"I'm going to make a poem!": analysis of a teaching case from the perspective of cultural-historical theory

"Vou fazer um poema!":
análise de um caso de ensino sob a ótica da Teoria Histórico-Cultural

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ABSTRACT

The aim of this article is to analyze experiences that took place in a social inclusion project with children aged between 7 and 12 years. It was implemented in a community located in the periphery of a town inland in the state of Sao Paulo, during their extra-class activities at school. To perform this analysis, such experiences were recorded as a teaching case and analyzed using the concepts of the Cultural-Historical Theory. The teaching case analysis shows the relevance of the teacher's mediation strategies and the signs of development in thought, spoken, and written languages stemming from the activities proposed by the teacher.

Keywords: Cultural-Historical Theory. Information and Communication. Technologies Digital. Inclusion Teaching Case.

RESUMO

O objetivo do presente artigo é analisar vivências ocorridas em um projeto de inclusão digital junto a crianças de 7 a 12 anos, implementado em um espaço comunitário na periferia de um município do interior do estado de São Paulo, no contraturno das atividades escolares. Para tanto, tais vivências foram registradas como um caso de ensino, analisado à luz de conceitos da Teoria Histórico-Cultural. A análise do caso de ensino revela a pertinência dos caminhos da mediação docente assumidos e indícios do desenvolvimento do pensamento, da linguagem oral e da linguagem escrita a partir das atividades propostas pela professora.

Palavras-chave: Teoria Histórico-Cultural. Tecnologias da informação e Comunicação. Inclusão digital. Caso de ensino.

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1 Introduction

This article analyzes the experiences of children, aged 7 to 12, in a digital inclusion project implemented in a community space outside school hours on the outskirts of a municipality in the interior of the state of São Paulo, in light of Historical-Cultural Theory (HCT) concepts.

According to HCT, a child's belonging to a cultural environment influences their development.

Therefore, what happens (or does not happen) in the context in which a child is embedded affects their learning and organic and cultural development. In this sense, we recognize the potential of schools and intentional educational processes to influence children's learning and development, triggering distinctive processes and outcomes related to Higher Psychic Functions (HPF).

As professors and researchers committed to integrating Information and Communication Technologies (ICT) into educational processes, we selected a notable situation experienced by one of the authors and recorded it as a teaching case (Shulman, 1992; Mizukami, 2006) for the intended analysis.

The article is organized into three sections. The first section presents initial considerations on cyber culture and education as a field of inequalities and possibilities. The second section describes the teaching case in focus. The third section presents an analysis of the case based on THC concepts. The final considerations address issues related to the triad of technologies, mediation, and child development to search for clues for future pedagogical practices.

2. Initial Considerations on Cyber culture, Inequalities, and Possibilities

Throughout history, each generation has experienced the evolution and creation of technologies in its own way. Historical and social developments demonstrate the rapid technological revolution of recent decades, which has triggered a radical transformation in the organization of society (Lévy, 1999; Castells, 1999). Interacting, acquiring knowledge, working, and moving around the world are increasingly influenced by interaction with information and communication technologies (ICT). Thus, searching for information in diverse virtual environments

and participating in dynamic, collaborative networks are hallmarks of contemporary society. New forms of interactivity and connectivity and experiencing temporality through the instantaneous nature of information and communication are relevant aspects of cyber culture (Ramal, 2003; Kenski, 2018).

The Covid-19 pandemic has highlighted both inequalities and opportunities. Research conducted by the Regional Center for Studies on the Development of the Information Society (Cetic.br) of the Information and Coordination Center of Ponto BR (NIC.br) in the first half of 2020 revealed inequalities in internet access, particularly among lower-income populations and those in rural areas. The research also revealed poor internet quality and those mobile phones were the main means of access. The study also identified an increase in the registration of activities, school research, online courses, and independent studies. However, these activities reached a higher number of users with higher levels of education and higher socioeconomic status (A and B). Regarding tele centers created to enable digital inclusion and provide training in technology and professional development, recurring failures in connectivity and internet quality, as well as structural maintenance issues, were identified (CGI.br, 2020). These problems were not only present during the pandemic, but they worsened and expanded (CGI.br, 2020).

In this context, society can be characterized by the search for skills to manipulate popular technologies and the flexibility of spaces and times. However, this context inspires great caution in the face of the possibilities of alienation. A dichotomy exists between inclusion and exclusion, not only digital but also social. According to Freire (2015) and Vigotsky (2000), who share an understanding of reality based on Dialectical Materialism, the consequences of technology use are undeniable, ranging from job reductions for the working classes to consciousness formation. According to Freire (2015), it is not a matter of deifying or demonizing technology. With the author, we can reflect: What is it for? Whom does it serve? What is it for? Who does technology serve? Who supports the use of information and communication technologies?

These questions lead to a search for conscious use of cyberculture's possibilities, aiming to find ways to overcome exclusion and appropriate new literacies. From this perspective, it is clear that education must rethink its

role and strategies to integrate ICTs into teaching practice and the curriculum in a critical and creative way (Mill, 2013). Such integration cannot merely be instrumental nor aimed at making the user passive in this scenario (Almeida & Assis, 2013).

Teachers require training processes to develop their technological and/or pedagogical knowledge and skills (ROSSIT; MILL; CORREA, 2018). In this sense, it is important to analyze pedagogical practices with technology in light of the THC theoretical framework so that we can prepare ourselves for increasingly appropriate and assertive pedagogical interventions to promote student learning and development by revisiting yesterday's and today's practices.

To consider the relationship between society, education, and technology, we must acknowledge that cultural development occurs within an unequal context. Access to technology is a crucial initial issue to address. Furthermore, the State's role is to promote the democratization of knowledge. In the case of education, the after-school activities examined in this study were a step toward overcoming inequality.

Therefore, once access to technology is guaranteed, we must consider how it is mediated to students. Additionally, this discussion is further complicated by the fact that mediation is not always intentional, and professors do not always use auxiliary means correctly, hindering learning and higher psychological development (Vygotsky, 2000). In a culture of constant change, various auxiliary means emerge alongside existing ones and influence individuals' psychological processes, including at school. Technologies are invented to meet the needs of people in their environment. However, beyond this function, technologies can have an internal effect, helping individuals improve their higher psychological functions, such as memory, attention, and imagination, among others discussed by Vygotsky (1983).

For children to develop FPS, technological artifacts must be mediated. After all, differences in development are observed when an individual uses a tool and receives guidance from an adult (Vygotsky, 2000). Therefore, the contribution of the external environment is fundamental to an individual's development,

including biological development. According to Historical-Cultural Theory, biological processes are affected by external processes, which is only possible with mediation. In the case of school, this mediation must be planned with clear intentions for learning and development.

> In the process of historical development, social man modifies the modes and procedures of his behavior, transforms his natural inclinations and functions, and elaborates and creates new forms of specifically cultural behavior (VIGOTSKY, 2000, p.34).

As an adult responsible for the education of children, the professor must understand their real needs to effectively mediate. Intentional lesson planning will then ensure that the expected results are achieved. It is important to note that this is an individual process that should include interaction with ICT, as well as with other children and adults.

> This is how language, thought, and all other higher processes of behavior develop. The same is true of voluntary attention. At first, the adult directs the child's attention with words, creating a kind of supplementary indication, something like arrows, on objects in the environment, thereby creating powerful indicator stimuli. Then it is the child who begins to actively participate in these cues and uses words or sounds as a means of indication that is, directing the adult's attention to the object that interests them (VIGOTSKY, 2000, p. 232).

As the author points out, language is a tool that supports the development of other functions. According to Vygotsky (2000, p. 169), addressing language development involves addressing "the history of the formation of one of the most significant aspects of children's cultural behavior, underlying the accumulation of their cultural experience." The cultural development that takes place through the tools and signs created by humans plays a fundamental role in mediating activity. These tools and signs help mature and modify natural organic activity and the system of the Higher Psychic Functions. Initial structures, considered simple with the cultural development of the individual, gain new structures. From primitive behavior,

they become more complex and superior. In other words, this transformation occurs thanks to the mediation of artificial tools in the form of signs that contribute to the individual's development. Next, we present the teaching case narrative, motivated by the understanding that highlighting "beliefs, values, and knowledge" (MIZUKAMI, 2006, p. 10) that permeate a scenario can articulate and relive aspects of the experience, establishing reflective processes and relationships between theory and practice (DOMINGUES; SARMENTO; MIZUKAMI, n.d., p. 1). Ultimately, we aim to support professors in their initial or continuing training by sharing our analysis of the narrative in the context of THC. This will enable them to reflect on their experiences and enhance their teaching practice.

3. The teaching case, "I'm going to write a poem!": Experiences in a Digital Inclusion Project

In March 2018, the Municipal Department of Education in a city in the interior of the state of São Paulo implemented a project aimed at children and adolescents aged seven to twelve, with educational and social objectives. Activities included ballet, Zumba, hip-hop, and courses in English, Spanish, arts, young scientists, and computer science. Initially, the project took place in some municipal elementary schools and in a room provided by a municipal library in one of the schools. This paper will focus on the computer course that took place in the library's room.

Ten computers were initially installed, assembled from parts left over from the maintenance of other devices in municipal establishments. One of the authors, who was a professor in the municipal school system, was hired to teach the children in the computer course. The students were divided into two classes: Class 1 consisted of children aged 6 to 8, and Class 2 consisted of children aged 9 to 12.

At first, the project had few participants, but soon the news spread throughout the school connected to the library and also throughout the

neighborhood. "The little room was packed, and the children were always happy because everything was new." Right from the start, two of the computers did not work, restricting the work to only eight machines. Because of this, the children sometimes had to work in pairs, requiring time management so that both could use the computer. The professor had a degree in education and basic computer skills. Faced with the task of preparing a computer course, she sought to plan it so that it would not be boring and meticulously controlled by commands such as "do this," "now everyone do that." "After all, there were more than ten children per class and, as the only teacher, without even knowing who these students were; I felt the need to get to know them."

Thus, classes began, and the activities were simple, such as learning how to turn the computer on and off, typing their names in Word, and changing fonts, letters, colors, and spacing, i.e., text formatting. Over time, the activities evolved to include inserting pictures and so on. Although the children were interested in the classes, they also had many difficulties with writing:

> *In a quick assessment, I realized that the difficulties in writing development were quite considerable for the children's age. Therefore, I decided to ask the children to write more than just their names, which was already quite difficult for some of them. As a result, they frequently asked me to dictate the letters to help them complete their writing.*
> *Many questions arose from this proposal. "Why don't you write stories?" I asked the children. "But what would we write?" they immediately asked. "What kind of stories?" another child asked.*
> *"Why don't you write stories that you know that other professors or adults have told you?" I said to the students.*
> *The children became thoughtful; some began typing. Others thought for a while without writing anything. "Can there be fairies?" said one child. "Of course there can!" I replied with a smile on my face. "I'm going to write a song," said one girl.*

Some children wrote three paragraphs, others wrote one sentence, and there were even those who were unable to produce anything, as they wrote one word and then erased it. Without exception, all of them needed help at various points, as they did not know how to write many words in Portuguese.

In addition, it was agreed that if they managed to complete the class activity, the last fifteen minutes would be "free." That was all they wanted: to play the games available on those machines and to use Paint to draw, paint, create, and erase.

> *Little by little, the texts grew longer, gaining more words, lines, and shapes. It seemed that some already had a story in mind, while others began to bring texts, excerpts from books, loose sheets of paper. I didn't object because for a creative process to happen, it was necessary to have a model, a foundation, a starting point, to begin somewhere.*
> *Igor and Alice[4] were the oldest in class 2. She was 11 and he was 12. They were the most diligent students, never missing a class, never apart. Except when it was time to choose computers. They created their own designated spots. In addition, every new discovery was a celebration, like magic, an enchantment. They told everyone what they had found and taught them how they had achieved such results. Many already knew each other from the neighborhood and school, as they studied in the morning and attended classes every Tuesday and Thursday afternoon.*

With Mother's Day approaching, the idea arose to prepare something special...

> *As Class 1 was leaving, Class 2 was arriving. It was rush hour in the classroom because those who were already there didn't want to leave, and those who were arriving didn't want to waste time because an hour is nothing when you're enjoying what you're doing.*
> *Igor and Alice sat down right away. The children often brought up topics from school, and conflicts were even resolved there because they had space to talk, and I always engaged with them.*
> *It was time for the activity. Igor said he was going to do something for his mother because her birthday was at the end of the week. I thought it was a good idea and gave him my full support. I asked, "What are you going to do?" Igor replied, "I'm going to write a poem." Maybe he had seen an example in class that morning; I'm not sure. He wrote something simple with a few rhyming words. It was short and had few words. He shared it with me. I told him it was beautiful and that I liked it very much. I also told him that he was a poet. A poet? Was that the magic word Igor was missing? He was one of those students who came to class with a plan. At first, it was difficult for*

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[4] Fictitious names assigned to children.

everyone to think of a story, recipe, or song as a starting point for applying their computer skills. We didn't have a printer, but each student had their folder and had already learned how to create, name, and save files.

Subsequently, Igor started bringing in finished texts, loose sheets, and textbooks. Finally, he began to "tinker with his texts," improving them. It's important to note that most of the time, the students created new texts even when they had already written activities saved in their folders. He started revisiting his texts, adding images and changing words. He had accepted the title of poet that I, his teacher, had given him and started calling himself a writer. He began to see himself as important, which he was, though perhaps he had not realized it.

It's important to note that Igor was a leader. I don't know if this was true at school or elsewhere because he was always with Alice and not with others. However, in that space, he was relaxed, spoke clearly, and had a leadership stance. Now, he was starting to write a lot. Compared to his first day, when he had only written three sentences, he had evolved significantly. His texts were growing; they contained images. Occasionally, he didn't even want to play at the end of class. He wanted to write. He had become enchanted with words, from narratives to poems. He was developing his creative process and discovering the meaning of words and the world.

4. Contributions of THC to the analysis of the teaching case

The analysis of the teaching case is carried out around three axes, each of which is permeated by fundamental questions for THC. Initially, we examine the teaching mediation strategies employed in a scenario involving technological artifacts. Secondly, the analysis focuses on issues related to the development of thinking and oral language. Finally, we consider the development of written language facilitated by the activities proposed by the professor.

4.1 Paths of teacher mediation amid technological artifacts

The teaching and learning process is always challenging, raising questions about teaching practice and its relationship with effective learning and positive student development.

The teaching case study presented above illustrates an environment that was somewhat improvised from an infrastructural standpoint. Through this environment, children were able to access the digital world and take their first steps in using ICT. Based on her observations, the professor emphasized the importance of developing reading and writing skills using computers. In line with the recommendations of Almeida et al. (2017), the professor proposed differentiated activities that challenged the students and added meaning to the lesson rather than merely teaching technical and specific computer commands. One of the students stood out because he was motivated by the teacher's verbal encouragement and displayed behavior throughout the project that was considered surprising given his previous lack of interest in school activities.

We know that the social environment and the interactions that children have with it contribute significantly to their psychological organization. According to Vygotsky (2000), students gradually take control of their behavior while developing organically through their experiences and the resources available to them.

> The application of auxiliary means and the transition to mediating activity completely reconstruct the entire psychic operation, similar to how the application of tools modifies the natural activity of organs and the system of psychic functions. We refer to both of these as a whole with the term higher psychic function or higher behavior (VIGOTSKI, 1983, p.95).

The evidence provided by THC suggests that mediation plays an important role in enabling higher mental functions to reach greater levels of development and complexity. In the description, *"So, I decided to ask the children to write more than just their names, which was already quite difficult for some of th*em," we see the professor's intention behind the activity. She realized that the previous activity was too easy and that the students needed a greater challenge.

When faced with this new challenge, the children began to choose what they would write on the computer based on their interests and worldviews, with the professor's attentive presence always nearby. "I thought the idea was interesting, so I gave my full support. I asked Igor, *'What are you going to do*?' He replied, *'I'm going to write a poem' "* We observed that mediation did not happen in just one moment but continued through dialogue and encouragement given according to the students' responses and attitudes, as verified in the following excerpt:

> *"He started writing; maybe he had seen it in class that morning, I'm not sure. The fact is that he wrote something simple, with a few rhyming words, something short, with few words, and shared it with me. I told him it was beautiful, that I liked it very much, and that he was a poet."*

It is important to note that the assertive actions were mutual. As Mello (2020) writes, "Students need to develop intentionality about their need to learn, while professors need to expand their intentionality in proposing mediating activities" (p. 79). This occurred only because of the professor's constant observation.

At the end of the teaching case description, the professor concluded, "*Compared to the first day, when he only wrote three sentences, he has evolved significantly. His texts were longer and included images. Occasionally, he didn't even want to play at the end of class; he wanted to write.*" The report shows a change in behavior that made the professor feel the objectives had been achieved surprisingly. The professor's approach sparked interest, creativity, and self-esteem, contributing not only to cognitive development, but also to social development and the acquisition of oral and written language skills. "The most essential relationship underlying the higher structure is the special form of organization of the entire process, which is constructed thanks to the introduction of certain artificial stimuli into the situation that play the role of signs" (Vygotsky, 1983, p. 123).

If the environment can interfere so much with biological development, then there should be much greater concern that this interference considers the real learning and development needs of the student. In the context of teaching, we understand that the environment, tools, and mediation must be carefully planned. Clearly, it is necessary to align with the needs and context of the child, considering the student's cultural process.

4.2 Thought, Oral, and Written Language: Development and Social Use

Vygotsky (1983) points out that language appropriation and thought structuring occur through the assimilation of historically and socially structured codes and signs. The instruments and signs developed by humans serve to mediate the process of understanding reality and create conditions for transforming it. Instruments act on external activities, while signs act on internal activities.

Adults' dialogue with children expands their vocabulary and develops their thinking. According to Martins (2011), adults "*directly intervene in the intellectual act, re-qualifying the individual's perception, memory, attention, imagination, and feelings, shaping their own personal experience in the world*" (p. 142). In the case of the presented teaching method, we can observe that oral language permeated the entire classroom context. The children were free to express themselves and talk to each other, as shown in the following description: "*Every discovery was a celebration, like magic, an enchantment. They told everyone what they had found and taught them how they had achieved such results.*"

The professor proposed activities in a dialogical manner, encouraging children to use language to structure their ideas and carry out the activities. The following dialogue is an example of this:

> "Many questions arose from the proposal. 'Why don't you write stories?' *I asked the children. "But what would we do?" they asked immediately. "What kind of stories?" another child asked. "Why*

don't you write stories that you know that other professors or adults have told you?" I said to the students. This illustrates the importance of language as a central function of social relations and behavior (Vygotsky, 1983).

Language develops independently of thought, and thought develops independently of language. However, at a certain point, they converge, as Vygotsky (1983, p. 172) explains.

> At a certain point, these lines—the development of language and the development of thought, which have followed different paths—seem to meet, intersect, and then intercept each other. Language becomes intellectualized, joins with thought, and thought becomes verbalized, joins with language [...] on which the entire future destiny of the child's cultural behavior depends.

Based on the interactions established between the professor and the students, they began to structure their thinking to carry out the activities. "*The children became thoughtful; some began to type. Others thought a little without writing anything. 'Can there be fairies?' said one child. 'Of course there can!' I replied with a smile on my face. 'I'm going to write a song,' said a girl.*" In this way, we see that:

> Intercommunication with adults has this decisive meaning because the acquisition of a linguistic system involves the reorganization of all the child's mental processes. Words thus become an exceptional factor that shapes mental activity, perfecting the reflection of reality and creating new forms of attention, memory, imagination, thought, and action (LURIA; YUDOVICH, 1985, p. 11).

Thought is the conscious reflection of reality in terms of its characteristics, associations, and interactions. It is also the reflection of knowledge through the mediation and understanding of the correlations it establishes with the elements that constitute a system. Through our actions and interactions, thought modifies and is modified by the system.

According to the activities presented in the case study, we can briefly analyze oral and written languages and higher psychic functions (HPF) based on the development process demonstrated by Igor's behavior. "Igor and Alice were the oldest in class two. She was 11, and he was 12. They were regular students who never missed class and were always together. The students showed interest in following and carrying out the proposals of the computer course.

Development constitutes a dialectical unity of two essentially different lines. However, at a certain stage, the two systems intertwine—the biological and the historical, or the natural and the cultural. A child's introduction to culture is defined by the maturation of their cognitive abilities. If their brain and articulatory organs have developed normally, children master language at a certain stage of their biological development. At a higher stage of development, children learn to do decimal calculations and write; shortly after that, they learn basic arithmetic operations (Vygotsky, 1983).

In this context, cultural development is fundamental to creating structures that enable specific conditions and actions for development. To assess children from a cultural development perspective, one must consider the whole the context, time, adaptation, other ways of learning, and mediation. In other words, various factors must be assessed (Vygotsky, 1983). As reported, the professor provided an evaluative description of the student: "Compared to the first day when he only said three sentences, he has evolved a lot; his texts are improving."

According to Vygotsky, "Every function in the cultural development of the child appears twice, on two levels: first, on the social level, and then, on the psychological level. Initially, it appears among people as an interpsychic category, and then, within the child, as an intrapsychic category" (Vygotsky, 1983, p. 150). Thus, analyzing the professor's narrative and perceptions, as well as the presented context, reveals the student's potential for cultural appropriation, as seen in the following excerpt: "Maybe he saw it in class this morning. I'm not sure. The fact is that he wrote something simple with rhyming words, something short with few words, and shared it with me." In

the professor's perception, the student seems to have used previously experienced situations as a starting point to solve the problem.

Still in relation to the previous description, it is important to note that the cultural development of children goes beyond the assimilation of external habits unrelated to organic maturity. It is associated with the factor of adaptation to new conditions, the stable mastery of habits, and the time needed to overcome the established challenge (VIGOTSKI, 1983). We perceive the challenge proposed at that moment when we read the excerpt that says: "In the beginning, it was difficult for everyone to think of a story, a recipe, a song, anything as a starting point for applying their computer skills."

According to Vigotski (1983), these are:

> Primary writing symbols are already used to designate verbal expressions. Written language is understood through oral language, but this change is gradually diminishing; the intermediate link, which is oral language, disappears, and written language becomes directly symbolic, perceived in the same way as oral language (VIGOTSKI, 1983, p. 139).

Written language is the result of the development of higher psychic functions (HPF), such as attention, memory, and concentration, over a long period.

It is recommended that reading and writing be taught from the moment, a child is ready to learn and that the learning be meaningful with activities that stimulate a child's desire to learn.

School routine activities can provide opportunities for social reading and writing. Some possibilities for awakening the child's desire to learn to include reading the menu to find out what meal will be served, writing a note or letter to someone at school or family members, identifying which box has the name of the game they want to play written on it, and knowing the name of the helper of the day.

Regarding the teaching case, we observed that Igor began to return to the same activity, gradually transforming the text. He probably read the text at the beginning and end of each activity. He began to carry out the activity of his volition,

meaning it began to make sense to him. According to the report, "*He started going back to the texts, adding images and changing words. Occasionally, he didn't even want to play at the end of class; he wanted to write*." He was enchanted by the words, ranging from narratives to poems." In this context, writing and reading preceded the mastery of technological tools, which became a means of cultural development for students.

5. Final Considerations

According to the Historical-Cultural Theory, effective and systematic educational practices involve analyzing the environment and taking mediated actions that consider each student's uniqueness.

In line with the theoretical framework presented, we recognize the importance of mediation when using technology in a pedagogical setting about language, thinking, and writing development, as well as its impact on children's behavior. We observed the importance of the environment and varied external stimuli in promoting the exchange of experiences among professors, students, and students themselves.

We understand that both the professors and the students benefited from the teaching and learning process that occurred in the project. The description of the practice demonstrates that cultural development is structured in constructs that give professors greater control over and vision of their work, yielding great results for students.

We hope to contribute to reflections on pedagogical practices that integrate technology, studies on the cultural nature of psychological processes in learning activities and understanding the importance of professors' intentional mediation for learning and developing children's higher psychic functions.

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