

# Digital Culture and Learning in Higher Education After COVID19: A Collaborative Approach in a Virtual Environment

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## Abstract

This article is the result of a critical analysis of the incorporation of Digital Culture into methodologies and interactive approaches that drive collaborative and meaningful learning processes for higher education students. We will analyze a specific course, Science, Technology and Society in Arts, Languages and Culture, with students from the 1st. Semester of the Portuguese Language and Literature for Teacher education Course of a Private University. Our goal is to demonstrate the planning, implementation, and learning outcome in a course with a hybrid methodological approach that makes use of interactive tools in the students' learning trail. We will highlight an interactive evaluative activity that consisted in the construction of a collaborative mural using the *Digital Padlet* tool as a resource for a critical reflection done by students on the chapter of a book from the basic bibliography: "What is Society?" (Bazzo, 2003). We adopted the qualitative analysis of the data from the Collaborative mural itself and the records of the students' Digital Learning Diaries, which was performed after the collaborative activity. This allowed us to observe the relationships between the methodological approach, the use of digital tools and the perception of significant learning in higher education, as well as to establish a critical reflection on the incorporation of digital culture in pedagogical practices.

**Keywords:** digital culture, collaborative learning, meaningful learning, teaching methodologies, hybrid teaching

## Introduction

Faced with a moment so unique that one lives all over the world from the emergence of the "New Coronavirus" causing COVID19, education is seen at a crossroads.

It is a watershed moment, which will bring, if properly reflected and systematized by educational networks and by teachers themselves, new practices, which can put into

action the much-desired curriculum that promotes meaningful learning, the emancipation of the student and that promotes a teaching practice focused on the development of the student's protagonism.

Many schools, and many teachers, have implemented creative solutions for the time of remote teaching. There are surveys showing what some schools in the state of Sao Paulo, Brazil have done. These actions range from caring for infrastructure, economic actions up to those related to curriculum reorganization. But it is necessary to look directly into the classroom, the teacher-student relationships, the solutions that are being proposed in the micro world of the teacher and his students. Schneider, former municipal secretary of education of Sao Paulo, in a column in *Folha de Sao Paulo*, confirms this idea in his recent article, which states that:

Making the curriculum more flexible, having a good information system and learning metrics, betting on the connection between the school, students and the school community and investing in the connectivity of all students, regardless of their income, are good learning from the experiences mentioned. But we will only wake up better from this nightmare that has been remote teaching if we are able to rethink educational practices from this experience.

The pandemic taught us that teaching is not a simple craft and unveiled the enormous professional commitment of Brazilian educators. Our greatest tribute to these professionals should also be to believe in their ability to design the educational policies they will implement (SCHNEIDER, 2020).

This is what we will do in the brief words of this article, by sharing a teaching and learning experience during the quarantine period caused by the COVID pandemic19. We will highlight movements made by the teacher and the students that reveal conceptions of education. Can this lockdown and remote teaching experience impact educational concepts and paradigms?

Our objective is to point out the learning experienced by these students and conceptualize the actions performed by the teacher, so that it can be evidenced that technological resources well employed, intentionally and promoting collaboration, can be rich in the teaching and learning process.

We believe the teaching experienced during this pandemic lockdown might bring forth new possibilities for curriculum organization post covid19. Nevertheless, for this to actually take forth, the savoir-faire needs to be conscious, reflected and intentionally practiced. Active learning, flipped classroom, blended learning, as discussed by Bacich and Moran, (2018) can be done in regular (no distance learning) classrooms and the digital culture can be incorporated.

We do not intend to defend digital education (distance learning) exclusively. But, rather, reflect on the possibilities of a curricular reorganization that can be

implemented using digital tools and that can expand the possibility of developing skills such as collaborative learning, autonomy and protagonism.

## **Literature Review**

Levy (1991) states that the good use of technology can empower and amplify our cognition. That affirmation is in complete accordance with Vygotsky's concept of how our cognition increases. The more interaction with different instruments and meaningful signs, the greater capacity for developing cognition.

We have been forced, in the last decade, to confront our teaching methods because our students have different cognitive capacities due to their high use of technology. Our teaching methods have not always kept up with them.

There have been many researchers pointing out new ways of teaching that promote protagonist students. We can recall Mazur (2013), with peer instruction; we can also call on Duch, B. J., Groh, S. E, & Allen, D. E. (2001) with Problem Based Learning. But all these new methods draw originally from Dewey (1916), Vygotsky (1998), Piaget (2003), Wallon (1995), Paulo Freire (1996) and D. Ausubel (1980).

Education has long demanded new ways of making students active and not passive, through teacher's methodologies. But lately, with the advent and rapid development of digital culture even more emphases have been put for teachers to change their ways of teaching.

Dewey (1916) pointed out the importance of putting students in real life situations so that they might experience different solutions for solving situations and for reflecting on principles.

Piaget (2003) enlightened us with the child development theory and how one learns by assimilation and accommodation of new facts and new habits, increasing therefore their knowledge.

Vygotsky (1998) put all his effort and studies demonstrating how culture and interaction makes it possible for one to learn. He postulated that teachers need to intentionally challenge their students so that they might interact with signals, signs, meanings and so increase the significance of their world, increase their vocabulary, and consequently increase knowledge.

Wallon (1995) developed his theory of how the human is an integration of cognition, motor, and affection, and that these dimensions need to be put in action and be observed by teachers while organizing their teaching plans and methods. A teacher needs, according to him, to pin out students' needs so that in permitting experiences that will help them fulfil these needs, they will necessarily perform effectively. Vieira (2020) also points out that Wallon's theory leads us to the understanding that amidst afflictions, cognitive responses will be compromised. In this pandemic moment we live, teachers need to be aware of their students need for interaction, even in virtual environments, so that they can figure out their emotions and, in doing so, they can

resume their learning experience. In part, that is one of the demonstrations this paper will focus, as students are encouraged to interact with each other and with their teacher.

Freire (1996), in Brazil, defended the need for teachers to part from students' reality in order to introduce new knowledge and make it possible for them to emancipate from states of ignorance, in different levels.

Finally, among our choice of researchers and intellectuals of education, Ausubel (1980) proposed that teachers seek for their student's previous knowledge, so to build upon it, enhance it. He also argued that to reveal meaningful learning, students needed to demonstrate and be conscious of how the new knowledge was assimilated in his cognitive structure. That can only happen, also, if the student is active in his learning experience.

From these educational fathers, we derive all other active teaching methods, as already mentioned. One that has called much attention lately is the inverted classroom method, through which the students can collaborate, can individually reflect and systematize their learnings, can interact with the teacher and can learn to search for information, evaluate information and use it in favor of his development. But for this to happen, the teacher needs a careful and detailed plan of action, with phases; a kind of trail for the student to track in order to promote exploration, recognition of former knowledge of the subject of study, collaboration, reflection and meditation, systematization and application. This is where the digital culture contributes. It makes all these phases possible and mobilizes the students.

It is important to observe how much this digital culture, marked by the ubiquity of digital devices, drives and impacts the processes of knowledge construction, since "for the first time ordinary citizens can not only have access to information, but also produce and distribute their productions and carry out these actions collaboratively." (BANNELL, et al, 2017, p. 104).

In this sense, the so-called culture of convergence (JENKINS, 2008) refers to a stream of images, ideas, stories, sounds that can be shaped by the subjects immersed in this new reality, who appropriate the countless possibilities of media and languages to become authors and protagonists of new knowledge.

It becomes relevant, therefore, to understand how methodological approaches that combine the use of digital technologies can enhance interactive, collaborative, and authorial learning processes. Levy (1994) pointed out, for more than two decades, how collective intelligence can become viable as resources drive new ways of learning and teaching, incorporated into cyberspace. Thus, possibilities are created so that the student of higher education can develop cognitive abilities, exploring different senses and languages and different spaces and times.

Thus, digital culture brings to education the possibility of building new skills and abilities, given the plasticity that the virtual expresses in its constant modification.

Technology should not be thought of unilaterally, as it is also configured by the use, we make of it. [...] its dynamic interactivity changes the user socially and culturally, activating different intelligences and abilities, demanding, and favoring the construction of new competence. That is, adopting ICT in our daily lives changes what we want to accomplish, what we try to accomplish and what we think it is possible to accomplish: it changes our goals, actions, interpretations and meanings, as well as the neuronal organization in the brain. (BANNELL, 2017, p.108).

We understand that adult learning occurs as an awareness of learning and what meanings they attribute to it. Therefore, it is of great relevance to understand the need to establish relationships that take place in the virtual space, through the experience of narratives in network, so present in the daily life of students, especially higher education. (LOPES, VIEIRA & HARDAGH, 2018). "If the school ignores the breadth of the community to which the new generations belong, it will be excluding much of the daily social and cultural experience from school life." (BANNELL, 2017, p.117).

In this sense, promoting actions that awaken new possibilities of interaction between teacher, students and knowledge, creating a network and a perspective of collective construction of learning that allows the student to be active, inspires new forms of pedagogical practices, more consistent with the scenario presented (LOPES, 2018). In this way, it is necessary that "teaching-learning activities boost independence of thought and propose significant challenges for the student". (BANNELL, 2017, p.118).

Our research establishes a critical reflection on Digital Culture to incorporate methodologies and interactive approaches that drive collaborative and meaningful learning processes for higher education students. We will analyze the course: Science, Technology and Society in the Arts, Languages and Cultures, with students from the first semester of a Bachelor's degree in Language Teacher Education of a Private University in Sao Paulo, Brazil. Our research object implies a blended learning methodological approach with the use of interactive tools that permeate the students' learning trail.

We will examine an interactive evaluative activity that consisted in the construction of a collaborative mural, using the *Digital Padlet* tool as a resource. Students were assigned a critical reflection of the chapter of a book from the basic bibliography "What is Society?" (BAZZO, 2003).

We adopted the qualitative analysis of the data from the Collaborative Wall itself and the records of the Students' Digital Learning Journals after the collaborative activity, so that we could observe the relationships between the methodological approach, the use of digital tools and the perception of significant learning in higher education, as well as establish a critical reflection on the incorporation of digital culture in pedagogical practices.

Unfortunately, the incorporation of new methodologies and of technology in the classroom is still a dream. What we perceive are teachers repeating practices inherited from their teachers, and so on. School culture, in general, is difficult to change. Many will defend that change can come through crises. But a crisis cannot bring change if the desired change is not brought to consciousness by serious discussion and reflection. We understand that actions such as the one we present in this paper can contribute to an effective reflection and to change in educational paradigms, since only the fact of the existence of a crises, a phenomenon caused by the need for social isolation due to COVID19, does not guarantee a change of culture, nor, the incorporation of digital technologies in everyday school practices.

### **Methodology**

The methodology consists in the analyses of teaching and learning experience carried out during the COVID19 pandemic lockdown with first semester students taking *Science, Technology and Society in Arts, Languages and Culture* of Portuguese Language Teacher education Major, in a Private University in Sao Paulo, Brazil. The class counted with the participation of 30 students.

During the lockdown, the classes were held on-line, with students that did not have experience with online learning. This experience that is being presented consists in an analysis of both the learning journals and the collaborative mural constructed as products of a study topic "What is Society", given during that period.

For the construction of the Collaborative Mural, the Padlet digital tool was used, which allowed the collective construction of posts (according to the chosen model and layout) using various media resources such as: texts, audios, videos, images and links. The reason for this choice of resource is that the Padlet is considered a tool that allows the "convergence of media" for the collaborative construction of knowledge and for authorship by the students.

The students were initially given the task of performing the full reading of the chapter "What is Society" (BAZZO, 2003) and, from there on, the teacher divided the contents covered in the chapter into five topics and divided the class in five groups. The class was presented to the Padlet resource and told that each group had the assignment to present their understanding in a critical manner and through the use of associations and relations with other media resources that could be produced and authored by the group or be selected in other virtual environments, in social networks or other communication vehicles.

The construction of the mural was carried out collectively and collaboratively by each group during a two-week period and culminated in the online presentation during a remote (online) class. After this experience, a critical reflection on the activity and on the individual learning process was proposed through the registration of the on-line learning journal, created on the Moodle Platform.

Our analysis is built from a qualitative perspective and presents the construction of the Collaborative Mural as a collective production of knowledge. It also establishes, through the observation of the personal records taken from the learning journals, what the students perceived about their learning process.

The analysis seeks to identify and reveal the significant impact that a teaching strategy with clear pedagogical intent, involving collaborative construction and, at the same time awareness of the individual learning process through personal records, can establish new ways of involving students as protagonists of their learning process.

Using multisensory media tools and resources, the teacher seeks to create conditions for the incorporation of digital culture in higher education teaching practices, especially in the quarantine period, due to the COVID-19 pandemic. To ensure aspects related to research ethics, the names of students in activity records are fictitious.

### **Analysis and Discussion**

The construction of the collaborative mural presented itself as an interesting and stimulating synthesis activity for students to experiment in various formats for consolidation and presentation of knowledge incorporated during the learning process.

Mental maps, conceptual maps, infographics, comics, among other products used for the discussion of the topics were created to stimulate the establishment of various cognitive relationships with student's prior knowledge (AUSUBEL, 1980; FREIRE, 1996). The creativity and appropriation of the media to express the new knowledge also had peaks in which students created "Tweets" of the authors and subjects studied and, also, a video of a conversation on WhatsApp to discuss the concepts studied in the class. We can highlight how the appropriation of technologies and languages more consistent with the student's profile, drive the processes of building meaningful knowledge while promoting engagement and active participation in online classes (BANNELL et al, 2017). This can also be observed in the registers put in the learning journals.

The following image shows the completed padlet, after each group inserted his observations about the chapter studied. We will, in sequence, demonstrate parts of this padlet.



<https://padlet.com/analusouzalopes/x3ummopfm5gr>

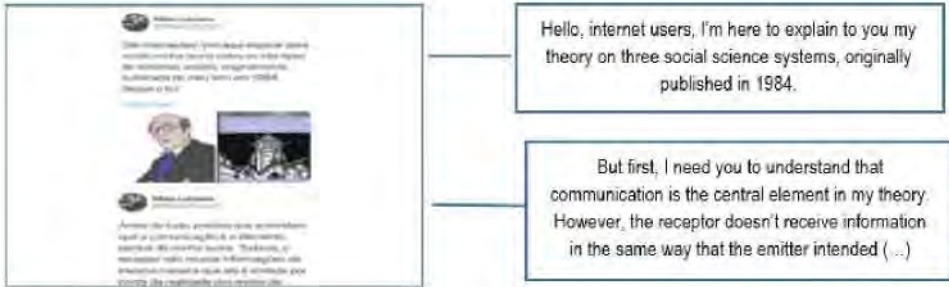
This set of materials and media shown in the *padlet* link was organized by the students. This digital resource was proposedly used and configured in the teacher's class plan as "a place" of media convergence (JENKINS, 2006) in which students become the producers and consumers of their own knowledge. This can be attested by the fact that the collaborative mural was complemented by other themes brought by the students' elaboration over the original text. At the end of the assignment, the "product" of knowledge was a critical and expanded reflection of the concepts of the chapter proposed as a basic reading from the bibliography, constructed collaboratively by all students.

It is worth highlighting the language used to express the understanding of theoretical concepts, associated with the profile of the 21st century student. The appropriation of media languages is significant in that this possibility of expression through various media allows the construction of narratives that students experience daily in social networks and virtual environments (BANNELL, et al, 2017) and that often have no place in the contexts of formal education.

The construction of the mural allowed students to expand their sources of knowledge, expanding the themes, presented in the chapter, through research, leading them to build knowledge and establish relationships beyond the text proposed for reading.



### Some examples:



The image shows a screenshot of a tweet from Miklas Luhmann. The tweet text is in Portuguese and mentions his theory on three social science systems published in 1984. Two callout boxes are connected to the tweet by lines. The first box contains the text: "Hello, internet users, I'm here to explain to you my theory on three social science systems, originally published in 1984." The second box contains the text: "But first, I need you to understand that communication is the central element in my theory. However, the receptor doesn't receive information in the same way that the emitter intended (...)"

### Miklas Luhmann tweet presenting his social science theory.



The image shows a screenshot of a WhatsApp group video. The video content includes a person holding a sign that reads "humanos que não vivem em sociedade são deuses ou bestas CHANGE MY MIND". There are also text overlays in Portuguese. Two callout boxes are connected to the video by lines. The first box contains the text: "Hi, Guys! I was doing the assignment and look what I found. Aristotle considered the gods a society. And all the ones that are not in the society are". The second box contains the text: "Hi! I heard something about that. These non-human societies were taken as examples of what human societies should be."

### WhatsApp group video that explains Aristotle's idea of Polis.

The comics was created by one of the groups to express the concepts seized from the reading of the text and the teacher is portrayed as if she were in the physical

classroom. Their teacher uses the Socratic method and in the "comics" they produced, the students use the same "methodology" to present the concepts learned.

In this sense, it is possible to identify how students establish relationships with previous knowledge, contextualized experiences (in the classroom) that allow them to "anchor" new knowledge and create new scenarios to express their learning in a meaningful way.



**Comics on Social Change.**

Teacher: "Hey guys! Today we are going to discuss different interpretations about social changes. What comes to your minds when I speak of social changes?"

Student 1: "revolutions"

Student 2 – "Ideologies and Heroes."

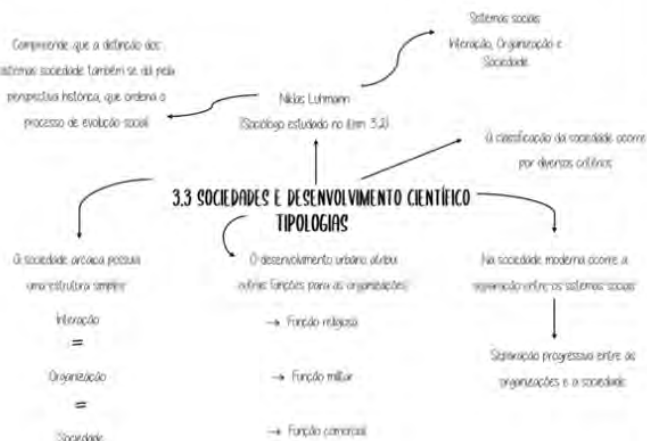
Teacher: "Congratulations! You are both right. Both ideologies, revolutions and agents of change, the heroes, represent mechanism of change (...)."



**Mackenzie Newspaper to discuss Science, Technology and Society in Arts, Language and Culture**

Moreira & Masini (1982) point out Ausubel's (1968) proposal "(...) the essence of the meaningful learning process is that symbolically expressed ideas are related in a non-arbitrary and substantive (non-literal) way to what the learner already knows, that is, to some relevant aspect of his knowledge structure." (1982, pp.13-14)

In addition to creative products that were incorporated into the mural, it is important to highlight the resources of organization and systematization of ideas such as mind maps, conceptual maps, schemes and timelines that demonstrate students' understanding of concepts, appropriation and synthesis of knowledge. In this sense the exploration of digital tools was also used for the elaboration and presentation of visually attractive and engaging materials.



### Conceptual Map on Society according to Ortega y Gasset



### Mental Map on Society and Scientific Development: typologies

In this regard, it is worth mentioning, once again, that in Ausubel's proposal, the systematization and hierarchization of knowledge should be considered from the concept of "progressive differentiation". Thus, mind maps are useful instruments for incorporating this principle, since diagrams that indicate relationships between concepts facilitate visualization and, consequently, can be used to integrate, reconcile, and differentiate the contents studied. (MOREIRA & MASINI, 1982).

To have clarity of students' learning process and so that students might have full consciousness of their learning process, it was intentionally planned by the teacher a second activity in which the students reflected on their process of knowledge construction through a Learning Journal, using a tool available in the virtual environment of the discipline (Moodle). Observe part of a text taken from a learning journal, that contemplates and reveals a meaningful learning process:

*During the studies we used some methodologies that helped us learn the content. Among those that helped me the most I quote here the reading of the texts and the elaboration of visual schemes. (Diana, Learning Diary, 2020).*

The teacher's clear and planned intention needs to be present in the conduction of the proposal, so that the results can express the learning possibilities of the students. For this reason, active and collaborative participation should be conducted by the teacher with a clear approach that allows the student to experience moments of collaboration, systematization and application of knowledge, but it is extremely relevant that he reaches a moment of reflective synthesis, in which he can be led to identify and recognize his learning process.

From the records of students' journals, we can identify how the recognition of the learning process drives the awareness and the strength of deep and meaningful learning. In the theory of Meaningful Learning "it is consciousness that attributes meaning to the objects that surround the individual" (MOREIRA & MASINI, 1982, p. 2). This is also evident in the following extracts, remembering that these students are studying to become teachers themselves, what they perceive is of significant value:

*With regard to knowledge, I can say that the discovery of the process of knowledge formation was something new for me, and to know that knowledge is something so particular for each person, since each one processes information in a unique and exclusive way, is really stunning. (Murilo, Learning Journal, 2020).*

*A methodology that helped me a lot was to read the texts given and indicated, do research on them and then make a summary of what was read, I realized that this is how I learn more. I learned about the kinds of knowledge and societies. (Leticia, Learning Journal, 2020).*

The awareness of the learning process also occurs to the extent that students perceive themselves as active in their learning experience. It is this contextualized relationship that allows them to identify how and what they have learned and, also, the impact of this new knowledge on their cognitive structure and lives.

*In my personal life, in a way, it has helped me gain confidence, because I feel like I am making more and more progress. I use the content in discussion of a more intellectual level, even if it's just a discussion at the table with my parents. In general, even in the short class time we had, I was able to develop more. (Isadora, Learning Journal, 2020))*

*(...) I cannot leave out the impact of the methodology applied by the teacher, who, to give us a broader view, engaged us in dynamic and creative projects, which materialized our vision of the concepts seen in the classes, such as the PADLET tool, the mental map (...). In short, I affirm that the classes were of utmost importance to my life, and that I will take their teachings to my professional and personal space. (Anne Bianca, Learning Journal, 2020)*

The combination (with pedagogical intention) of the organization and systematization of activities, allows the creation of conditions for an active learning process and makes it possible for student to recognize their learning path. In addition, student engagement and involvement in activities contribute to a meaningful process. The use of digital tools, especially *padlet* (object of this investigation) stimulates dynamic interactivity and activates the different intelligences and abilities. As pointed out to us by Bannell et al. (2017), it can be identified in the following reports:

*The tools used for evaluations and group work have aroused in me a great interest in the subject and all that surrounds the course. Being able to use tools such as padlet to expose the learned content brings a more technological and new practice to the classroom (face-to-face or virtual), explores our skills in connecting content to images, videos, news, websites and even gifs. (Jessica, Learning Journal, 2020)*

Perceiving one's learning process is also significant to boost student autonomy, as we can see:

*I find the teacher's work amiable, her goal of always engaging us in class discussion, with our impressions and worldviews. (...) bringing and presenting us remarkably interesting platforms, such as Padlet and other digital resources, where we simultaneously set up a mural of words. Learning like this instigates curiosity, takes some of the burden off obligation and seriousness, gives space to light, fun learning, done together. That is, there is not only concern with content, but also with methodology, in how this knowledge will reach us students. (Juliana, Learning Journal, 2020).*

*We read chapters of a book and introduced them to the room. I believe this is because we have been encouraged to read and research the subjects of these works on our own and introduce them to our colleagues as a teaching. (La<sup>^</sup>s, Learning Journal, 2020).*

It is possible to perceive the students' engagement through activities, especially the construction of the mural that mobilized them collaboratively, even in the context of social isolation experienced during the pandemic. The learning experience is expressed in the learning journal records that contribute to helping the student in this process of recognizing his own learning process.

*In the last unit, where we discussed the theme of society, we had to do group work (in times of quarantine). I was suspicious of the effectiveness of a task like this at that time, but with my group I had a great experience. We read the text, presented the ideas and one of our colleagues made herself available to draw a comic by hand. (Carina, Learning Journal, 2020)*

*One of the most interesting things about this first semester is how we are going through an experience that shows us the importance of human relationships and the intelligent use of digital technologies. Like all the other events that mankind has gone through and overcome, this pandemic is causing and will cause significant change in the world. It gives a little chill in the belly to see all this happening and know that you are living in a*

*situation that, without a doubt, will be the reason behind the future news. It is seeing history live and in color. (Julia, Learning Journal, 2020)*

Finally, it is worth mentioning that all the work developed, when intentionally planned, finds in the learning trails a strong methodological resource to lead the student in his/her learning process, providing various ways of interacting and building knowledge. In this sense, the trail must rely on potentially significant materials that allow the student to understand and establish the relationships proposed for his/her journey.

*When we study "What is society? ", we had video class, responses in the forum and, to complement, we built a collaborative mural, once again, which would be difficult to understand only with reading and a summary, became innovative and more efficient, with each group sharing their knowledge, exploring various tools, applicability, concepts, theories... Creativity always flows, each working one way and making it work together. (...) We learnt that each theme relates directly and influences each other, contributing to the development of society. (Clara, Learning Journal, 2020)*

*I really enjoyed the creative exercises we did during this semester, practicing and developing various ways to learn the same subject. I found this very cool since it does not impose a limit on the imagination or ability of the student. (Inara, Learning Journal, 2020).*

Thus, stimulating exploration, contextualization, reflection, application, and synthesis of knowledge are fundamental elements for the construction of learning trails for students.

## **Conclusion**

From the discussions proposed through our theoretical framework, we were able to reflect on the need to rethink pedagogical practices that incorporate intentionally the use of digital technologies in the learning processes, creating conditions for meaningful learning and more consistent strategies for the profile of the 21st century student.

When discussing the need to incorporate digital culture into school practices, we took as an object of investigation a methodological experience based on the assumptions of meaningful learning, with organization and systematization of curricular activities during the period of the pandemic lockdown with students of the first semester of a bachelor's degree in Language Teacher Education, in the course: Science, Technology and Society in the Arts, Languages and Cultures.

The methodological proposal involved the organization of learning trails and, in particular, we analyzed an activity of creating a collaborative mural, associated with a learning journal, identifying how students engaged themselves in the activity and, also, how they recognized their learning process, built autonomously, collectively and collaboratively, mediated by technologies.

The results presented show us the effectiveness of the strategy used, since students demonstrated great involvement with the proposal and, even going through a tough crisis, a moment of pandemic lockdown, identified themselves with a digital resource that offered the possibility of incorporating multiple media resources, placing students as protagonists and producers of knowledge. The collaborative experience contributed to an expansion of knowledge and the learning journal made it possible for students to be aware of their formative process, of their own learning trail.

During the pandemic, the use of remote online classes was obligatory and promoted the necessity for teachers to teach with technology. We affirmed that this might bring change to education. But we questioned if the mere existence of this crisis would be significant for change to happen in the teaching-learning process. What we take from this experience is that change will come if we effectively and intentionally insert technology in the teaching-learning process; if we plan activities in a collaborative manner and if we create circumstances for students to be autonomous and develop authorship.

We also believe that teachers need to share and to read about the different experiences with technology during this period. This will promote the possibility of establishing consciousness of class plans. As teachers, we need to go beyond registering our class plans, we need to do so consciously organizing phases and resources to intentionally sponsor and stimulate student's learning goals.

To advance meaningful learning in students of the XXI Century, the use of collaborative platforms and virtual resources is a great possibility and needs to be explored in teacher education programs, in colleges and in continuous education experiences offered for teachers by the institutions in which they work.

Once again, we emphasize that change is not automatic due to a crisis. With the purpose of change, of encouraging innovation, it will be important for serious reflection to take place among educators, aiming to understand the needs of our students, from the XXI century, and our society and its demands.

This is what needs to happen in our traditional schools and classrooms. It is not the insertion of computers, of apps, or of any type of technology that guarantees the incorporation of digital culture into teaching; it is, though, the insertion of all these mechanisms, nonetheless, with planning, with clear learning goals.

Technology can be a resource that enhances opportunities for development of abilities, alongside subject contents. Technology can be a teacher's ally but cannot substitute a teacher's intention for student's achievement.

Thus, we understand that, given the challenges posed by the pandemic, the issue is more complex to the extent that incorporating digital culture into formative processes involves a pedagogical paradigm shift. We understand that looking at the theories of education presented by : Piaget (2003), Wallon (1995), Freire (1996), Vygotsky

(1998) and Dewey (1916); the latter that inspired the movements of systematization of active methodologies, combining the use of digital technologies, allows us to accomplish formative experiences in virtual environments, which also become "a place" of learning, experiences and experiences in the construction of new knowledge.

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