operation: creating an infographic. However, before that, they needed to be introduced to the infographic genre, as well as its functions, properties, and particularities for dynamizing informational content about the Middle Ages for those who wished to delve deeper.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

In infographic composition, form and thematic content are dependent on each other. According to Bakhtin, it is the dialogical links between students, between students and others, and between students and texts that underpin the thematic content. As Bakhtin wrote, "Statements are not indifferent to each other, nor are they self-sufficient. They know each other and reflect each other" (Bakhtin, 2017, p. 297). Thus, when creating an infographic, the student keeps in mind the perceptions and information acquired through experience with other students, the teacher, and the readings (other utterances). The thematic content is therefore the stage for the student's dialogical relationships with others and with the readings used to understand the subject. From this perspective, when producing the infographic, the students did more than describe; they identified the dialogical relationships that constituted the thematic content.

The class to create the infographic took place in the computer lab with internet access and programs and applications available. Due to their nature, infographics allow for various reading possibilities. During the production process, students were encouraged to consider the interests of the reader. Below are two infographics (Figure 5) that demonstrate the results of this process.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Figure 5: Infographics produced in the experiment


Source: Author's database, 2020.

After the creative process, the groups presented their infographics to the class in a dynamic, participatory manner. The VLE was used to facilitate interaction between students and the teacher and to post the infographics.

It is important to highlight the relationship between mind maps and infographics because they have similar characteristics, especially in terms of the graphic organization of content. Both use visual information. However, infographics present other possibilities for interpretation that go beyond the written text by making use of images, maps, graphs, symbols, and figures. For

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

this reason, at the beginning of the experiment, students were provided access to images to spark their interest in learning visual reading strategies. This action complements the previous two. Together, these actions created optimal conditions for students to develop substantial generalization, which enables them to apply the general property of the object of study to various particular cases in which this property serves as a reference (MILLER, 2019, p. 83). This principle constitutes the *fourth study* action: deduction and construction of a system of particular tasks.

In this activity, students verify their understanding of the concepts. This is when they apply the general properties of the object to specific cases. By this point in the study, students had already grasped the importance of movement and the process of acquiring knowledge. They could also articulate their thoughts. The objective of the activity was to provide an opportunity for students to expand their understanding of the Middle Ages and establish connections with the present day.

First, various texts, scientific data, graphs, and videos about the Middle Ages and the present day were distributed. These materials covered themes derived from discussions and dialogues in previous activities. Topics were chosen based on student interests but underwent pedagogical assessment and consideration. The topics that were part of this study activity were: *Hunger, Epidemics, Wars, Women, Universities, and Work.*

Groups organized their studies based on support materials provided by the teacher and materials researched online. They were asked to identify similarities and differences between the Middle Ages and the present day, presenting their findings to the class in a manner they deemed most appropriate. In the process, the groups wrote down their ideas and conclusions to create a table in the VLE based on their contributions.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Groups were formed for presentations and debates to promote communication, participation, cooperation, and integration so that everyone could engage in the studies and discussions. Through this process, each group learned about the ideas raised by the others, shared information, and engaged in critical, interactive dialogue.

The result of this procedure was the creation of a comparative table between the Middle Ages and the present day on the topics covered. Using the comparative table as an auxiliary teaching resource in this study activity helped develop the lesson since the activity was constructed with the students. The table served as a means of interaction and appropriation of historical content, enabling student autonomy, initiative, and reflection. Comparing information about the Middle Ages and the present day allowed for a deeper understanding of the topics, bringing them closer to concepts, ideas, and the historical and cultural context. By comparing the past and present, one can see historical movements, cultural changes, and continuities.

Study situations such as this one serve to overcome the traditional model of content transmission and reception, which is of little significance for knowledge acquisition. These study activities allow students to actively participate and engage with different strategies and content.

The fifth and sixth study actions, Control and Evaluation, reveal the continuous movement between the current level of development and the zone of potential development. This zone extends beyond the school environment because the methodology aims to teach students to acquire knowledge through cultural mediation throughout their lives. The students' study actions were the focus of the teacher's analysis and served as reflections on the quality of her teaching. In monitoring and managing the planned activity, the control action ensured that students performed all study actions, while the evaluation determined the extent to which students acquired knowledge and solved the study task.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Monitoring the implementation of previous actions

> has the main function of ensuring that the general procedure of the action has all the necessary operations for the student to successfully solve the diversity of specific concrete tasks. Control ensures the required completeness in the operational composition of the actions and the correct form of their execution (ROSA and DAMÁZIO, 2012, p.521).

Control and evaluation complete the methodological structure of the study actions. Stela Miller considers that

> As the name suggests, control is intended to maintain consistent actions according to the conditions in which they are performed to maintain the integrity of the action system within the study activity. Assessment comprises not only the verification of results but also their qualitative examination, which provides an accurate understanding of how the student completed the study task (Miller, 2019, p. 83).

The act of assessment is related to the act of control because, in the study process, assessment analyzes the activity and intervenes as needed to adapt actions and ensure students acquire knowledge and learn how to learn. Study activities must be appropriate, and evaluation must be the mechanism for analyzing the activities of those who guide and those who learn.

Evaluation is practiced in different ways and for different purposes. In this experiment, evaluation went through three stages. Initially, it was intended for diagnosis (listening) to support analysis and planning. Then, it guided the process as a mechanism for measuring the effectiveness of study actions and their respective operations. Finally, it served as an instrument for verifying learning. In the field of HCT, necessity is the basis of human activity. Thus, evaluation encompasses a set of actions driven by motives that encourage teachers to act to achieve a goal. Therefore, there is intentionality in the conduct of the educational process.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

Comparative analysis between diagnostic assessments and the results of other study activities presupposes movement, indicating a starting and ending point. It is continuous movement from concrete to abstract thought and back again.

## Conclusion

The congruent movement of the study activity, externalized in the organization of the reported Didactic-Formative Experiment, revealed this teaching-learning process's potential for appropriating historical knowledge. The adopted pedagogical approach enabled the teacher to monitor students' theoretical thinking processes by developing their analytical skills and higher psychological functions, such as analysis, synthesis, reflection, abstraction, generalization, and mental planning. It also enabled students to acquire scientific concepts to foster creativity and autonomy.

In the process of acquiring historical knowledge, students materialized their human capacities and experiences. This allowed us to perceive the expansion of consciousness, elevation of knowledge levels, and connections established in the dialogues and interactions. This data proves that the teaching-learning process organized through study activities creates the necessary conditions for students to relate to and understand the content in a reflective and conscious way. Students guide themselves through the appropriate knowledge to satisfy their needs.

However, it is important to understand that study activities are not a set of rules to be applied. Rather, they are a didactic principle that changes the logic of traditional teaching. The process begins with listening to students and learning about their lives and experiences to understand their needs. Much more research is needed on the teaching and learning of historical knowledge. Nevertheless, the paradigms of study activities already show a promising movement toward transforming learners into appreciators of knowledge.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

## References

AQUINO, O. F. O Experimento Didático-Formativo: contribuições de L. S.Vigotski, L. V. Zankov e V. V. Davidov**.** In: I Seminário GEPID/OBEDUC, 2013, Uberaba. Mesa redonda: *A metodologia da pesquisa na Psicologia Histórico-Cultural e na Didática Desenvolvimental,* Uberaba, MG: 2013, p.1-12.

BAKHTIN, M. *Estética da criação verbal.* Tradução de Paulo Bezerra. São Paulo: Martins Fontes, 2017.

DAVÍDOV, V. V. *Problemas do ensino desenvolvimental – A experiência da pesquisa teórica e experimental na psicologia.* (DAVÍDOV, V. V. Problems of developmental Teaching – The experience of theoretical and experimental psychological research. Soviet Education, Ago. vol. XXX, nº. 8). Tradução de José Carlos Libâneo e Raquel A. M. M. Freitas. 1988.

DAVÍDOV, V. V. *O que é a atividade de estudo.* Escola inicial, São Paulo: Escola n. 7, p. 19, 1999.

DAVÍDOV, V.; MÁRKOVA, A. A concepção da Atividade de Estudo dos Alunos. *In*: PUENTES, R.V. e MELLO, S.A. (org.) *Teoria da atividade de estudo*: livro II: contribuições de pesquisadores brasileiros e estrangeiros. Tradução de Daniela Beraldo Barbosa e revisão técnica de Roberto Valdés Puentes. Uberlândia: EDUFU, 2019, p. 190-211.

ELKONIN, D. B. Atividade de Estudo: importância na vida do estudante. *In:* PUENTES, R. V.; CARDOSO, C. G. C.; AMORIM, P. A. P. (orgs.). *Teoria da atividade de estudo: contribuições de B. B. Elkonin, V. V. Davídov e V. V. Repkin.* Curitiba: CRV; Uberlandia: Edufu, 2019.

FRANCO JUNIOR., H. Somos todos da Idade Média. *In: Revista de História da Biblioteca Nacional*. 3 mar. 2008. Disponível em www.revistadehistoria.com.br . Acesso em 20 maio. 2019.

HELBEL, D. F. *A formação da autoria em alunos do ensino técnico no processo de criação de enunciados do gênero crônica por meio da atividade de estudo.* Tese (Doutorado em Educação) - Universidade Estadual Paulista Júlio Mesquita Filho, Marília, 2022.

JAKUBINSKIJ L. *Sobre a fala dialogal.* Textos editados e apresentados por Irina Ivanova. Tradução Dóris de Arruda C. da Cunha e Suzana Leite Cortez. São Paulo: Parábola Editorial, 123 p., 2015.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

KOSIK, K. *Dialética do concreto.* São Paulo: Paz e terra, 1995.

LEONTIEV, A. N. *O Homem e a Cultura* - O desenvolvimento do psiquismo. São Paulo: Moraes, 1978.

LEONTIEV, A. N. *Actividad, conciencia y personalidad.* Buenos Aires: Ediciones Ciencias del Hombre, 1983.

LIBÂNEO, J.C.; FREITAS, R.A.M.M. Abstração, generalização e formação de conceitos no processo de ensino e aprendizagem. In: PUENTES, Roberto V.; LONGAREZI, Andréa M. (Orgs.) *Ensino Desenvolvimental.* Sistema Elkonin- Davidov. Campinas: Mercado de Letras - Uberlândia: Edufu, 2019, p. 2013-240.

LONGAREZI, A.M. Para uma didática desenvolvimental e dialética no contexto de escolas públicas brasileiras. *Obutchénie*. R. de Didat. E Psic. Pedag. Uberlândia: EDUFU, v.1 n.1, p.187-230, 2017.

MILLER, S. Atividade de Estudo: especificidades e possibilidades educativas. *Teoria da atividade de estudo*: livro II: contribuições de pesquisadores brasileiros e estrangeiros. / (orgs) Roberto Valdés Puentes, Suely Amaral Mello - Uberlândia: EDUFU, p. 71-94, 2019.

NOVAK, J. D., & CAÑAS, A. J. The Universality and Ubiquitousness of concept maps. *In: Proceedings of the 4nd International Conference on Concept Mapping*. Viña del Mar, Chile, 2010.

PANOFSKY, E. *Singnificado nas artes visuais.* Tra. Maria Clara F. Kneese e J. guinsburg. 2. ed. São Paulo: Perspectiva, 1979.

PUENTES, R.V. Sistema Elkonin-Davídov-Repkin: gênese e desenvolvimento da teoria da Atividade de estudo. In: PUENTES, Roberto V.; LONGAREZI, Andréa M. (Orgs.) *Ensino Desenvolvimental*. Sistema Elkonin-Davidov. Campinas: Mercado de Letras - Uberlândia: Edufu, 2019, p. 123-160.

REPKIN, V. V. e REPKINA, N.V. Sobre a estrutura da atividade de estudo. Boletim da Universidade de Kharkov, Série Psicologia, nº 771, 2007, p. 217-222.

REPKINA, N.V. Diagnóstico do sujeito da atividade de estudo no sistema de aprendizagem desenvolvimental Elkonin-Davídov. In: PUENTES, Roberto V.; LONGAREZI, Andréa M. (Orgs.) *Ensino Desenvolvimental.* Sistema Elkonin- Davidov. Campinas: Mercado de Letras - Uberlândia: Edufu, 2019, p. 419-450.

DOI: http://doi.org/10.14393/OBv6n2.a2022-66643

ROSA, J.E., DAMAZIO. A. A primeira tarefa de Estudo Davydoviana na especificidade da matemática. XVI ENDIPE – *Encontro Nacional de Didática e Práticas de Ensino* - UNICAMP - Campinas - 2012.

VYGOTSKY, L.S. The instrumental Method in Psychology. In: WERTSCH, James V. (Ed.) The concept of Activity in Soviet Psychology. New York: M.E. Sharpe, 1981. p. 134-143.

VIGOTSKI, L. S. *A formação social da mente: o desenvolvimento dos processos psicológicos superiores.* 1ª ed. brasileira São Paulo: Martins Fontes, 1984.

Received in July 2022.

Approved in August 2022.