



From classroom education to remote emergency education: transformations in a dialogical pedagogy proposal



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Abstract

This paper presents how a dialogical educational proposal, inspired by Freire's perspective, was introduced and adapted to the digital educational environment in distance teaching-learning. From Freire's pedagogy perspective, dialogue is one of the main assumptions for the teaching-learning activity. Therefore, we developed an online environment introducing a dialogical pedagogy, considering students' problems during the pandemic. Based on this proposition, we created a remote educational environment through the Discord platform. This platform has excellent potential to base an educational environment enabling students and teachers to engage in a dialogical activity. We investigated how the Discord platform contributes to enhancing dialogical pedagogy. Then, we introduced a dialogic activity in an initial training course for physics teachers in a discipline called "Non-Formal Education". Nineteen students participated in the activity developed throughout the discipline. We gathered data during the classes by recording student interactions on the platform system. The analysis was based on Activity Theory to identify the situations where their agency emerged and changed the activity and what role Discord played in this through the students' dialogue. The study explores Discord facilities to introduce the dialogical teaching methodology previously developed in the face-to-face format. Finally, we could identify that the students' voices emerged in the interactions, given the opportunity to express their ideas on their own terms and, fundamentally, be heard and considered by others. At last, students developed agency in the remote school activity, engaging productively in the required tasks and creating a community through the platform.

Keywords: CHAT, Freire, Discord, Pandemic, Non-formal Education

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cognition, interdisciplinarity, and complexity. He also developed practical educational activities aiming at science as an instrument to develop citizenship and democratic education for social and economic equity.



Introduction

The COVID-19 pandemic has radically transformed human activities, as social distancing has established itself as one of the main epidemiological controls. Thus, changing habits required the quick establishment of new actions and coordination between them. The established urgent social needs prevented many of these actions from being planned, accentuating and generating contradictions in the most diverse systems of social activities. In addition to the inherent urgent difficulties of the sanitary situation, the pandemic in Brazil emphasized the enormous socioeconomic inequality, drastically increasing the number of people in poverty (Neri, 2021). In recent years, the country has been experiencing a severe political and economic crisis, culminating in a government that systematically denied science as the proper way to deal with the sanitary crisis and changed not ideologically aligned ministers of health more than four times. (Aquino et al., 2020).

The working class was one of the populations most affected by the pandemic (IBGE, 2021; U.S. Department of Labor, 2020), especially with the precariousness of working conditions and labor relations (Matilla-Santander *et al.*, 2021). However, among workers' activities, the school was one of the most impacted, involving a considerable number of people. The relevance of school to the working class extends beyond the teaching-learning process since many workers' families rely on the school to care for their children throughout the working day.

Radical measures to preserve life and reduce contagion resulted in social distancing and the closing of schools worldwide (UNESCO, 2020). Across the planet, different solutions were developed during pandemics, emerging in different concrete cultural and historical conditions. Remote contacts, whether synchronous or asynchronous, defined a large portion of educational activities and, in any case, delimited the multimodality of face-to-face interactions (United Nations, 2020).

This dramatic situation required a forceful adaptation of educational activity, establishing itself in a remote emergency mode. The vast majority of face-to-face activities were quickly adapted to become distance activities. In order to overcome the challenges posed by the pandemic situation to the educational system, we developed a dialogic activity using the *Discord* platform. Beyond some specific and unique *Discord* functionalities, such as being a full-time open environment to users, one of the most significant advantages of using this platform is that it is popular among young students who already use it to participate in online team games. We explored the *Discord* environment tools, which allowed us to establish dialogic situations in a remote educational activity. In an initial Physics Teacher Education degree, we developed this activity within the discipline of non-formal education, in which the objective was to learn how to use scientific dissemination resources. We developed the intervention inspired by Freire's critical pedagogy and analyzed it from the Cultural Historical Activity Theory (CHAT) perspective identifying the benefits *Discord* brings to emerging dialogue and student autonomy development. The student's voice is a crucial component of the activity in its individual and social dimensions. Dialogue is central to the process, not just exchanging ideas but as an activity. This paper proposes a dialogic educational activity from a Freirean perspective, emphasizing the possibility of dialogic interactions among students in a self-regulated collectivities environment.

Theoretical framework

CHAT – Cultural Historical Activity Theory

Like any other human activity, educational activity is complex and constituted by myriad mediations. Thus, an adequate theoretical-methodological perspective is needed to analyze the various dimensions of this complex phenomenon. This is why we based our research on the Cultural Historical Activity Theory – CHAT, – considering the perspective of Leontyev (2009a,b) and Engeström (1987, 2001, 2010, 2020). We investigate an educational activity system taking the emergency remote dialogical teaching activities as the unit of analysis.

The origins of CHAT can be traced back to the core idea of mediation in its epistemological, ontological, and axiological dimensions, which were used to investigate subject-object relationships. Theoretical and methodological breakthroughs in CHAT were achieved by broadening the scope of its object, requiring support from other research fields (e.g., Psychology, Sociology, Education, and Administration), and introducing increasingly complex study objects. Thus, understanding more complex mediating systems of collective interactions around common goals was required to investigate the coordination of mediated human behaviors.

According to Leontyev's (2009a,b) approach, the coordination of collective actions toward a goal allows the emergence of hierarchical levels interpreted as an activity in a complex activity system. Furthermore, each coordinated action has specific goals and conditions - the operations - to be realized. Activities can be organized into activity systems - coordinated activities - which are constituted with several hierarchical levels mediated among themselves.

In addition to this hierarchical structure, human activity could be expressed through mediating fields that give unity to the subject-community-object triadic structure (Mattos, 2019). The mediating fields, which are constituents of and are constituted by the activity, have different properties and functions. Engeström (1987, 2001, 2010, 2020) proposed mediations by pairs, such as the subject-object dialectical pair, mediated by cultural tools, resuming the Vygotskian principles of cultural mediation (Daniels, 2015); the subject-community pair mediated by rules, which express the forms of regulation of social relations in the activity; and finally, the division of labor mediating the community-object pair, expressing the organizational forms of the activity's productive processes. Figure 1 shows the triangular scheme of Engeström's model.

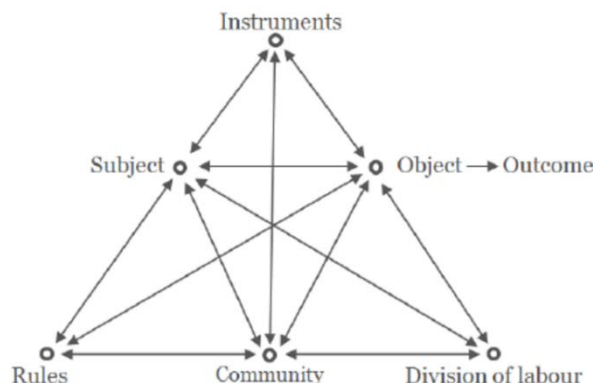


Figure 1: Activity System (Engeström, 1987)

Going further, Engeström (2001) proposed five principles that characterize human activity: it is object-directed; is multivocal; has contradiction as the motor of its dynamics; is historical, and; is expanding.

In addition, Sannino, Engeström, and Lemos (2016) introduced two more principles to characterize human activity: agency production and formative intervention. Those last principles are closely related to the “transformative stance” of the socio-political processes in which research is inserted (Stetsenko & Arievidtch, 2010), determining an axiological position concerning the situation in which the object is immersed.

Dialogue as activity

Dialogue is a central phenomenon in investigations of human interaction. This concept is polysemic and has different origins based on different assumptions about human nature and language (Matusov, 2009). Dialogue is a complex concept that requires clarification on the meaning that will be assumed. In this text, we take the idea that dialogue is a human activity characterized by the coordination of targeted actions. In this way, dialogue is a collective interactional process – an activity whose “object” is constituted in its development and in which both the interacting subjects and the mediating means are transformed (Wells, 2002). This ontological perspective of dialogue does not exclude its instrumental dimension, especially when we consider an activity as a complex dynamic system of activities. In this sense, the dialogue activity development responds to motives that could change within the transformation of the mediations between subjects and objects but, at the same time, including the instrumental demands of communication.

Particularly, the emancipating dialogical activity implies that subjects recognize the identity-alterity dialectical coupling – the recognition of ourselves within the others. This perspective highlights the political dimension of the dialogic activity, which indicates the need for a position and an opposition concerning the ways subjects, collectively, are being in the world. In this perspective, we are inspired by Paulo Freire’s work (e.g., 2005), which supports understanding the research and educational processes as an active social and political transformation unit.

For Freire, the concepts such as love, humility, faith, trust, hope, and critical thinking support dialogue and whose absence implies the absence of dialogicity. For the author, dialogue is a creative and liberating act; it is an act of loving the world (Freire, 2005). Thus, praxis is an onto-creative act in which human beings recreate the world permanently. To Freire (2016), faith is the power to make and remake, create and recreate, a faith in the human call to be more. When dialogue is based on those concepts, a relationship of trust is established between the subjects in dialogue. Trust is established by dialogue, whereas faith in humankind is an *a priori* requirement for dialogue (Freire, 2005).

From this dialogical perspective, educators cannot start a dialogue without hope, which “is rooted in men’s [human] incompleteness” (Freire, 2005, 91)¹. Finally, unlike naive thinking, dialogue “implies critical thinking” as a basis for “real education.” An education that can overcome the contradiction between teacher and student takes place in a situation where both address their act of cognition to the object mediating them (Freire, 2005).

The activity we present here is based on Freire’s perspective. The present, existential, and tangible situation, reflecting people’s aspirations, must be the starting point for organizing the program content for education or political action. We must communicate this existential, concrete, current condition to the people as an issue that challenges them and necessitates a response—not merely on the intellectual level but also on the level of action—using some fundamental contradictions (Freire, 2005).

¹ Criticism was made to the sexist language found in the “Pedagogy of the Oppressed.” However, Freire became aware of this kind of use and was concerned with being “careful to use the terms ‘women and men’ or ‘human beings’ in his writings and public presentations.” (Weiler, 1996, 366)

As part of the transformative action, we take dialogue as a mediating instrument and a constituent of the forms of being human - a dialogical activity. Dialogue activities have an instrumental dimension founded on coordinated actions produced under concrete conditions. Then, developing a dialogical activity to overcome contradictions expresses the transformation of dialogical instruments and all the mediations of this unit – rules and division of labor.

Human activities support and are supported by genres of ways-of-being-human that express historically stabilized forms of how subjects coordinate their actions. The subjects' ways of being are related to the division of labor historically developed and stabilized by the community those subjects belong. The subjects experience and develop coordinated activities through mediation with the different hierarchical levels of the activity system to which they belong. Human activity is history's substrate that continuously transforms itself, facing contradictions - the motors of the activities (Engeström, 2001). Thus, overcoming contradictions expresses the movement of activity and subjects' conscious awareness but simultaneously drives them into newly emerged contradiction.

The classroom has been a privileged place to investigate the dialogical forms that define and develop the teaching-learning processes in an educational activity. However, different models, approaches, and theoretical and methodological frameworks investigate dialogue in education (Cui & Teo, 2020; Howe & Abedin, 2013; Matusov, 2009; Wells, 2002). Without losing sight of dialogue as an activity and considering its instrumental dimension, we focus on the Freirean perspective, where dialogue aims to “transform social relations in the classroom, and to raise awareness about relations in society at large.” (Shor & Freire, 1987 p.11).

In this work, dialogic educational activity development is a process of complexifying the subject's conscious awareness. The ways-of-being-in-activity manifest a process of overcoming dichotomies between individual and collective actions through the dialectical constitution of sense and meaning. Then, overcoming this contradiction implies establishing dialogue as an expression of the movement of the subjects' consciousness (and ways-of-being), allowing the subjects' contradictory experiences to become expressed not as a problem-in-itself, but as problems-for-themselves whose responsibility to be solved by themselves (Camilo, 2015; Mattos, 2019).

Thus, we are interested in developing educational activities that increase students' conscious awareness of the contradictions they live (Camillo & Mattos, 2014), becoming “perturbative activities”² (Santiago, 2019; Santiago & Mattos, 2019). The dynamic of this activity demands the development of new mediations between actions. The complexification of mediations changes the activity and the subjects' conscious awareness by connecting their private lives to the more public, social, and political community life.

The following section presents the methodological design for developing perturbative educational activities in the emergency remote teaching mode.

“Discord”

We developed the remote educational activity on the *Discord*³ platform. This environment is a free online platform created in 2015 and designed for video gamer communities. Like other communication platforms, it is organized to let users communicate through channels by text, image, video, and voice. It

² In the mathematical sense, to perturb a physical system is to disturb it in a very controlled and usually small way to see what happens to it. However, when a complex system, such as an educational activity system, is disturbed, the implication is not always controlled, but as in the simplest case, the system no longer shows the behavior it displayed in its non-disturbed state.

³ Available at: <https://discord.com/> ; Access on: 17/04/2022

was developed to resolve the security problems of other platforms, such as Skype and Team Speak, and make interactions between players more user-friendly (Rioja, 2019).

Currently, it is one of the most used platforms worldwide and has become one of the leading platforms for online communities (Webb, 2018). In addition to the collective communication facilities, the platform offers features allowing individuals or groups to manage the environment, creating room for private conversations. This possibility allows individuals to configure virtual spaces differently from the community environment managers.

Virtual game companies use *Discord* by offering free games to attract potential customers and form communities around those games. *Discord* adoption has powerfully grown in recent years, from 45 million registered users to 130 million in 2019 (Kimball, 2018). Furthermore, the platform does not use advertisements in its chat application and is against selling user data to third parties (Greenberg, 2019).

Reports of investigations into the educational use of *Discord* are rare, but some attest to success among students (e.g., Mock, 2019). *Discord* platform is advantageous as many university students already know the environment (Konstantinou & Epps, 2017; Vladiou & Constantinescu, 2020), facilitating its use without requiring elaborate training to get started in the environment. However, the environment must be structured to enhance, in an educational situation, the dialogic interaction between teacher and students and among the students themselves.

Discord can record each group's chat texts and make them available to community members afterward, allowing students to resume discussions and organize their arguments. One of *Discord's* main advantages is that teachers do not have to manage students' access to groups, allowing them to join any group at any time and managing their involvement in any discussion of their or other groups in the classroom. Similarly, all class members' tasks and products can be shared, allowing them to participate in each group's various activities and conversations and giving them more agency.

Theoretic-Methodological design

CHAT is based on the dialectical perspective, in which we assume an onto-epistemological position considering the ways of knowing and the nature of the object as a unity (Rodrigues, Camillo & Mattos, 2014; Stetsenko, 2018). This unity can be expanded to an axio-onto-epistemological perspective when considering axiological (ethical) dimensions (Stetsenko, 2018; Mattos, 2019) of human activities. Thus, we approach the methodology in this section without losing sight of its constitutive relationships with the theoretical framework.

The teaching methodology was developed in a face-to-face educational mode based on the Freirean perspective and was modeled as an educational activity (Santiago, 2019; Santiago & Mattos, 2021), based on which we proposed our dialogical educational activity (Figure 2). The main objective of this activity was to complexify the subjects' conscious awareness by constructing mediations for students to be aware of the contradictions in which they were inserted. In this case, this contradiction was studying on a University campus located inside an oil refinery.

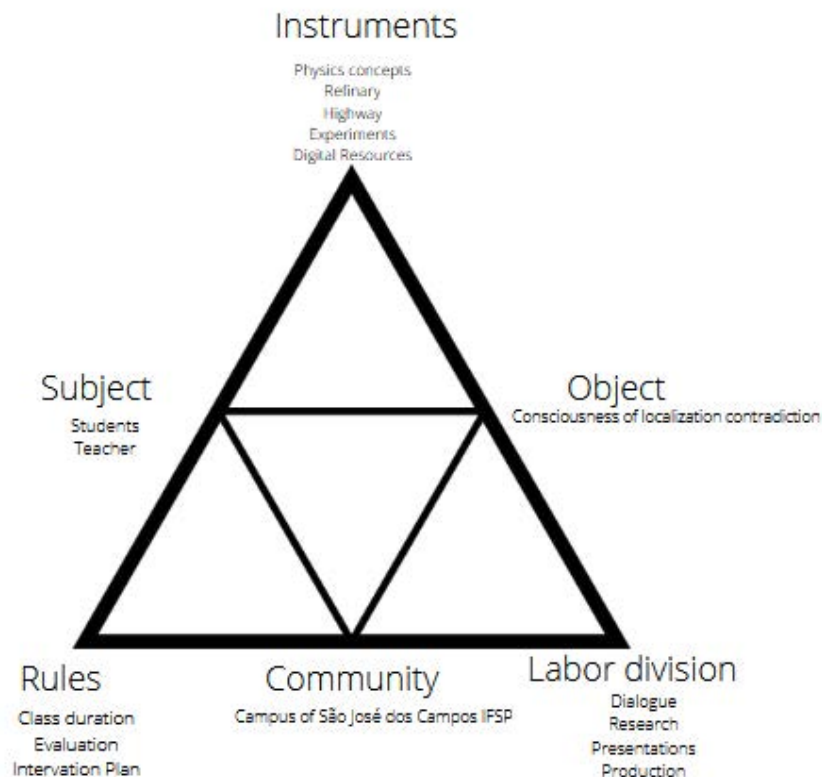


Figure 2: Dialogical Activity during a face-to-face situation (Santiago, 2019)

As a result, the activity proposed by Santiago (2018) was developed during a semester in the basic physics course in an initial chemistry teacher formation degree. The activity involved the subjects (students and teachers) mediated with an object (to be aware of the contradiction of the University's location) through physical concepts, experiments, digital tools, and more immediate concrete instruments like the highway (that gives access to the campus) and the refinery. These mediators were used as material elements that contextualized teaching and learning. Beyond the mediations of the instruments, the community (University campus users) also mediates the interaction of the subjects and object. The subject-object mediation through the community is more complex since the school rules (class duration, evaluation, class planning, etc.) mediate the coexistence of the subject and community, and the division of labor mediates the community and object since community members have different responsibilities with the object production.

We modified the activity by altering it. We introduced actions that considered the concrete circumstances of the pandemic and the emergency remote teaching mode. Then the teacher developed the activity's first five steps, usually among students and the university community (table 1). Beyond that, we designed an activity to be developed in the course "Non-Formal Education" in a physics teacher education course at a Brazilian Federal University.

To deal with the remote teaching mode, the teacher used Discord to create a server with nine virtual spaces: five were text channels, with one dedicated exclusively to the discussion forum during classes (discussion-forum) since some students did not have a microphone to participate through voice; three other chat channels to group members talk to each other through text (discussion-group); and, finally, a text channel in which participants could post messages for the entire room (messages). The teacher also

created four voice channels, three of them for vocal interaction among students from each of the three smaller groups (Group) and one for verbal interactions by all students (Classroom).

Voice channels allow users to open webcams and microphones and share the screen, making the interface of these channels similar to various meeting applications such as Zoom, Teams, or Meet. However, an essential difference between these other environments to Discord is that the teacher does not need to manage the environment while the students are using it. Students can log into the server at any time, so the environment is not only used for classes but as a meeting point for students to discuss and carry out other educational or entertainment activities. The server provides the basis for students' autonomy, serving as a concrete ground for establishing a community that feeds itself independently of the teacher.

Activity design: from the thematic preparation to the critical teaching

The course's main objective is to understand the importance of scientific dissemination to establish a connection between the production of scientific knowledge and society. The way scientific information is disseminated, the languages used to disseminate science, the relationships between science and society, and the importance of communicating science were themes developed in previous classes before the intervention.

A total of 19 students aged around 22 years attended the course. They were in the second year of a 3-year course degree in physics teacher education. They already had specific basic physics disciplines (theoretical and experimental physics) and some directed educational disciplines, achieving 80% of the degree curriculum. This allowed the use and development of various mediating instruments to understand scientific dissemination's role in forming critical students and society. Table 1 introduces a scheme of the online activity with the structure of seven stages of the activity.

Table 1: Activity design

Stage	responsible	action	Description
1	teacher	thematic survey (substituted by teacher hypothesis)	the teacher investigated and established themes related to the contradictions experienced by students in their most immediate daily life.
2	teacher	community vision	the teacher investigated news media as the dominant social vision to develop a thematic universe connected to the hypothetical theme proposed in the first stage.
3	teacher	categorization of speeches	the teacher chooses the media they will analyze.
4	teacher	content linking	the teacher chooses the content that will be analyzed from the media selected.
5	teacher	critical approach planning	the teacher plans the meetings and contents
6	students and teacher	thematic confirmation	the students identify the theme and propose actions to investigate.
6.1	Students	Meeting	the teacher presented two teachers' interviews, one against and the other in favor of reopening schools, then students searched and selected the texts and contents on this theme.

7	Students and teacher	implementation of the critical pedagogy	the students intervened with the discipline concepts of science communication to solve the misinformation about reopening schools.
7.1	Students	Meeting	to research articles and government materials about COVID-19
7.2	Students	Meeting	to choose the media of communication and start to make it.
7.3	Students	Meeting	to finalize the project and disseminate the banner on social media

Santiago (2018) proposed that the activity starts with Stage 1 (*the thematic survey*). In this stage, the purpose was to establish a thematic universe related to the contradictions experienced by students in their most immediate daily life since the students are the visceral subjects of the discipline. The Step 1 survey was usually carried out with students of the earlier semester (Santiago & Mattos, 2021), but rather than conducting an extensive survey with the students, we hypothesized the central theme of the tensions the students were experiencing with the demands of returning to face-to-face classes.

The hypothesis was based on the situation Brazil was experiencing as one of the worst pandemic scenarios in the world and the huge pressure on elementary schools to return to normality emanating from some segments of society. This situation became much tenser for the teacher training course students, who would have to return face-to-face to university and complete their internships in public high schools. Therefore, there was a tense atmosphere with great insecurity and misinformation since the worst fear of the hasty return to the classroom materialized with the fast COVID-19 infection of several education workers⁴. Beyond that, the media propaganda voiced the principal contradiction experienced by the students. On the one hand, a part of society agreed with the scientific view in favor of social isolation and a safe return to economic activity; on the other hand, government propaganda downplayed the severity of the pandemic and supported herd immunity by weakening restrictive measures, such as mask use. In Brazil, at this moment, the dichotomy between “affirmationists” and “negationists” of science (Mattos et al., 2021) seems to have become a topic of tension and conflict for society as a whole and particularly for students, especially concerning the resumption of face-to-face educational activities at schools, reinforcing the view of the “return to classroom” thematic.

Stage 2 (*the community vision*) usually develops with the community (university students, teachers, staff, and parents) and is carried out based on the thematic choice made in the first stage, with the survey verifying how the community sees the themes. We adapted those stages to the pandemic conditions, including a search on the news media where the theme “return to normal life” was a fierce point of contention among health and educational professionals, economists, families, and students. One clear manifestation of the social tension focus was the dispute over narratives about COVID-19, characterized by the transmission of contradictory news about schools’ reopening in the most diverse digital and TV media broadcasts. On the one hand, the position of health professionals who defended the return to schools stands out, stating that the return to face-to-face classes would be safe based on some safety protocols. On the other hand, the experience of the majority of students in Brazilian public schools corroborates the press portal’s information about the sanitary precariousness in most Brazilian public schools.

The course teacher simultaneously developed Stage 3 (*categorization of speeches*) and Stage 4 (*linking content*). Once the theme and the community’s vision were chosen, the teacher selected the

⁴Research on death due to COVID-19 in São Paulo city in 2021 revealed a considerable rise in fatalities among education workers compared to 2020. The return to face-to-face schooling at the end of 2020 was one of the factors mentioned (Klintonowitz et al., 2021).

discourses from social media (social networks) and the traditional press (newspapers and television) to cast the generator theme and connect it to the curricular content later. Then, he chose the debate on reopening schools and linked it to their relationship with scientific communication. The contents related to the theme were: limits and potentialities of scientific dissemination; relations between science and technology and their implications for society; the role of scientific knowledge in society; sources of information and ways to obtain information relevant to the knowledge of science; codes, genres, and languages of scientific dissemination.

These steps are inspired by the Freirean hypothesis that problematization and contextualization help mediate students' lives and the contradictions they are experiencing. Then, the dialogical dynamics with and among students allowed them to identify the contradictory discursive examples among media advertising on COVID-19 safety measures.

During Stage 5 (*critical approach planning*), the teacher planned the meetings that would be developed in Stages 6 and 7. Meeting 6.1 would be held in Stage 6, where students should choose and discuss one of two articles presenting two teachers' interviews about reopening schools to face-to-face interactions. The purpose of selecting those two articles was to show that there was no agreement among educators at the time over the reopening of schools. The teacher planned the meetings on Stage 7 for students (7.1) to research articles and government material about COVID-19; (7.2) to choose the media of the communication and start to produce a banner presenting the discussion; and (7.3) to finalize the project and disseminate the banner on social media.

In Stage 6 - *thematic confirmation*, the theme presented - reopening of schools, as evidenced in steps 2, 3, and 4, needed to be validated as being of interest to students. Thus, meeting 6.1 started with discussing reopening schools before presenting the article with interviews of the two different teachers' positions. The teacher mediated this debate, guiding it by questioning what problems students face with continuing their remote emergency education studies. Based on this question, the teacher expected that the debate would reach the issue of reopening schools since they are living with this very problem in their own quotidian. Then the course teacher presented the articles arguing against and in favor of reopening schools. One article presents one Brazilian teacher's position against reopening schools. This teacher works at a school in the outlying ghettos of São Paulo city (capital of the state of São Paulo), whose population is 11.9 million and has a high COVID-19 contagion rate with dozens of daily deaths. Another article presents the position of another teacher who favored school reopening. This teacher taught at a school in Elias Fausto city (in a country county of São Paulo state), with a population of 18,000 inhabitants, and has accumulated only about two dozen deaths since the beginning of the pandemic.

The other three scheduled meetings were held in Stage 7 - *implementation of critical pedagogy*. We (the researchers) expected that students critically develop the contents related to the problem of reopening schools through scientific dissemination. Then, they could mediate their experience with the social contradictions they were immersed in. In the meeting (7.1), the students should survey scientific articles, reports, official documents, and other materials supporting each of the two points of view; in (7.2), the students should develop a scientific dissemination project based on the material collected, select the digital media to synthesize and decide the target audience, and, finally, (7.3) they should be committed to producing their project.

Method: collecting data from Discord

Steps six and seven, developed with the students, took place on the Discord platform. The platform allows recording text, audio, and video and students' individual and collective tasks. In Discord, students can be divided into small groups, simulating typical face-to-face classroom organizations for discussions,

and each group's chat texts can be recorded, allowing community members later access. Furthermore, this allows students to resume discussions and organize their arguments. Beyond that, teachers do not need to manage access to groups, allowing students to join any group at any time. Likewise, all class members' tasks can be shared, enabling their engagement in each group's different tasks and discussions, creating opportunities for their agency to emerge.

We examined four meetings (6.1, 7.1, 7.2, and 7.3) in which students participated and focused on the contributions the Discord platform made to the students' dialogue throughout the course. We registered all steps in a field notebook, and those with student participation were recorded through the Discord platform, allowing us to analyze the dialogical relationships established over the meetings among students and with the teacher. The material available for analysis were transcriptions of the video-recorded dialogues by chat and voice, the movement of students among the groups, the records of their interactions and actions in the Discord environment, the products students developed in their activities, and the WhatsApp message between students and teacher.

Researchers frequently look at participants' relationships to investigate social interaction in online communities. There are many ways to examine social support and interaction in online groups, both in quantity and variety. This variation frequently results in misunderstanding regarding the best method to employ in any specific circumstance. Here, the emphasis is on examining language, communication patterns, and the content of messages in online communities messages (Herring, 2004; Pfeil and Zaphrieis, 2010)

We made the qualitative content analysis considering the contradictions and conflict of motives (Sannino, 2015) between face-to-face and online classes interactions concerning: whether to open schools at that moment or not; the lack of face-to-face social interaction and communication in the online environment; and the actions and utterances that indicated the presence of students' intent and resolve to overcome contradictions. To frame those points on Discord's contributions to students' dialogical and agency attitudes, we use the CHAT model to consider how the platform instruments mediated and facilitated dialogue and students' agency through the activity. Beyond those topics, we also looked for the use of science dissemination criteria taught during the course, such as we pointed out earlier: the limits and potentialities of scientific dissemination; the relations between science and technology and their implications for society; the role of scientific knowledge in society; the sources of information and ways to obtain information relevant to the knowledge of science; codes, genres, and languages of scientific dissemination.

Discussion: analysis and results

In this section, we discuss the analysis of the events from the perspective of the CHAT model. We present the activity centered on the actions, dialogues, and products realized by the students, particularly those taken during the meetings.

The analysis of each meeting begins descriptively to situate the context of the dialogue's expansion and the students' agency. In addition, we exemplify the analyses with excerpts from the transcripts of the exchanges and verbal productions recorded throughout the activity (voice/Classroom, Discussion Forum, WhatsApp messages) to base the results pointed out throughout the analysis. In the excerpts, we identify the students by a letter to preserve their anonymity.

The teacher used the Classroom voice channel to begin meeting 1, drawing attention to the pandemic and how it affected the dynamics of our social interactions. Based on the contextualization established throughout the introduction, the teacher starts to survey the problems students experienced,

asking them to express themselves regarding the following question: “what are the difficulties you are facing as students of this institution at this moment?” (Teacher, voice/Classroom). Students begin to express themselves through the text channel (Discussion forum) by describing their own pandemic difficulties. However, as they become aware of the similarity of their challenges, they initiate dialogues negotiating their different perspectives on common problems. This activity ended up converging towards a consensus around two problems that, according to the students, were the most acute they experienced at that time.

One of the most pressing concerns mentioned was a shift in time management when confronted with changes in daily activities that needed students to adapt their actions because social distancing required reorganizing and coordinating daily and school activities. The home dynamics were one of the most affected, particularly by low-income students, since various domestic responsibilities traditionally undertaken by other family members began to be shared, causing individuals to carry out more household activities than normal, in addition to work and study. This situation emerges in hopelessness:

Student G: “I don’t know if this is more a problem of mine either, but I also feel a kind of despair seeing some students having problems that not even F [a student] mentioned. In my classroom, some students come to class and need to lock the microphone to do housework, food, taking care of their siblings and family and end up not being able to perform, and even so, there are teachers who are not taking this into account, and it is very sad.” (Discussion forum)

This “limit-situation”⁵ (Freire, 2005, 99) students faced could be understood as a conflict of motives (Sannino, 2015) since the student was in a double activity, dealing with different necessities. Another important aspect the students brought up was the lack of face-to-face social interaction and communication with colleagues and friends during emergency remote teaching.

Student G: “I think it’s been really sad having to do everything online without looking into the eyes of other students and teachers. I met many students in the course because of some situations, and because I took this subject, and if I see people on [university] campus, I won’t even know who is who ...” (Discussion forum)

Student G could synthesize the discussions by presenting the collective problem more fluently. The teacher mediated the debate based on the students’ comments, aiming to relate them to the theme of school re-openings. The teacher guided the dialogic flow between the students via the text channel (Discussion forum). In contrast to what happens in more traditional classes, when the topic gets more significant to the students, it is possible to identify students who open their mics, usually closed, and continue the textual argument by voice. This activity’s instrument allowed students to elaborate more quickly on relevant negotiations about the gravity and commonality of the difficulties they were experiencing from their particular perspectives. The instrument within the pedagogical dynamic opened new possibilities for the emergence of students’ agency, overcoming face-to-face classroom inhibition experienced by some students keeping them from voicing their ideas, which lowers their engagement (Pickhardt & Wiley, 2013; Croxton, 2014). The ecology of Freire’s online activity appears to have widened the scope of debate, allowing a more significant number of students to participate in the discussion. Despite many students’ material constraints and connection difficulties, there were no issues accessing the Discord environment or using equipment such as the webcam and microphone in this exercise.

⁵ The “limit-situations” are not “the impassable boundaries where possibilities end, but the real boundaries where all possibilities begin; they are not “the frontier which separates being from nothingness, but the frontier which separates being from nothingness but the frontier which separates being from being more.” (Pinto, 1960, as cited in Freire, 2005, 99).

Initially centered on students' school difficulties, the conversation moved on to the problem of returning to school, which brought up the topic of school re-openings. From then on, students began to connect their own issues and the problem of restarting schools. The discussion was established both through the voice channel (Classroom channel) and the text channel (Classroom forum), as we identified them in the following excerpts:

Teacher: Are you following the progress [pandemic situation] and saying "if we could have hope for getting out of this period that is hindering all our activities," as you have reported here?

Student L: So... teacher, from what I am following... the São Paulo vaccination plan... I believe that they [politicians] will not wait for students to be vaccinated, which is a problem. Due to the situation in the state, when all teachers are vaccinated, they will want to return to classes, which already worries me because some students are in at-risk groups. Now... how will this be done... I don't know... (Teacher and Student L, Voice on Classroom channel)

Student A: The university... I think it's totally unfeasible to go back because the contamination isn't just there. Everyone takes at least one subway line... there's a school in front of my home... I can hear the kids screaming.

Student G: I agree, A [student]. Even if we manage to keep the distance in the room, the way to get there... crowded subway, crowded bus, some inconsequential going to party with the crowd. (Discussion Forum)

Taking advantage of the discussion on returning to school, the teacher summarized the discussion and introduced the articles he selected about the teachers' positions on the theme. Following the reading, a debate among the students focused on their concerns about returning to face-to-face sessions. However, many expressed the desire and need to return to face-to-face activities, as shown in the following excerpt:

Teacher: I saw parents who are dying to send their children to school. As if the school were a child's deposit, I still heard the justification that the child could no longer be held at home.

Student G: I think returning now is a bad idea when we are at the stage of starting vaccinations. It is capable of increasing the spread and... doubling the work needed to immunize the population.

Student L: The liberal discourse normalizing the pandemic and the genocide is working just fine.

Student V: I think it gives a somewhat opinionated tone to a public health issue

Student F: In fact, we had very compelling examples of combating the pandemic... at this point, it's hardly a matter of opinion anymore. But the economic issue speaks louder to the authorities (Discussion Forum)

The ensuing heated debate necessitated the sharing and validating of information to support the various points of view. Although students were more confident about the sources of information they were basing their claims on, the need for reliable sources became evident. At this point, the teacher suggests students research reliable sources, determining reliability criteria, a topic already addressed throughout the course.

Thus, students began seeking information, researching and analyzing the risks and benefits of reopening schools. They developed the investigation during the class and placed the information they found in a Discord text channel (Messages) that served as a collective repository so everyone could access and check the sources. Following the class, the teacher created a wiki page for students to submit their results and a summary for everyone to comment on during the week. The goal of this action was to discuss their findings in Discord. However, the students decided to use a forum on Moodle, modifying the tools used to

carry out the activity. At last, meeting 2 became a review in the Moodle forum of what they had produced until this moment.

At meeting 3, the students organized the results of their research by themes and positions about school reopening, considering the benefits and risks of returning to school. The teacher suggested that each student lead a conversation about what drew their attention the most. The new mediations brought with the further information enhanced the dialogic interaction, allowing students to express their opinions better and elaborate on better ways to disseminate the selected information. In the following excerpt, we can identify some of the topics raised by students to highlight difficulties linked to school reopening, which are already based on their study.

Student G2: Social/economic disparities between different regions of Brazil... and the experiences with the reopening in places... like Brasília [Brazil's capital].

Student L: The lack of an awareness-raising campaign about going back to school... at all levels of government" (Discussion forum)

Students discussed the appropriate method for disseminating the findings of their research:

Student L2: Does any social network have easy dissemination???

Student G2: Instagram, Facebook...

Student G: Look, I tried the "Medium," and it was a reasonably good platform to post an article.

Student L: "Zap, zap, chain" [a WhatsApp group]! The good guys only get information there these days" (Discussion forum)

Finally, students agreed to produce an infographic that would be distributed via the WhatsApp application, outlining the pros and cons of returning to face-to-face classes. Students organized themselves into three groups. One was responsible for gathering positive information for the return to presential classes, another for organizing the contrary information, and a third for designing the infographic. The students requested that the teacher set up voice (Groups 1, 2, and 3) and text (Discussion-Groups 1, 2, and 3) channels so they could develop the activities independently.

During the activity, the dialogue among students improved since they moved among groups negotiating information organization, forms of dissemination, and infographic design. In part, this movement reproduces face-to-face classroom activity, in which students working in groups could circulate, talk and sit with members of other groups without needing teacher permission or mediation.

The teacher planned for students to finish the infographic in a single meeting, but they could not accomplish it due to the vast quantity of material chosen and the design challenges. As a result, the students organized another meeting independently of the teacher, using Discord potentiality to form self-organized and autonomous communities, accessing the server even when the teacher was not online. This instrument creates a new circumstance that rarely arises in a face-to-face classroom, where most debates occur in the school indoors, leaving few actions to be taken outside of it. The platform allows organizing a community whose members' access is independent of third parties; students self-organize to meet without the teacher's consent. They can see if a colleague is online, allowing them to engage whenever they want without scheduling anything in advance.

This movement must be seen in the context of dialogue as an activity. The students use the activity instruments, interacting quickly at any time of the day, negotiating meanings, and exchanging information through their virtual community, which has an availability distinct from the face-to-face situation. They

become faster-meaning negotiators, changing from group to group and expressing themselves with great versatility.

Finally, students shared the infographic (Figure 3) via social media platforms, primarily *WhatsApp*, to which most had access. Unfortunately, due to the difficulty of mapping information exchanged via *WhatsApp*, there are no results on the scope of diffusion.



Figure 3: Infographic produced by students (text in Portuguese)⁶.

The teacher planned the remote activity in the last three meetings. The activity's object was "The reopening of schools during the pandemic," and the students and the teacher were its subjects. Subject and object were mediated by: *Discord*, the COVID-19 pandemic, scientific dissemination and

⁶ The red and greens titles: "The pandemic and the return to school; the subtitles inside the boxes are: (red boxes) "significant increase in cases"; "lack of infrastructure"; "socioeconomic disparities"; "exclusion"; "sources"; (green boxes): "recovering the time lost"; "help to families"; "minimize damage caused to students"; "accessibility"; and "sources".

communication, and dialogue; all of them served as mediating instruments. The activity's community was comprised of the people from the university. The rules of online meetings and intervention planning mediated the Subject and the Community. The division of labor mediates the community and the object of the activity. Teacher and students used their technological skills to develop the interactions, research, and presentations.

Figure 4 shows the activity and its elements. Represents how the subject, the object, and the community are mediated through their mediating instruments, rules, and division of labor. This analysis was carried out after the application of the meetings.

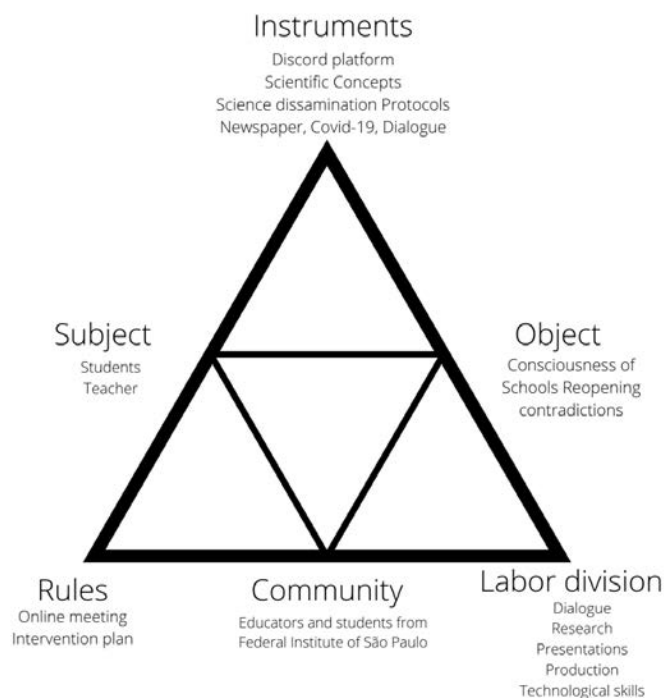


Figure 4: Arrangement of Dialogical activity on Discord. (Authors)

Conclusion

During the COVID-19 pandemic period, the development of educational activity was characterized by the need for quick adaptations to a form of emergency remote education. This type of teaching was a poor copy of distance education due to the improvisations made worldwide since schools were not prepared to quickly reorganize the teaching-learning process in this educational mode.

The disaster was even worse in countries like Brazil, where most schools and the low-income population have limited budgets to buy internet services. In addition to technical and financial limitations, the teaching models implemented reinforced pre-existing banking education trends, in which the students' voices almost wholly disappeared and further extinguished dialogical activities (Lago et al., 2021).

Although teaching conditions in public universities are better than in public primary and high schools, the shift to emergency remote teaching violently affected teaching modes. The selection of students who can access higher education in Brazil magnifies economic disparities. Thus, the students that

participated in our project had better access to the internet than the vast majority of Brazilian public education students.

Our project presents a proposal for dialogic educational activity from a Freirean perspective and highlights the potential to foster dialogic interactions amongst students in different self-regulated collectivities. The student's voice is an essential constituent of the activity, not only in its individual but also in its collective dimension. Dialogue is at the heart of the methodology, not as a mere exchange of ideas but as an activity.

Thus, we could identify that the students' voices emerged in the interactions given the opportunity to write and speak, express their ideas on their own terms, and, mainly, be heard and considered by others (Segal et al., 2017). This means that the dialogic movement of the activity stirred the students' conscious awareness throughout the new mediations established between the specific knowledge and the hierarchy of meaningful problems. Moreover, they linked their more immediate problems with the socio-political problems they were immersed in.

We used the *Discord* platform as a teaching environment, which allows for organizing the educational activity and facilitating students' agentive and autonomous movement among groups. This facility added to the involvement with the central theme of the activity – to return or not to face-to-face classes, and led students to engage productively, enhancing dialogic processes through text and voice channels and also the joint production throughout the course.

As a result, we are convinced that using *Discord* enabled students to self-organize, increasing their agency in this activity and resulting in a new division of labor in which students distributed new tasks among themselves based on their technological abilities. Students proposed meetings without the teacher's presence to finish their projects and produced texts collaboratively, synchronously, and asynchronously. Such movement was uncommon in face-to-face classes, implying that the technological tool supplied instruments for the subjects' involvement with one another and, more importantly, with the activity.

We understand that combining different factors allowed the successful and productive engagement and development of students' conscious awareness. We summarize the most prominent factors as follows:

- (i) the prior familiarity that most students had with the *Discord* platform since it was used as an environment for the gamers' community, allowing students to use the environment independently of the teacher autonomously. This situation gives room to students' agency, allowing them to move between groups, share their productions, and self-organize their own meetings since they have unrestricted access to *Discord* during the course, which is not possible on other platforms. The emergence of students' agency in this digital context could be included in the "domains to student agency in digital contexts," where it is possible to give room to the agentic possibilities, a "digital self-representation," the autonomous data uses, an increasing "digital sociality," and an expanded consciousness of the digital temporality (Stenal, 2021, p.60);
- (ii) the Freirean-inspired educational dialogic activity allowed the selection and thematic organization based on the problems experienced by students during the pandemic and its hybridization with the specific contents of the course. Students dealt with the problem of whether or not to return to the face-to-face classes based on the theme discussed in class, such as the limits and potential of scientific dissemination depending on the discursive genre used for dissemination, the relations between science and technology, the role of scientific knowledge in society, and the problems of relevance and reliability of information sources considering the scientific knowledge.
- (iii) the organization of students' actions in the collective construction of products mediated their most immediate problems with some complex and collective problems; they mediated the relationship between their particular and collective educational needs.

The dialogical activity enhances students' autonomy as they become aware that their voice has a place in the process of constructing the activity's products and becoming authors and producers. The established agency allows students to follow paths not always expected by the teacher and exercises their autonomy to produce what is meaningful to them.

Finally, the proposed dialogic activity establishes dialogue in its instrumental and ontological dimensions, in the sense that students solve a more immediate problem and develop a more complex conscious awareness of the relationships between their lives and the lives of others. Here, the Freirean proposition of the humans' ontological call for becoming more fully human is identified when we face the necessity to overcome the limit-situations, such as the one pandemic imposed on us. A limit-situation in which we should overcome hopelessness by taking hope and agency as a ground to create and face *untested feasibility* (Freire, 2005) and bonding us in a collective, purposeful, and transformational activity.

The activity we presented in this work was designed to be a formative intervention that expands its boundaries, perturbing subjects' other life activities. This objective means to create a mediation that could lead subjects to become consciously aware of the relationship between systemic social contradictions and their own particular problems. Reframing the tension between particular and general is dealing with the reopening of schools, not just an individual and particular problem but a socio-political problem that should be solved agentively and collectively.

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