

# Interaction and Collaboration in Training Digital Pedagogical Mediator

## *A Interação e a Colaboração na Formação de Mediadores Pedagógicos Digitais*

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### Abstract

Our research was developed in one of the classes of the on-line course, as a result of a partnership between the Coordination for the Improvement of Higher Education Personnel (CAPES), the Open University of Portugal (UAB) and the State University of São Paulo (UNESP), for the training of 1500 students. This study presents the experience of one of the authors in the training course of digital pedagogical mediators for distance education, emphasizing the importance of interaction and collaborative work in the construction of knowledge. Engeström's (1994) concept of expansive learning and SCHLÜNZEN's (2015) Constructive, Contextualized, and Meaningful (CCS) approach form the basis of this study. A quantitative and qualitative methodological approach was adopted through content analysis by Bardin (2009), from which observations are made on the nature of interaction in proposed activities in the virtual learning environment (VLE) and in a group using the WhatsApp application. We can affirm that communication processes were fundamental to form the mediator teacher, an essential condition for promoting interaction and collaborative work.

**Keywords:** Interaction. Collaboration. Training of pedagogical mediators. Distance education.



Received 12/ 31/ 2019  
 Accepted 03/ 25/ 2020  
 Published 04/ 01/ 2020

### HOW TO CITE THIS ARTICLE

**ABNT:** CZESZAK, W.A.A.C. *et al.* A Interação e a Colaboração na Formação de Mediadores Pedagógicos Digitais. **EaD em Foco**, V10, e941. 2020.  
 doi: <https://doi.org/10.18264/eadf.v10i1.941>

## A Interação e a Colaboração na Formação de Mediadores Pedagógicos Digitais

### Resumo

*Nossa pesquisa se desenvolveu em uma das turmas do curso on-line, fruto de uma parceria entre a Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), a Universidade Aberta de Portugal (UAb) e a Universidade Estadual Paulista (UNESP), para a formação de 1500 cursistas. Este estudo apresenta a experiência de uma das autoras no curso de formação de mediadores pedagógicos digitais para educação a distância, enfatizando a importância da interação e do trabalho colaborativo na construção do conhecimento. O conceito de aprendizagem expansiva de Engeström (1994) e a abordagem Construcionista, Contextualizada e Significativa (CCS) de SCHLÜNZEN (2015) compõem a base deste estudo. Foi adotada uma abordagem metodológica quanti-qualitativa, a análise de conteúdo realizada por Bardin (2009), a partir da qual são realizadas observações sobre a natureza da interação em atividades propostas no ambiente virtual de aprendizagem (AVA) e em um grupo utilizando o aplicativo WhatsApp. Podemos afirmar que os processos de comunicação foram fundamentais para formar o professor mediador, condição essencial para que seja promovida a interação e o trabalho colaborativo.*

**Palavras-chave:** Interação. Colaboração. Formação de mediadores pedagógicos. EaD.

## Introduction

The pedagogical training of the professional who works in online courses demonstrates an increasing importance with regard to the various competences and skills, which go beyond those related to the use of technological resources, emphasizing the ability to work collaboratively, interaction and mediation (SILVA, 2010). Our experience in tutoring has demonstrated that there is considerable potential for building knowledge in collaborative learning and through the technological resources available in virtual learning environments (VLE) to promote interaction (SILVA, 2010) and the reduction of transactional distance (MOORE, 2002).

In the context of the training course for digital pedagogical mediators for distance education, offered by the partnership between the Promotion Center for Digital, School and Social Inclusion (CPIDES) of the State University of São Paulo (Unesp, Brazil) and the Open University (UAb, Portugal), it was observed that the interactions between tutors and course participants (spontaneous or planned) develop through interactive convergence to mediate the participants' initiatives, in situations characterized as collaborative work within the Constructionist, Contextualized and Meaningful (CCS) approach (SCHLÜNZEN, 2015). In this approach, from the planning of the proposed activity of the discipline with CCS approach, the course participant is involved in the construction of something real, within a proper and familiar context, with a meaning for his professional performance and life experience.

This report highlights the organization of collaborative work, through communication tools and the interaction processes that facilitate it, analyzing and identifying elements from this mediation that facilitate collaborative work. The importance of this analysis is to identify pedagogical actions to promote knowledge management with specific groups, stimulating collaboration and teaching how to carry it out.

## 1. Theoretical foundation

Working collaboratively is not a simple and an intuitive task (CORTELAZZO, 2013; SILVA, 2010). Such a strategy requires recognizing that the importance of interaction has been increasingly discussed in educational programs and projects, being considered as a basic educational principle (SCHNITMAN, 2011). Interaction and collaborative work in education have gained significant prominence, especially in in-service training, regardless of the teaching modality. The characteristics of collaborative work are pointed out because they promote the construction of reflective knowledge (SILVA, 2010), in addition to representing practices present in social and professional life, including aspects such as constructive coexistence between different points of view, awareness and respect for diversity and construction of trust spaces. However, for the success of the educational experience, it is essential to highlight the role of the pedagogical mediator so that collaborative work develops in an organized and productive way (SCHNITMAN, 2011).

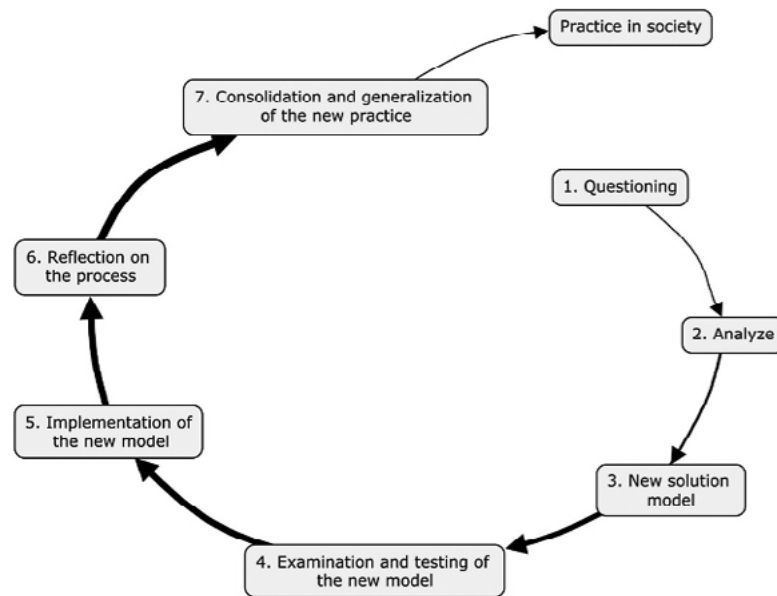
This way, the mechanisms that form collaborative work, such as sharing experiences from the most diverse contexts and making decisions, can add value to the discussion and suggest elements that result in learning. "Collaborative work makes it possible to rescue values such as sharing and solidarity - which have been lost along the way trodden by our extremely competitive and individualistic society." (DAMIANI, 2008, p. 225). The author also states that there are psychological processes involved in collaborative activity, based on socio-historical psychology, pointing to beneficial effects resulting from this practice to the individuals involved, such as stimulating creativity, engagement, emotional intelligence development, satisfaction in feeling done part of a project with more defined objectives, enabling the construction of knowledge in specific areas, among others.

In addition to collaborative work, we highlight that Okada (2012) analyzes co-learning, initially defined by Frank Smith (1999), as the importance of changing roles both in the logic of teachers as distributors of knowledge, and of students as recipients of content. That is, both must be partners in the collaborative learning process, in the construction of meanings, understanding and in the creation of knowledge together. Deepening the reflections, she explains that co-learning in interaction within collaborative learning directs to the development of a community of practice leading to dynamic and participatory involvement for the collective construction of knowledge.

Engeström's (1994) concept of expansive learning, which has one of its roots in the concept of Proximal Development Zone (ZDP), by Vygotsky (2007), reinforces the idea that collective activity enables learners to consolidate concepts and the construction of objects; this happens due to the ability to confront the different perceptions and understandings about the subjects, modifying and assimilating other possibilities previously not considered. Dillenbourg (1999) describes and details what is called "collaborative" situations. Intuitively, a situation is called "collaborative", if the peers are more or less at the same level, can perform the same actions, have a common goal and work together.

For that, according to the author, there are four criteria: the action and the extent to which the same interval of these actions is allowed for each person in a collaborative space; people have the same level and knowledge on the topic; people may have similar but different degrees of experience; and, finally, status, that is, people have similar status in relation to the group they are in.

We can see in Figure 1, which represents the sequence of learning actions in an expansive learning cycle, according to Engeström (1994)



**Figure 1:** Expansive learning cycle.

**Source:** Czeszak; Mattar (2018) a partir de Engeström (1994, p. 80).

Through the system of activities proposed by Engeström (1995), we can consider that, from the interaction between those involved in the training course for tutors described in this work, internal problems and contradictions can be solved through new forms of collective functioning. We can have the expansion of concepts through the sharing of experiences and the recombination of elements of them (transformative learning); the application in situations of virtual classroom, either in discussions in discussion forums or in exchanges with colleagues in training and with course participants, envisioning situations of these in their educational practice (experiential learning); articulation of the crossing of diverse realities of colleagues in training and course participants (horizontal and dialogic learning); relationship between new knowledge and pre-conceived knowledge that acquire new meanings and new uses for the most diverse technological tools and resources (underground learning).

Schlünzen's (2015) CCS approach also makes an important contribution to the development of this work. In her studies, the author established means for new pedagogical practices for teachers, always valuing interaction and interactivity in a constructionist, contextualized and meaningful environment, using as a strategy the development of projects, favoring the teaching and learning process of children with disabilities and making use of digital technologies as a potential resource in the learning of concepts in several disciplines. The CCS approach underpinned our study and the training process, as our training mediators learn by practicing within their field of work, combining their previous knowledge and their pedagogical repertoire with reflections and strategies provided by the activities proposed in the course, in addition to exchanges experiences with peers (SHULMAN, 1987).

Thus, with the advent of digital technologies, collaborative work in virtual learning environments uses resources that enable the expansion of relationships through a kind of timeless omnipresence, that is, one can participate in several debates through posts substantiated by internet research and inferences from reflections with colleagues, enhanced by the tutor's pedagogical mediation, promoting learning scenarios (MISHRA; KOEHLER, 2006; DIAS, 2012; 2013).

## 2. Methodology

It is essential to mention that the approach carried out in this article is only part of the work developed and a small section with the analyzes and reflections. Our objective was to analyze the communicational aspects and what is observed with respect to the importance of interactions in the management, guidance and training of tutors in the training course for digital pedagogical mediators for distance education.

From the content analysis of Bardin (2009), observations were made of the nature of the interaction (SILVA, 2010) developed in the activities proposed in the AVA (discussion forums and Wiki) and in a group in the WhatsApp application.

Such observations were analyzed qualitatively (according to the presence or absence of certain characteristics) and quantitatively (according to the frequency of certain occurrences, using statistics) (BARDIN, 2009).

The Training Course for Digital Pedagogical Mediators for Distance Education, offered between December / 2018 and May / 2019, was prepared by professionals from State University of São Paulo, (UNESP) and Universidade Aberta, Lisbon (UAb), following a request from CAPES, whose objective was improve the pedagogical practice of tutors and tutors coordinators of the Open University of Brazil (UAB) system, aiming at a future decrease in the dropout rate in the courses offered by UAB.

This way, the objectives of each module are presented below:

- Module I: get to know and become familiar with different formats and tools of virtual learning environments; to know the Repository Module of the course (optional activity); identify the characteristics and skills of being a student online; know some axes of the didactic pedagogical organization of the Virtual Pedagogical Model of the Open University, Portugal (UAb) and the Distance Education Center of the State University of São Paulo (NEaD / UNESP);
- Module II: identify the characteristics and specificities of technology-mediated communication; explore the concepts of interaction, interactivity and mediation; apply mediation skills in simulations of practical situations;
- Module III: understand the specifics of teaching in the online environment; reflect on the role of the online mediator in the development of e-activities; learn about possibilities in the use of DICT and online mediation that facilitate accessibility and inclusion; to know pedagogical strategies related to current education trends;
- Module IV: understand the pedagogical assessment in digital contexts and the role of the tutor in this process; identify the various digital assessment tools; perform self-assessment on personal skills and what needs to be improved in the role of tutorial mediation.

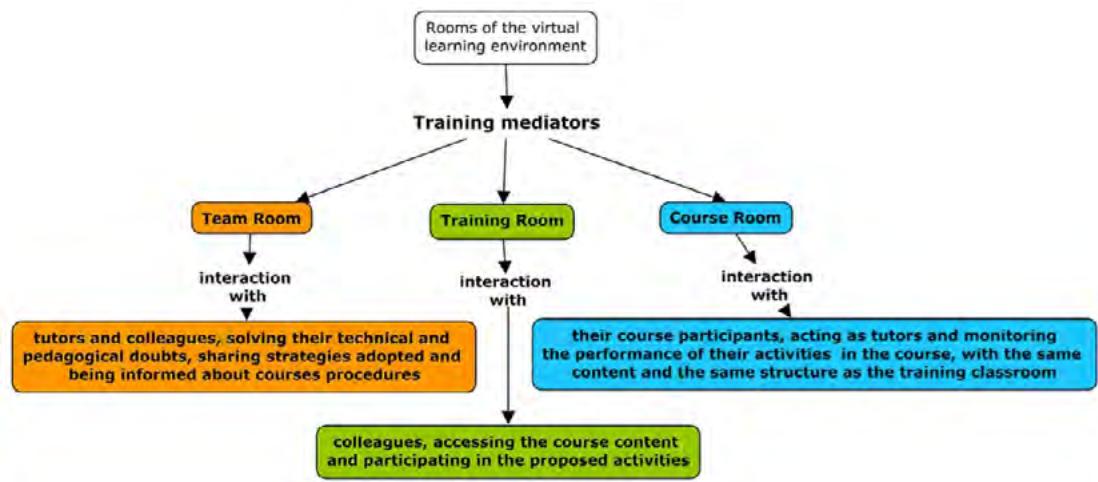
The total number of vacancies in this first edition was 1500 students, from all over Brazil, distributed in 60 classes. To be a tutor in the UAB system, it is necessary to have a higher education degree, to be studying for a master's or doctorate or to have one year of experience in the teaching of basic or higher education. In addition, the professional must have 20 hours a week to carry out the tutoring activities.

Thus, it is understood that course participants could be doing a master's or doctorate, being teachers of basic or higher level, or being tutors in any course of the UAB system. Therefore, as is the reality of most distance education courses, our students were workers who had little time to carry out activities as students.

Among the activities of the tutor of the UAB system, the following can be highlighted: mediating the communication of content between the teacher and the students; monitor the activities carried out by the students, according to the course schedule; establish permanent contact with course participants, seeking to avoid dropout; participate in training promoted by the Educational Institution responsible for the

course; prepare monthly monitoring reports of course participants and forward to tutoring coordination; maintain regular access to the Virtual Learning Environment (VLE) and respond to requests from course participants within a maximum of 24 hours.

The great advantage of this training course for digital pedagogical mediators is that, at the same time that 60 tutors were trained - by a team of three instructors, each of these tutors was responsible for a class of approximately 25 students. Thus, within the AVA (Moodle), each tutor played, at the same time, the role of tutor and course attendant (with in-service training), with access to three rooms, described in Figure 2.



**Figure 2:** Virtual learning Environment (VLE) rooms.

It is an online course with innovative dynamics that added the distance learning experience of UAb / PT and UNESP / BR, in a proposal for in-service training (ARAMBURUZABALA; GARCÍA, 2012), in which learning and teaching go hand in hand. , emphasizing the interactional aspects of online.

Tutors participated in web conferencing meetings with the three trainers and special guests, who were, for example, authors of texts adopted in the course. These meetings took place at the beginning of each of the four modules. The objectives and content to be addressed throughout the module were presented, as well as the interaction with the other tutors. As it is a synchronous meeting, these web conferencing meetings added important aspects to the feeling of belonging to the group, in addition to being a listening space, in which all participants were welcomed, with the right to speak through spontaneous interventions. , if there was a desire to add information or experiences to the speaker's speech. The three trainers also created a group on WhatsApp for quick interaction between team members (coordinator, trainers, web designer and tutors), thus creating more fluid spaces for collaboration. In addition, doubts, guidelines and suggestions were always recorded in the discussion rooms of the Team Room, so that such information would be organized and easier to find.

It is important to note that all interactions were marked by the presence of rapid feedback from the trainers, always with the intention of highlighting the determining role of interaction as a fundamental constituent element in the teaching and learning process. This practice of constant and personalized feedback on the part of the trainers, in the tutors' training environment, explicitly reinforced the importance of such conduct by the tutors towards their students, whether in the activities offered, whether in the questions sent by the participants or in the messages guidance, support and encouragement sent by the tutors responsible for each class.

In this way, all the resources of the virtual learning environment used promoted spaces and scenarios for the fluency of the interaction. In addition to the discussion forums, other resources were adopted,



such as the proposal to develop a work through the Wiki, delivery of individual or pair activities, among other Moodle resources, as we will see in the discussions of this study.

### 3. Main results and discussions

The resources adopted in the course are presented below. The investigation is under development and the results of the observation have yet to be worked on with the recent completion of the course. Here we will present the results related to the spaces and the way the interaction was provided, stimulated and dynamized.

- a. Synchronous communication via Web conferencing, carried out with the Zoom / Colibri application, software used by the Portuguese Ministry of Education and provided to university institutions through UAb de Portugal. Through this application, synchronous meetings took place at the beginning of each module (always with two schedule options - on Friday night and Saturday morning), which were essential to promote the feeling of belonging and reduce the transactional distance (MOORE, 2002; TORI, 2010; SILVA, 2010). There were several meetings, according to the central themes of the modules, to clarify and create spaces for reflection and debate on the themes. In addition to the guidelines and information disclosed at these meetings, it was also an opportunity for educational and training mediators to interact, sharing concerns, expectations and suggestions. There was an exchange and sharing of problems and suggestions for solutions, not only those involved in management, but among the participants themselves, thus facilitating a dialogue and creating a state of trust between the group members, being the basis for collaborative work and establishment co-learning;
- b. Fast and fluid communication using the WhatsApp application. The tutors in formation communicated through this resource, sharing doubts, achievements and anxieties. As it is a synchronous tool and based on informality in language, there was also a feeling of belonging. Unlike web conferencing (where the protagonists were the trainers or any specialists), on WhatsApp, the tutors in training felt more comfortable to report issues involving their daily lives as course participants and tutors. Many difficulties (technical and pedagogical) were presented and overcome, without necessarily the intervention of the trainers.

**Table 1:** Data on WhatsApp interactions

Period of communication via WhatsApp	12/05/2018 a 05/31/2019
Number of participants	63 (among trainers, coordinators and students)
Number of posts	5.103

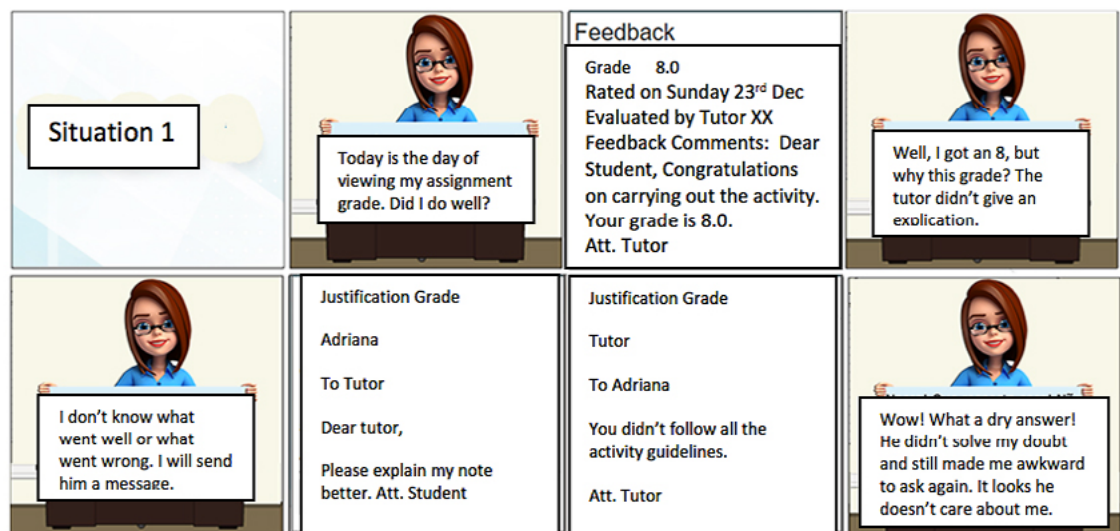
- c. Sustainable and oriented-driven communication was carried out in the discussion forums. This was the most used resource for the development of the course activities. Important strategies were adopted to substantiate interactivity among course participants, such as dividing the class in team forums (BATES, 2016, p. 532) from 4 to 6 course participants, so that everyone could participate more actively, with more punctual monitoring mediators. The teams were instructed to have a course participant mediate the discussion in each forum, using a rotation system. Always aiming to promote the initiative of the course participants, they were free to volunteer to take the lead in the first forum and, in the following forums, those who had not yet played the role of leader, should assume it, enabling their performance while pedagogical mediator and the accompaniment of its trainer. Although, in all activities, there was guidance to actively interact, many did not, either because they published their posts at the end of the activity period or because they accessed the forum only once. Even though there was considerable effective and productive interactivity, sometimes it happened only superficially, just so that the requirement of a minimum of three posts in each forum was met. Learning trails were also adopted in one of the forums, with the aim that each

course participant could choose the activity that best suited their learning profile, but all activities sought to achieve the same pedagogical objective;

- d. Communication via Wiki. This resource was adopted in an activity at the end of the third module of the course, in which the tutors in training reported greater difficulty. It was the only activity that involved collaborative work itself, involving both creativity and group planning. Here it was possible to perceive the need to develop skills, both digital and personal, for collaborative work;
- e. Communication via e-mail. This basic communication resource was used between trainers and tutors in training and between tutors and their students. E-mail messages were exchanged frequently, for guidance, warnings, and to answer questions. The guideline was to use the AVA email address to ensure the record of communications;
- f. Communication via AVA's messaging tool. This resource, little used, fulfilled the function of individual communication, including between tutors in training, but, many times, there was a delay in the answers due to the lack of practicality in accessing the tool, since notifications regarding new received messages.

According to the activity system proposed by Engeström (1994), some excerpts from the discussion forums of the class in question are presented below.

As an example of an activity in which experiential learning was experienced, we can mention Activity 7 of Module II, in which course participants had access to different situations that may occur during pedagogical mediation and placed themselves in the role of tutor, when proposing solutions. In Figure 3, one of the situations presented in the activity is observed.



**Figure 3:** Problem situation presented in Activity 7 of Module II.

It is possible to observe that horizontal and dialogic learning, which consists of the articulation and crossing of different realities, as well as transformative learning, which brings the expansion of concepts through the sharing of experiences and the recombination of elements of them, were experienced in several course activities, but especially in Activity 6 of Module II, in which course participants should report challenging experiences (plagiarism, intrigue between course participants and / or course assistant and tutor, difficulty in handling technology, escaping the theme, among others) experienced by them in the role of tutor, and also about the strategy adopted in pedagogical mediation to overcome the challenge. Figure 4 presents the tutor's initial message with guidelines for course participants to perform Activity 6.



## Starting the dialogue

By XXXX Monday, Feb. 18, 2019, 8:22PM

Hello Students!

How are you doing?

After choosing the new mediator, follow the activity guidelines.

The mediator should instigate the participation of his/her colleagues so that they share a challenging situation (plagiarism, intrigue between students and/or between student and tutor, difficulty in handling technology, avoiding the topic, among others) experiencing the role of tutor. To share the situation, follow the structure below:

- Situation: describe is briefly
- How mediaton took place
- What was the result
- What is the tip for your classmate about mediation

Good interaction!

Hugs

**Figure 4:** Description of Activity 6 – Theme: Mediationin Distance Education.

As approximately 90% of the students were tutors of the UniversidadeAberta do Brasil (UAB-Br) system, all had experience to report, enabling the construction of knowledge in a contextualized, meaningful and collaborative way. The best of this activity was the account of the strategies that each one used to overcome the reported challenge. Below is an excerpt that exemplifies how the exchange of strategies occurred to overcome one of the situations most reported by course participants.

*Sunday, 24 Feb 2019, 10:42 PM*

*Hello M L and colleagues*

*About your request for suggestions to improve participation in the forums, I asked the students the same question and asked for their suggestions.*

*Most say they do not participate because they have not yet understood the subject. As a suggestion, the teacher should pass a list of exercises solved step by step and then similar examples will be worked on in the forum. According to them, it would greatly improve the understanding of the subject.*

*As a face-to-face tutor, I notice that most do not master the basics of high school, and this makes understanding very difficult.*

*I also observe the lack of interest of many in carrying out the activities.*

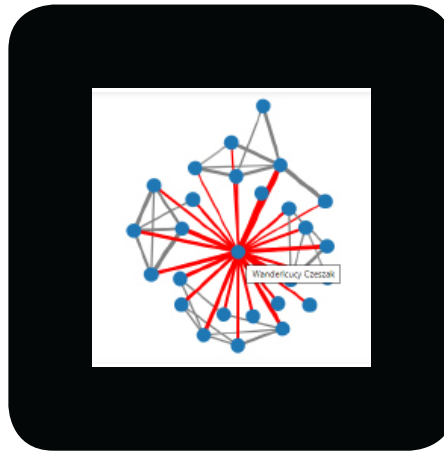
*I have already programmed study groups and extra activities to try to alleviate the situation.*

*Hugs,*

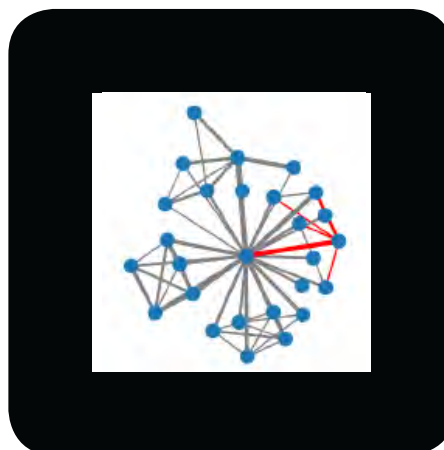
*(OSF student - class 1 - activity 6)*

This forum had a very significant participation of course participants. The following figures, elaborated from the graph theory and extracted from a monitoring system for distance learning courses at UNESP, demonstrate the interaction of the course participants and the tutor of class 1. In the center of figure 5,

there is an example of posting in tutor's forum and, in red, all posts by course participants who answered the initial question posed by her. Circles that have only one edge connecting to the central circle represent the course participants who only answered the initial question and did not interact with colleagues. In Figure 5, there are, in red, the edges that illustrate the interaction of a student with the tutor and four colleagues.



**Figure 5:** Relationship between Tutor X Course attendants.



**Figure 6:** Relationship between Course attendants X Course attendants and Tutor X Course attendants.

Through Figures 5 and 6, it is also possible to note that most of the students made more than one post and, in addition to interacting with the tutor, they also interacted with colleagues.

The following excerpt demonstrates how the relationship between new knowledge and pre-conceived knowledge occurred, in relation to the ethical aspects that involve distance relationships (underground learning).

From my previous experience, I was already aware of the ethical aspects that involve distance relationships, both in relation to students and teachers, since I have already participated in several courses of this kind. However, through the experiences and established relationships, this function, as well as the skills that involve it, have been improved and consolidated, as something that must be present in all situations. (AGZC course attendant - class 1- self-assessment).

In the excerpt below, it is possible to observe the evaluation of a student regarding the practice of her tutor, demonstrating how essential the interaction was for the smooth running of the course.

During the course, the exchange of information between colleagues and with the Teacher / Tutor was constant. Mediator X was very attentive. She gave feedback on our posts quickly, encouraging our participation and pointing out ways. The few times when doubts about the proposed activity arose, the Tutor was called and promptly provided all clarifications. The practical example given by the Tutor, in the exercise of her function, was the biggest learning in this course. (CAV Cursor - class 1 - self-assessment).

Corroborating the theory of (SCHNITMAN, 2011) about the importance of the tutor for the development of collaborative, organized and productive work.

#### 4. Considerations

Our experience in teacher training courses leads us to believe that the orientation towards collaborative work needs to be improved. In situations where collaborative work takes place on the initiative of those involved, this practice flows more easily. In activities such as Wiki, collaborative work still requires the adoption of strategies for further development. Hence the importance of the tutor's role, which can suggest to course participants, from the beginning of activities, a structure that involves steps for the more organized development of collaborative work. In addition, the tutor should also monitor the process, by encouraging critical reflection, so that those involved do not deviate from the proposed objectives. However, the tutor also needs to be trained in a systematic and well-structured manner in order to be able to play their fundamental role as facilitator of the interaction.

It is important to note that, in this training course, collaborative work seems to have developed more consistently among tutors in training in situations of solving specific problems related to their students, going through the seven steps described in the structure of Engeström (1994) presented in Figure 1 of this study. In the planned activities, as in the Wiki, for example, the degree of interaction was not what was desired. There will need to be a more in-depth investigation (already underway) to further discuss this observation.

Still in relation to Figure 1, in its final item - "practice in society" -, we can say that, in the case of the training course in question, this item refers to the tutor's practice with his students at the moment he takes for your class what was learned through interactions with peers in training.

Furthermore, the way in which each module provided different experiences, according to the CCS approach, was formidable. The opportunity for course participants to be mediators in certain discussions was a great differentiator. In particular, module III, in which the activity involved learning trails. In an innovative way, in this task, students had the opportunity to choose the path in which they had greater ease and familiarity, demonstrating the importance of the student having an active role in their training process, when making choices on this path. However, it is worth mentioning that it is still necessary to seek strategies for some course participants to participate in the forum discussions more effectively, instead of sending their posts late, at the end of the established deadline.

We can affirm, therefore, that it is not possible to discuss collaborative work without involving concepts of pedagogical mediation, communication resources, teacher training and interaction (SCHLÜNZEN; SCHLÜNZEN JUNIOR; SANTOS, 2017). Thus, training the tutor is essential so that he can relate these elements in a coherent way with the communicational aspects. What can be observed, regarding the

importance of interactions in the management, guidance and training of tutors in the training course for digital pedagogical mediators for distance education, is that the strategies adopted were decisive in consolidating the work they were doing as tutors, offering guidance, content and sharing of experiences so that they could build their tutorial practices within their field of action so that their knowledge construction would occur more safely and effectively.

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