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Blended Learning and Critical Thinking:
Identifying the Issues Related to the Development of Critical Thinking Skills through a Blended Model in Brazilian Low-income Students.

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ABSTRACT

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The context of this research is a social institute that works with low-income students in high school in São Paulo, Brazil, in a moment of searching for scalable solutions given Brazil's dimensions and population number. Since then, the institute designed and has been running an online platform aiming improvements in language and math skills, and also a comprehensive social and emotional development program, as an adaptation of the in-presence program with the same objectives. Due to time constraints, critical thinking was the skill chosen to be the focus of the research.

The general objective of this present work is to study the perception of the students related to their critical thinking development within a blended model. Specifically, other objectives are to point out possible issues in the use of a blended model to develop critical thinking, and to identify special aspects (if any) considering that these students are low income.

Narrative inquiry was the method used to analyze the virtual interviews with 2 students from the social institute. The findings suggest that the major support for the development of critical thinking skills were the in-presence meetings, and the interaction with other students focused on intentional themes that generate critical analysis.

In addition, the online platform was mentioned more as a tool to help in this process, but the emphasis concerning effectiveness and meaningful experience was in the in-presence meetings. According to the participants' narratives, interaction appeared important for developing critical thinking skills. Therefore, this should be considered when developing an online platform.

Confidential information regarding the specific institution, schools and the research participants has been removed from this report.

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CONTENTS

GLOSSARY

OECD	Organization for Economic Co-operation and Development
PNUD	United Nations Development Program
IBGE	Brazilian Institute of Geography and Statistics
MEC	Brazilian Ministry of Education and Culture
SEL	Social and Emotional Learning
CT	Critical Thinking
HALI	High achievement low-income

1 INTRODUCTION

1.1. Research topic

The broader context of this research is Brazil, the 8th greatest economy in the world and at the same time, the 7th worst country in social inequalities (PNUD, 2019). There is a famous photo of one neighborhood in São Paulo, a 12-million-inhabitants city, in which this contrast can be seen in a crude way: there is a simple wall dividing an imposing fancy skyscraper from a huge poor community (shanty town). The differences between these two sides of the same neighborhood are shocking and they don't stop at housing: they can be worse when it comes to quality education, health system, better opportunities and so on.

Another example of the damage extent of these differences is life expectancy. A man who was born on the poor community side has 20 years less life expectancy than a man born just on the wealthy side of this neighborhood. It can be said that a simple wall is separating 20 years of life expectancy due to Brazilian social inequalities.

With regard to the educational context, there is some data showing the consequences of Brazilian deep social inequality in the educational context. According to official statistics from *public schools* (IBGE), 41% of young Brazilians up to 19 years old do not finish high school; from those 59% who concluded this level, almost 93% of them haven't achieved expected skills in Math, besides substandard reading and interpreting skills (OECD, 2017). As private schools often achieve expected results, it is noticed that the educational system in Brazil is one of the most powerful mechanisms that sustains and fuels this social inequality. Therefore, quality education is a product instead of a right in Brazil, only available for those who can afford it.

Since it has been stated that the education crisis in Brazil is not a crisis but a project, (Ribeiro, 2001), it is fundamental to have a critical understanding of this context in order to demand and actively contribute to change it. Critical thinking skills can be considered the type of skills that can promote a wider comprehension of the complexity of the world and also awareness of inequalities and injustices (Lewis & Smith, 1993).

1.2. Study area

The specific context of this research is a social institute that works with low-income students in high school in São Paulo, Brazil. After more than 15 years working with a face-to-face model to develop his scholars, its expansion strategic plan conducted to the need of thinking of scalable solutions given Brazil dimensions and population number.

Since then, the institute designed and has been running an online platform aiming improvements in language and math skills, and a comprehensive social and emotional development program, as an adaptation of the in-presence program with the same objectives.

Communication, working collaboratively, solving problems and critical thinking are the social and emotional skills composing the development program. *The Missions* is the name of activities on the platform focused to develop these skills. In addition to the set of activities in the platform, there are 3 face-to-face meetings with all the online students per year, divided by regions, focusing on expanding the sense of community and most of all, reinforcing the online development program.

Focusing on supporting the motivation in the project and the engagement on the platform, there are also tutors who act like the support team of the institute. Their goals are to help students in any access issues (the use of the platform) and to lead and promote engagement in the online activities and throughout their journey.

Due to time constraints to develop such study, there was the need to choose one social and emotional skill from the development program to be the focus of this work. Therefore, critical thinking was defined by the researcher to be the focus of this present work, also considering the challenges of social inequalities in the Brazilian context.

According to hooks (2017), critical thinking skills demand judgment to achieve the central ideas and purposes, and not just the shallow purpose or statements that usually are the apparent ones. In a country where social inequality is normalized as a consequence of greater or lesser effort, where the fallacy of meritocracy is brought up as the most obvious (and accepted) explanation, thinking critically about this narrative is the first step in demanding change.

1.3. Purpose of study

This study aims to analyse the development of critical thinking skills in a blended learning model, focused on identifying and addressing issues related to the use of technology in this process. The perspective adopted in this study is based on Critical Pedagogy (Freire, 2014; McLaren, 2021; Gadotti, 2009; Anyon, 2011), considering the tendency of digitalization in the educational field and the biases related to digital solutions and online environments (Bayne, 2014; Selwyn, 2012).

The purpose is to make recommendations to improve the development program regarding critical thinking skills and the online platform.

1.4. Research questions

This study was led by one main research question and three sub-questions. These questions guided the researcher in composing the literature review for this work, and also to promote a better understanding of its motivation and focus.

The main question for this present research was:

What supports the development of critical thinking skills in a blended learning model?

The sub-questions were:

- What issues can be identified regarding the use of a blended model rather than an in-presence model, to develop critical thinking?

- How do students experience the development of critical thinking?

- Are there special aspects that need to be considered with low-income students, and if so, what are they?

1.5. Thesis structure

The present thesis is organized in 6 chapters. In chapter 2, the literature review is presented regarding social and emotional learning (both in Brazilian and broader context). In addition, the concept of critical thinking skills is introduced and complemented to critical awareness in Paulo Freire's Critical Pedagogy perspective. To finish the chapter, a comprehensive overview of the blended learning model is presented, connected to critical thinking development. Chapter 3 presents the research methodology with data collection and qualitative analysis. Chapter 4 describes the results of the study, the narratives of participants. Chapter 5, Discussion, reflects the results and limitations of this present. Chapter 6 suggests further research opportunities.

2   LITERATURE REVIEW

2.1. Social and emotional learning - an overview

Critical thinking is explained in this present study as part of a context of social and emotional skills development. Social and emotional skills refer to the regulation skills applied on emotions and thoughts in general. They differ from cognitive skills related to learning how to read/ write, for example, because they are related to self-perception, self-management and social interaction instead of processing new concepts or knowledge in general. (OECD, 2017; Bloom, 1956; EEF, n.d.; Eklund, 2018). Its theoretical basis is cognitive science - strategies that can module behavior and responses (Goleman, 1995; Hoffman, 2009; Cohen, 2006).

Social and emotional skills, also called 'life skills', 'soft skills' or 'non-cognitive skills', are widely described and organized according to the context such as the educational field, the job market, for self-development or for corporate purposes. According to OECD (2017),

> The term 'non-cognitive skills' refers to a set of attitudes, behaviors, and strategies that are thought to underpin success in school and at work, such as motivation, perseverance, and self-control. They are usually contrasted with the 'hard skills' of cognitive ability in areas such as literacy and numeracy, which are measured by academic tests. Non-cognitive skills are increasingly considered to be as important as, or even more important than, cognitive skills or IQ in explaining academic and employment outcomes. Indeed, there is now growing attention from policymakers on how such 'character' or 'soft' skills can be developed in children and young people. (p. 4)

The debate in the educational field about social and emotional skills development was primarily related to the consideration of other skills in the learning process, in addition to the intellectual ones. Several studies were made about the role of emotions and motivation in the learning process and, therefore, in the development of intellectual skills. Maslow (1954) described how motivation influences the learning process; Luria (1973) stated that considering social environments and how they influence in students' emotions, was as important as reasoning; Fonseca (2001) highlighted the role of emotions and promoted a broader discussion about intelligence and cognition: "Cognition without emotion is not conceivable when one considers that the individual's brain operates and acts systemically in a harmonious and melodic functional whole."(p. 56)

Some years after Mayer and Salovey's studies, made familiar for the general public by Goleman (1995), shaped a more complete description of the so-called emotional intelligence and its role in human development. In these studies, emotional intelligence is the set of abilities that provide self-motivation and persistence despite frustrations and setbacks, self-control to delay rewards and to maintain distress away in order to think appropriately.

The idea of plasticity of the brain, based on cognitive science, is widely explored as a way of learning through the change of mental habits and therefore, behavior and attitudes (Goleman, 1995; Duhigg, 2012). Self-awareness, managing emotions, motivating oneself, recognizing emotions in others and handling relationships are "domains" by which the author organizes the concept (Goleman, 1995).

Emotional intelligence and social and emotional learning (SEL) are connected through the possibility of learning new behaviors and due to this path, promoting self-development to achieve one's full potential. This theory was enthusiastically welcomed in educational settings in which neurosciences were highly considered to study, describe and understand cognitive processes (Gardner, 1994; Hoffman, 2009).

Also, OECD (2017) highlights the importance of developing skills such as empathy, social awareness and self-management in school environments:

> Social and emotional skills determine how well people adjust to their environment and how much they achieve in their lives. But the development of these skills is important not only for the well-being of individuals, but also for wider communities and societies as a whole. (p. 4).

In the education field, social and emotional skills development or SEL (social and emotional learning) is consolidated as one of the great trends of the last decades (OECD, 2017; UNESCO, 2019). Learning how to positively interact with others, how to act creatively, how to solve problems and think critically are now part of every school curriculum whether in specific classes or across the disciplines. Besides school environments, there has been a great ecosystem of courses, platforms, apps, materials and all types of support to develop social and emotional skills – not to mention self-help books. It is noticed that a profitable market has been formed around this idea, with effective options but also with shallow and fake products enjoying the fashion of self-development that, unfortunately, has somehow influenced SEL initiatives in many contexts and countries (Selwyn, 2010).

As a field of study, social and emotional skills development has also been criticized. Common concerns in this area are lack of clarity in the descriptions of each social and emotional skill, character and personality traits pointed out as skills to be developed - or adapted - according to the context. (Hoffman, 2019; Graczyk, 2000). In addition, whether in policies or in school curricula, there have been a wide range of interventions considering the use of soft skills development focused on reducing violence, addressing mental issues in the youth, promoting wellbeing, improving acceptance rates in college applications among others, and questions were arisen regarding its effectiveness and biases (Tinajero, 2016).

Another concern related to SEL implementation in the educational context is due to the issue of reducing the complexity of emotions management into "how-to-behave" appropriately (Hoffman, 2009). Cultural and social bias (not to mention gender and economic ones) must be considered regarding expectations the teacher, the tutor (and the institution) have as outcomes from a SEL implementation.

When it comes to designing a SEL using educational technologies, this issue can be even more important to take into consideration, given the bias of structuring the platform and building the journey for students. Which managing-emotions type would be considered the ideal one to be the reference? How to state that considering the complexity of cultures and how each one manages emotions differently? These are some of the questions to pose considering diversity in developing social and emotional skills.

About this issue, Hoffman (2009) states that

> Many SEL programs similarly highlight the key role of empathetic, caring, supportive relationships among teachers, students, and parents; cooperative learning opportunities; and allowing students both autonomy and influence in the classroom. However, the caring community, when translated into practice, becomes a discourse about activities and behaviors (...) In effect, substance is replaced by structure; feeling is replaced by form. Most tellingly, caring and community are conceptualized as things teachers teach children to do by getting them to behave in appropriate ways. (p. 545)

2.2. Highlights on social and emotional learning (SEL) in Brazil

Brazilian context regarding social and emotional skills development is not different from quality education and socioeconomic background: although there are many educational initiatives focused on promoting non-cognitive skills in students in basic education, this is concentrated in private schools; Brazilian public system has not implemented SEL so far, therefore there are great concerns of inequality of opportunities to low-income students (UNESCO, 2019). In 2016, focusing on reducing this gap among other objectives, the Ministry of Education promoted a comprehensive reform project in high school general curricula, both public and private systems.

The general guidelines of this reform were to make subjects more flexible, to establish mandatory and optional disciplines from which students can choose where to focus according to their interests and future projects, and to include professional education as a new field of study (MEC). Critics of the reform claimed it would undermine basic education in Brazil, reducing the importance of disciplines such as sociology, philosophy and languages, and focusing on the labor market rather than preparing students for life in a broader sense. (Paprotzki, 2016; Silva, 2018).

Social and emotional skills were included in the formative itinerary called Life Project, focused on bringing the student closer to his future projects especially for the labor market. Determination, effort, self-efficacy, perseverance, collaboration, responsibility, empathy, openness and understanding of the job market are the skills aimed to be developed in the Life Project itinerary (MEC).

Despite the benefits of the reform, there are some issues related to its implementation scheduled for 2022. First is related to the general structure of a national project implementation: there isn't any guideline to execute it providing a range of budget, staff training and other structural issues, therefore the quality of implementation in the public system might be inferior in comparison to the private schools (IBGE).

So, the reform is important but it seems that public schools, where most Brazilian students are enrolled (IBGE), are going to be far from a proper implementation. On the other hand, students from private schools will benefit from it and therefore, will probably access better opportunities in life. This process can be considered evidence of why the crisis in Brazilian education is known as *a project*, not exactly a *crisis,* since these fundamental elements are not considered.

Regarding the educational market around SEL or social and emotional skills development, great venture capital funds are investing in startups and other initiatives focused on SEL in basic education whether for private or public schools. Technology in the educational market supports the increase of investments more than 2 times compared to 2019, and the future projections are up to $404 billion by 2025. (Holon IQ, 2020).

This scenario is not different in Brazil with many education technology enterprises (edtechs) focused on SEL, offering their online solutions to solve the scale issues of the public system due to the expected implementation in 2022 - no doubt it is a compelling market as there are more than 45 million of students in basic education (IBGE).

After some highlights regarding SEL in the Brazilian educational context presented above, and given that critical thinking skills are part of the range of social and emotional skills to be developed in students, the next chapter is going to be specifically about critical thinking skills within the context of this thesis.

2.3. Critical thinking

Critical thinking is considered one of the most important social and emotional skills in several studies regarding the subject (hooks, 2017; OECD, 2017; UNESCO, 2019; Hoffman, 2009). This statement is especially justified due to the so-called post-truth actual context. Siebert (2020) states that the post-truth era is

> A historical moment with a significant increase in the speed of communication that, among other things, multiplies the amount of information we need to deal with on a daily basis. The term is now used to name this living immersed in new conditions for the production of meaning. (p. 242).

Since the advent of social media as a new source of information regardless of its veracity, there has been this phenomenon in which one can turn any fact into truth by sharing it several times, especially if that fact confirms their personal beliefs. Illing (2017) claims we are witnessing the disappearance of shared objective standards for truth. In this challenging context, reasoning through critical analysis of reality seems fundamental.

According to the literature consulted for the present work, it can be said that critical thinking skills have two approaches: one is mostly related to cognitive science, and the other is mainly connected to critical pedagogy and the concept of self-awareness. Although there is the cognitive approach in describing critical thinking, the core of this present reflection will be placed in how certain authors from critical pedagogy define critical thinking towards self-awareness and its development in students (Hooks, 2017; 2020; Freire, 2014; Anyon, 2011; Dewey, n.d.).

There are many definitions for critical thinking. Browne and Keeley (1998) define critical thinking as a skill related to the systematization of evaluation of arguments of people and the world. Ennis (1985) proposes it to be "reflective and reasonable thinking that is focused on deciding what to believe or do (p. 45)".

Scriven and Paul (1987) proposed another definition, which was more aligned to cognitive science and describes critical thinking as a set of skills related to conceptualize and analyze information accumulated by observation or experience, with the aim of having a guide of action.

Reasoning, logic, argumentation, decision-making through evidence, bias avoidance, among others are terms often used to describe critical thinking and how to develop this skill in the cognitive science field, which has the focus of dissecting the cognitive skills involved in the act of learning or apprehending a new skill.

Hooks (2020) brings a description of critical thinking that will be the basis for this present work:

> At the heart of critical thinking is the urge to know - to understand the workings of life. Children are organically predisposed to critical thinking (...) they demand to know who, what, when, where and why of life. In search of answers, they learn, almost instinctively, to think. Unfortunately, children's passion for thinking often ends when they are faced with a world that seeks to educate them only for conformity and obedience. (p. 22)

She claims that keeping the mind open is a requirement for developing critical thinking. In addition, imagination for understanding the facts from unexpected and atypical points of view is essential to get mastery of thinking critically. Not less important is humility of admitting that one can be wrong or simply doesn't know everything. She also brings the perspective of communities of learning to provide an ideal environment for critical thinking to flourish - this is highly connected to

democracy and horizontal relations, in which everyone is responsible for maintaining the minds open and humble to intensify learning. (Hooks, 2017).

Hook's statement leads the reflection to a critical perspective related to the irony of the need of teaching critical thinking skills in schools, after they have been silenced due to the same schools. Therefore, there is another possibility to study and to develop critical thinking skills, and the approach is through Critical Pedagogy.

Dewey (n.d.) states that critical thinking "is always more or less troublesome because it involves overcoming the inertia that inclines one to accept suggestions at their face value; (...) in short, means judgement suspended during further inquiry; and suspense is likely to be somewhat painful." (p. 181). People are more willing to accept what is presented as an explanation for the phenomena around them. With that in mind, the importance of critical thinking gets a new role in how to understand the causes of social inequalities, which encompass much more than individual accountability ("I'm a failure" belief). In addition, an effective understanding of the causes for social inequalities is the first step towards change.

Hooks (2017) describes thinking critically as a way to manage ideas, concepts and reality itself, and to focus on understanding the central and implicit truths, not merely the obvious truth that lies on the surface. This is an everyday exercise to avoid alienation and manipulation.

Hooks and Dewey claim that the primary goal of education is to make students critical thinkers. This was also the objective of Paulo Freire.

2.4. Critical thinking, critical awareness and Paulo Freire

Brazilian educator and philosopher Paulo Freire is one of the most remarkable thinkers on pedagogy in the world. He is best known for his book Pedagogy of the Oppressed (2014) in which he described his 40-days literacy experience with adults in the poorest countryside of Brazil in the 60s. Through this context, he brought his energetic claim for developing - through literacy and school - critical awareness, collaborative work, determination among other social and emotional skills focusing on freeing the poor oppressed by the elite, instead of adapting them to the new demands and narratives of the market.

Despite Freire's work in educating the whole person and promoting his full development, he has hardly ever been mentioned in studies related to these themes. Unfortunately, his Marxist position and approach are more highlighted than his great contribution to students' global development, especially to the vulnerable ones.

Freire claimed throughout his work that the main objective of education was to make the student aware: "Literacy is awareness" (1996, p. 19). This means, making people understand their situation as the oppressed, so that they can act for their own liberation, especially socio-economic vulnerable people

He stated that education has to make people uncomfortable with the existing world, opposite to the mainstream influence in traditional schools focused on accommodating students, teaching them to better manage their reality instead of questioning it.

According to Freire's work, a person without critical thinking/ awareness lives in alienation in which "reality in thought does not correspond to objectively lived reality, but to the reality in which the alienated man imagines himself" (2018, p. 105). Therefore, to develop this awareness becomes a condition to freedom, and to leave the objectification state towards humanization (Freire, 2018).

Freire (2018) brings the concept of cultural action that can humanize or domesticate:

> Cultural action for freedom is characterized by dialogue and its main aim is to raise awareness among the masses. On the other hand, cultural action for domination is opposed to dialogue and serves to domesticate the masses. One problematizes, the other launches slogans. (p. 108)

His approach was to intentionally search how to help a person to rediscover themselves through critical awareness of their reality. This would support them to pursue their full potential rather than just surviving despite of deprivations of social inequalities.

2.4.1. Banking model of education

Freire stated that alienation was an intentional product of the traditional educational model which he called as the 'banking model of education', a practice where students simply stock the information transferred to them by the teacher. In the banking approach, students' routine is organized in a way that the focus is to remember the information delivered by the teachers; they are not invited or encouraged to take active roles in the classes, and the reality is explained as fixed events in which everyone has to fit in. Students are considered boxes into which teachers must "deposit" information.

About this metaphor, Freire (2014) explained that

> Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the

> students patiently receive, memorize, and repeat (…) In the banking con-
> cept of education, knowledge is a gift bestowed by those who consider
> themselves knowledgeable upon those whom they consider to know
> nothing. (…) The more students work at storing the deposits entrusted to
> them, the less they develop the critical consciousness which would result
> from their intervention in the world as transformers of that world. (p. 58)

With this metaphor of the banking model of education, Freire stated that the prac-
tice of education was a constant exercise of democracy. A critical teacher within
a classroom must be aware of creating a democratic and egalitarian relationship
between students and teacher, students and learning, and students and society
(Shor, 1993).

In addition to the democratic perspective between teachers and students, he
claimed that the teacher has a great opportunity to learn from them while teach-
ing. Opposite to the mainstream idea of students being whiteboards or empty
boxes as he stated, he defended that the learning process was an exchange of
knowledge and perspectives of the same world.

Freire's work is always related to practice. Although he had important concepts
that are connected to the social sciences, he created a method focused on calling
his readers to action: "we need to propose to the people, through certain basic
conditions, their existential, concrete situation, present as a problem that, in turn,
challenges them and, therefore, requires a response, not only at the intellectual
level, but at the action level." (Freire, 2014, p. 120)

His approach in teaching literacy for adults was focused on students' reality, from
which the teacher starts by picking important words related to their social and
cultural context. From these words, the literacy activities take place, always con-
sidering the meaningful words for them. Therefore, this process ensured motiva-
tion, engagement and worked on self-esteem, taking the student out of the con-
dition of an object to place him as a subject, that is, as an active part of the pro-
cess. His classes or work groups, called circles of culture, were focused on the
premise that "language is culture, man is subject - learning how to build his words
is also building/ rebuilding his world, and his condition in it." (Freire, 2014 p. 56).

Every circle of culture was made in groups with the intention of getting the com-
mon words, promoting dialogue and identification among the participants. There
was a coordinator focused on ensuring the ideal conditions for learning and me-
diating the process.

As the student started to learn how to write some selected words, critical reflec-
tions upon their meaning took place at the same time with the same importance.
By learning to write the words, students were encouraged to think critically about
them: "To think the world is to judge it; and the experience of circles of culture
shows that the learner, when starting to write freely, does not copy words, but
expresses judgments." (Freire, 2014 p. 16)

His literacy method wasn't focused on how to repeat words without any meaning for the student, but in placing him in an active role of reinterpreting the words of this world, so that, in other situations, he would be able to say his own word. Freire's focus wasn't only on teaching adults to read and write, but developing critical awareness or consciousness (conscientização) through the literacy process.

To Freire, being aware of oneself and the world (conscious) was a human capacity to distance oneself from things (objects) to take a stand as a subject (as a human being). It is man's attitudes and choices in the environment around him that can favor his humanization (being a subject instead of an object, or an alienated being). (Freire, 2014).

Conscientização (consciousness) is directly connected to critical awareness and therefore, to critical thinking. It represents the development of critical awareness (Freire, 2014). It can be said that critical thinking and critical awareness are synonyms or different types of explanation for one single purpose.

Freire states that one becomes human through critical awareness rather than adaptation, which is totally opposite of what the educational system strategies often provide. Critical awareness or critical thinking is the goal and the outcome of Freire's method, and his understanding of education. He states that (2004)

> Education makes sense because women and men learn that through learning they can make and remake themselves, because women and men are able to take responsibility for themselves as beings capable of knowing—of knowing that they know and knowing that they don't. (p. 15)

According to Freire, education is the practice of freedom, and this occurs through the development of critical thinking, or critical awareness. Freedom in Freire's context is related to being conscious about the attempts of domestication by the dominant group through education and a constant gentle request of subservience, therefore it is possible to write a fairer and more inclusive future.

His work in education was focused on encouraging people about their liberation, inviting them to reflect on their domination (Shor, 1993). Freire (2014) states that

> The struggle for humanization, for free work, for non-alienation, for the affirmation of man as people, as 'being for himself', would have no meaning. This is only possible because dehumanization, even if it is a concrete fact in history, is not, however, a given fate, but the result of an unjust 'order' that generates the violence of the dominators and this violence, generates the *being less*. (p. 41)

Darder (2015) describes Freire's metaphor to develop critical awareness "as a road yet to be made; which, because it is unknown, must be traced out step by step, in our organic relationship with the world and in the process of our labor as educators, activists, and revolutionary leaders." (p. 7).

A Freirean critical teacher is a critical thinker and a problem-poser (Shor, 1993) rather than an empty-question-maker, provoking students to develop their own questions about the world. In a context of deep social inequalities such as in Brazil, it can be assumed that critical thinking/ awareness is important to identify the anomies (Durkheim, 1977) and the patterns that maintain and support those inequalities. In this way, it is possible to contribute to their reduction.

The connection to the main question of this work relies on the need of strategies to develop critical reflection of reality - would it be possible using a blended model? What issues can be identified with the use of a blended model to promote such reflection?

2.5. Blended learning model and critical thinking development

In the context of this present work, blended learning refers to digital online (distance) technologies being used in a combination with in-presence (or face-to-face) learning strategies for educational purposes. The meaning of the word "blended" lies in the use of two or more strategies and settings (in this case, online and in-presence settings). Chew, Jones and Turner (2008) state that "In a crude manner, blended learning involves the combination of two fields of concern: education and educational technology" (p. 40)."

In general, blended learning in the educational field uses digital platforms, which can be constructed for specific purposes or subjects, or generically adopted according to the learning objectives. Over the last years, these digital solutions for learning have become increasingly present in private or public education (Decuypere, 2021). Digital online platforms are "A programmable digital architecture designed to organize interactions between users, not just end users but also corporate entities and public bodies. It is geared toward the systematic collection, algorithmic processing, circulation and monetization of user data. (Dijck, 2018, p. 4)"

A crucial factor regarding online platforms is their architecture, that is, how the users (students, teachers among others) experience the software interfaces, and this is not at random; rather, it is strategically organized (Bryan, 2016; Decuypere, 2021). There are basically two kinds of interfaces in a digital platform: the graphical user interfaces (GUI), and the application program interfaces (API). GUIs are the presentation or interface of the platform for the users; in other words, how interaction with users is possible. Regarding the GUIs, Decuypere (2021) notes that

> the way GUIs are crafted and visually presented is not a neutral attainment, but a highly contingent and very powerful way of ordering that serves amplificatory purposes: GUIs display a particular sort of reality, which commonly seeks to convince the user that the world is being depicted 'as it really appears' (p. 5)

APIs, in turn, are the programs responsible for the interaction between external applications and the platform. They permit platforms, softwares and modules to integrate so that they can communicate with each other. Besides this specific architecture, there is another feature to be considered (Srnicek in Decuypere, 2021): the platforms are intermediaries within the learning process, gathering a teacher, a tutor, a corporation or an institution that has something to offer with the user (in this case, the students). Furthermore, some have suggested that the digital embodies and brings in politics in the classroom and in education (Ball & Grimaldi, 2021).

These two features (specific architecture and serving as intermediaries in the learning process) may be considered issues of blended learning because they are not neutral. As Decuypere (2021) states, "Rather than simply hosting content, activity and interactions, platforms set the stage for how all this can come about, and which specific sorts of content, activities and interactions are possible and permissible (and which not)" (p. 5). Are these aspects considered when a school or an institution decides for one platform? How to analyse a platform for critical thinking development considering such biases? How do students experience the development of critical thinking on such a platform?

These are some issues that will be discussed regarding the use of a blended model rather than an in-presence model in developing critical thinking in the context of this research.

3   RESEARCH METHOD

In this chapter, the context of the present study is described as well as the research method chosen for the data analysis, which was narrative inquiry. Furthermore, the process of outlining the interviews, the reflections on the entire process and the narratives are presented.

3.1. Choosing the methodology

To justify the use of narrative inquiry as the research method, the main research question is as follows: *what supports the development of critical thinking skills in a blended learning model?* The main question is supported by the following sub-questions:

- What issues can be identified regarding the use of a blended model rather than an in-presence model, to develop critical thinking?

- How do students experience the development of critical thinking?

- Are there special aspects that need to be considered with low-income students, and if so, what are they?

The object of the present study is the process of critical thinking skills development. This will be studied by gathering students' stories about their experience in increasing critical thinking using a blended model, examining how the process was through their perspective - through their *narratives*.

The intention is to identify issues and to understand best approaches when building up critical thinking skills in students. Furthermore, the aim is to raise special aspects (if any emerge) that might be considered by the implementation of this process in a group of low-income students.

Narrative analysis allows a contextualized and integrated understanding of participants' beliefs, perspective and prior experiences regarding critical thinking development. The reason narrative inquiry was chosen was the possibility to understand the experience of the participants in developing critical thinking skills in a specific context (Riessman, 1993). Participants' stories or narratives might not be a precise excerpt of reality; however, they can provide important contributions about their context and perspectives through their subjectivity.

3.2. Narrative inquiry

Mertova and Webster (2020) describe that "narrative inquiry is set in human stories" (p. 3). Clandinin (2018) states that narrative inquiry is the study of experience, which is essential. And to understand experience, understanding experience over time is mandatory because stories come from somewhere and go somewhere.

Clandinin (2008) states that narrative inquiry is "both a view of the phenomena of people's experiences and a methodology for narratively inquiring into experience and thus, allows for the intimate study of individuals' experiences over time and in context" (p. 2). In the context of the present work, this method has been chosen due to its emphasis on the research participants' narrated experiences, especially their understanding of the process of critical thinking development.

As the present study intended to examine a learning process (the development of critical thinking in a specific group through a blended model of learning), narrative inquiry supported the analysis of the participants' perspective because it was convenient to address the complexity of this process. (Mertova and Webster, 2020).

The stories come from a version of the story told to the researcher, and it is co-elaborated between the researcher and the participant to bring some message or point (Riessman, 2008). This brings to the discussion another feature of the

narrative inquiry, which is the possibility of a prolific collaboration between the researcher and the participants.

3.3. Context

The context of the research was a Brazilian social institute, which assists high achievement low-income (HALI) students to find better opportunities through education and self-development. Besides full scholarships to top-tier private schools, students also receive emotional support on all accounts of their experiences and a comprehensive on-site program aimed to improve socio-emotional skills, led by a team of psychologists and educators.

In 2015, determined to expand its social impact, the organization designed and launched an online version of the on-site development model that has reached more than 4000 students, and the plans for the coming years include its national extension.

The online development program is composed of an online platform in which activities of reading, reasoning, challenging and reflection are uploaded, aiming to develop social and emotional skills. Besides the platform, there are at least 3 face-to-face meetings with the online students per year, focusing on expanding the sense of community and reinforcing the online development program.
There are also tutors who are educators, that have the following scope:

- helping students in any access issue (the use of the platform)

- leading and promoting engagement in the online activities and in the face-to-face meetings

- motivating students throughout their journey in the project

There is an expectation of 2 hours per week of use of the platform. The students that achieve this expectation are considered "highly engaged".

3.4. Selecting the Participants

The participants were two students from senior year of high school with longer participation in the project (at least 3 years). The rationale was to listen to students that have been part of the institute for more than one year, since they participated in at least one complete cycle of social and emotional skills development provided by the program.

The group of students was also narrowed down by choosing the highly-engaged ones (those who have been weekly active on the platform since the beginning of the program). Due to time concerns, and also because the quantity of the sample

is not the focus in the narrative inquiry (Clandinin, 2008), it was delimited in two highly-engaged high school students of the senior year. That said, the fact that only two participants have been interviewed for this study was not an issue, due to the relevance of discussion being based on a deeper examination of their experience rather than the sample size.

In addition, the focus in narrative research is on the 'trustworthiness' of side notes and transcripts of the interviews (Polkinghorne in Mertova and Webster, 2020), unlike the quantitative research.

3.5. Collecting the Narratives

Narrative interviewing approach was defined to collect participants' stories (Allen, 2017), as the objective of this present research was to understand how students from a hybrid/ blended learning model compose their experiences regarding critical thinking. This approach is focused on providing an "opportunity for the participant to narrate his or her experience for the researcher, representing a shift in the format of the roles in an interview: from interviewer-interviewee to narrator-listener." (Allen, 2017, p. 2).

In narrative interviews, there is not a set of questions to be asked from the participants. Instead, there should be a guided interview that invites the participants to tell their story to the researcher. In addition to the appropriate guide, building rapport and connection with the participant have fundamental roles during the interviews in narrative research, so the researcher "must be even more skilled at building and maintaining a connection with the participant" (Alen, 2017, p. 3)

There was one meeting scheduled individually with each participant, that was almost 2 hours long. First, the objective of the research and the concept of critical thinking skills were explained. Second, the concept of social and emotional skills was described, focusing on the differences from the school content (Interview guide in Appendix 1).

These first two steps were taken to promote more collaboration between the researcher and the participants. As Creswell (2007) writes, "There may be a strong collaborative feature of narrative research as the story emerges through the interaction or dialogue of the researcher and the participant(s)" (p. 67).

The interviews were conducted from a script with semi-structured questions addressing themes related to the participants' life. The interviews were conducted as follows:

- General questions on past, present and future events

- More specific questions on the social and emotional development, first in their life and then in the context of the social institute

- A question related to the development of critical thinking, in their life and with the hybrid experience in the social institute (see also Appendix 1: Interview guide)

The researcher conducted the interviews through video calls using the Zoom app. During the interview process the researcher noted down several initial thoughts and side notes. The interviews were transcribed and the transcriptions were triple checked against the recorded videos by the researcher to ensure exactness. The researcher edited the transcriptions to protect the identity of the participants and the institution.

The plan was at first to use the guide in the same order with both students. However, as expected, the interviews hardly ever followed what had been planned. The guide was important to conduct the interviews, but some of its items brought up stories and other themes related to the main subject.

4 THE NARRATIVES

After getting familiar with the interviews conducted, recorded and transcribed, the next step took place, which was the design of the participants' narratives.

The narratives were built based on Allen's approach (2017), considering them as stories, organized into past, present and future to promote a better reading. Furthermore, the excerpts concerning critical thinking development were highlighted and analysed according to the literature composing this present work.

4.1. The students

As previously pointed out, the participants were students highly engaged within the project and both were from the last year of high school. Named here as Pedro and João, they were focused on applying to the undergrad exams in high-quality universities in Brazil.

Pedro was applying to Social Sciences and João, to Chemical Engineering. Pedro studied in a public vocational school (in Brazil, one can apply to university even attending technical high school/ vocational school) and João studied in a private school in São Paulo with full scholarship. Both were from low-income families and first-generation applying to undergraduate studies.

4.1.1. Pedro and the awareness of his self-development process

Before the scheduled meeting, Pedro seemed in doubt of his participation. He had cancelled the scheduled video call twice and took a long time to finally confirm the last invitation.

In the beginning of the meeting, it was noticed that he was answering or commenting the questions disinterestedly, with short sentences and few details. However, little by little he began to contribute in a frank and intense way, extrapolating the guide of the interview with long and prolific comments about his perspective of education, his reality and the consequences of social inequalities, in addition to his perspective of how critical thinking skills were developed.

"I can't stop thinking of why things are the way they are. For example: Why is my [public] school bad? Why are there quality schools where I'll never access because I'm poor and can't afford them? Why this system? And the worst is that I'm aware that I have some privileges because of this social project I'm part of, but then I feel bad looking around and seeing my brother and my friends with nothing." He stated he was very angry with inequalities he could see around him and how these affected his accomplishments and development. In his narrative, it was possible to see the importance of schools and teachers for his critical perception of reality.

When it comes to critical thinking/ awareness, he remembered a game made by one of his teachers in middle school: *"When I went to school, a teacher presented to me the 'game of why': questions using 'why' to get to the core of one situation, first with concrete stuff like 'why are classes so early?' with answers that were hit with 'why' until we didn't have other answers, then evolving to other themes such as 'why is your mother's wage the same amount of money as a pair of Nike sneakers?', with variations to 'who' and 'what', in which I understood later that it was a call to action like 'what can you do about that?'. I guess this game was the first experience I felt I had learned critical thinking, and this has affected me a lot in terms of being indignant with the many inequalities we've been noticing and living in Brazil."*

He was aware that this game was not part of the official program in public schools, but rather a specific learning strategy his teacher once developed with his classroom; it was not part of the content or the syllabus, but his teacher's personal initiative, an exception, therefore: *"People from public schools like me usually say that education is poor and bad because this is the way things are, and I can understand why they see things in such way, because public education in general doesn't teach you to think, to be critical, to get to know your rights, for example. So they don't understand that quality education is a right, not an exception."*

He described critical thinking/ awareness as a no-way-back process: *"I think it's a process that after you realize there are things wrong, and there are things to work on, it becomes more difficult, but at least you can get an overview, right, to understand this is wrong and that we have to do something. Maybe I won't fix things, but at least I am trying to reverse some processes that I'm destined for,*

you know, like, for example, people like me, who was born in the periphery, will work for the rest of his life in underemployment, will work with anything underpaid to survive. I realize that something is wrong there, that the main failure is in education, therefore I will invest in my education, as difficult as it may be, as much as I have to do everything myself, it is the way, right, here that I will have some results and having some chance of changing my future."

He perceived the social project he is part of, as a tool that is helping him to change his life through education. Regarding the platform to develop critical thinking, he was skeptical:

"I think having a critical look... It is not the kind of thing we work within a computer, right, in a text, and then at the end of the month we put it there, 'I'm very good at critical thinking'... I guess this doesn't work that way. The face-to-face meetings [before the pandemic, there were 3 in-presence workshops a year with activities and interaction], they were very interesting, they were cool, because they encouraged us to do this group work thing and everything else. Even though with an ideological bias, as we discuss companies and the market more than our social condition, professions and our future... I mean, things that are important but shallow in a way, you know… But then there was this thing about group work and thinking critically in groups that was interesting, but to say that I developed this skill in a platform, I don't think, I think it's much deeper and things are superficial even in those meetings, and worse within the platform."

"To start, I think critical thinking is not 'done' through a computer screen... Now, for me, all this for distance education is the maximum scrapping of education, right, we have been dealing with this for 2 years and everything seems to be normal, but I never liked it, I never found this idea interesting and I still don't, so the online project to develop critical thinking, which is a thing of debate, doesn't work online. As teenagers and from a low-income background, we don't know very well where we come from, where we are, how we feel... And then we have to reflect on a computer to be more critical? How can this work well? I see a lot... A lot of controversy... Something that doesn't fit, it seems like it's just a fallacy with good intentions."

About his future, Pedro seemed focused on changing his reality through a high quality undergraduation. He was worried about Brazilian high school reform and its impact on developing critical thinking skills among others. His narrative combines deep concerns about his future as well as about others like him (his younger brother, for example). In addition, his future plan of going to college has the goal of actively contribute to decrease the losses in quality education and critical thinking development. According to his perspective:

"There is no Philosophy, Sociology in the first two years of high school. I started attending these classes only now, in the last year, and it's only one class a week, 50 minutes! And I don't have History or Geography. I didn't have one single Brazilian History class in high school!! This is very sad because, you know, humanities are the ground for being critical. And now I'm attending 'life project' classes and also technical classes focused on the job market. So I'm cool because I can see the problems there, but what about my younger brother and the others, for

example? This is not good and I hope I can somehow help being a social scientist".

4.1.2. João and his focus on getting to university

João was fast in confirming the meeting and seemed excited about the possibility of discussing with a "scientist", as he replied. He told his story through the guide with interest and took notes about the authors used in the literature review of the present work, telling that he would like to read some of them he hasn't already read before.

He highlighted the turning point of the move to a private school, his expectations regarding this change and also his self-perception as a student: *"The most important moment in my past was when I left public school and went to private school. At that moment my life changed completely, because I thought [studying in a private school] was one thing, but when I arrived I saw that my reality was totally different, you know? Like, I thought I was a genius, I was like 'I'm the smartest person in the world', you know? And then when I joined the private school I realized that I wasn't, you know? It wasn't exactly that. I have always got a 10 out of 10, and then I literally cried because I got a 4 on a test, it has never happened before! And that really was something that changed my life, I learned a lot about myself".*

According to his narrative, it was a moment when he began to realize that other social realities existed, and these inequalities had consequences: *"And I also realized there are several realities, you know, because I live in a shanty town so I have my own reality and I didn't know the others until that moment. For example, I didn't even know it was possible to get a full scholarship or a course at Yale, UN simulation, or attending theater classes. This was something for me that was not part of my reality, and then when I got the [name of the private school he got a full scholarship], it changed a lot, you know? Like... I got to know that I really was another person, from another reality and that was it, I think it was a very remarkable thing like that."*

At the same time this was very inspiring for him, it was also a concern because of the great differences he noticed regarding academic background. In addition, socio-economic differences arose in his discourse as the main cause of this lack of repertory:

"I think English classes, for example. In my old school, it wasn't something I worried about too much, but when I got into this new school, I realized that I was behind and knew less than a half that was needed at that point. And for me it was even more difficult to get on track because I saw everyone in my class was born talking in English, you know, his grandfather speaks English, parents, neighbours, friends, besides their vacation trips to the United States... My grandparents and parents have never been to college, do you understand the distance?

For example, there was this guy who went to Canada, stayed there for two weeks because he wanted to improve his English… And he was not the exception, you know? I was the exception there. So English was my real fear in the beginning. Teachers came to classes talking only in English, it was kind of forbidden to speak Portuguese, you know? That was something that worried me very, very much. I was like "Oh my god, where am I? What's going to happen now?" I swear, that was my biggest concern.

He was also deeply concerned about his routine change, especially concerning his acceptance for being a low-income student in an elite school, and this was hopefully gone by his first-day new friends and successful experiences related to that. However, despite his positive outcome, he took an initiative to become something like an "ambassador" to welcome new low-income scholars, helping them feel comfortable within this new context:

"I was very scared because I'm very shy... Then I had to make new friends that were very different for me, and I was afraid of being bullied because of where I came from. But hopefully it was totally contrary to what I imagined. People are very nice at my school and everyone, employees and students, teachers and board. And then that fear, on the first day, just disappeared, you know? I felt very welcomed at school, really... And now I try to help the freshmen every year by creating a group to build intimacy, you know? I swear to you, there were people there that on the first day it already seemed like we'd known each other for years, it was really like that. And then the fear of suffering some prejudice like that was gone, you know?"

During his narrative, some points of reflection and explanations linked to his critical thinking could be identified, such as awareness of the better socio-economic conditions, the more opportunity of learning and practicing another language. In other words, he seemed to be aware that his difficulties were a product of deprivation of quality education, just because he came from a low-income reality:

"I can't say I have critical awareness, you know, but I manage to get a better sense of what is happening in the world. I am aware of the social differences that I had, this perception of criticism, you know? For example, I think to myself things like 'man, that person travels all over the world and my mother couldn't even go downtown in São Paulo', you know? 'Wow, that girl there, she speaks English since she was little, and my brother only had the opportunity because he got a scholarship', you know, things like that. So, I kind of noticed this thing [critical awareness] was coming up."

He highlighted the change of context, from public to private school with a scholarship, that provided him a new form of self-perception and understanding of the world: *"When I was at my public school, I never realized it, it was like 'everyone had the same freedom as me'. As I said, when I studied at my public school, I felt I was a genius, but I realized that actually my education there was a little flawed, I mean, it wasn't that good, the thing is I didn't have parameters so that education was the best I could get. However, now I know there are contents I've never seen in my life, and people here [from his private school] have been learning those*

since their 7th grade. It's the same to have a laboratory to apply chemistry contents with assistance and all the equipment, like that. So this is something I've been noticing, you know, these differences. There isn't any private school in my neighborhood, so I have to commute almost 2 hours to my school, and this is exhausting. Another thought that comes to my mind is that I am really a case among millions, you know? At my [private] school, I'm the only black guy in my school year, and all the other black students like me study there because they have full scholarships, you know? It's hard, because it seems that there isn't any black family who can afford a private school like mine, and why does that happen? So critical awareness it's more or less in that sense, I guess."

When it comes to the platform to develop critical thinking, he could see progress and seemed more opened to that than Pedro, but missed the in-presence workshops as well:

"I think the platform provides a nice amount of activities and tasks that force you to think, I mean, critically, to work in groups and to get to know people, so this is great. The missions [the activities of the platform are called Missions] help us to understand better who we are in a way, you know, reflection.

Thought the Missions (online activities aimed to develop critical thinking skills), and face-to-face workshops with the same goal, he mentions he could see the world around him more critically, but he emphasizes his critical self-perception and self-knowledge:

"We know a little more about society, about the things that surround us, but it also helps a lot for us to criticize ourselves, to get to know ourselves, I mean, to learn about our strong points, our weak points, what we can improve, and this is cool. For example, because of the missions, I realized what I wanted to do in life, you know? Because I got to know the university, I met people that are studying chemistry and could talk to them, I knew about other courses, these things that [the social institute] provides, you know, how it works in practice. The only thing I miss is the face-to-face activities [the workshops], because I learned so much with my other colleagues and with the tasks… And it was nice because you see that you are not alone in your difficulties, so I miss those workshops a lot, and I guess everyone does."

Regarding the future, João suggested he had a structured plan, more focused on his own goals: *"Well, I want to do chemical engineering in the future. Chemical engineering is a very universal area, so I want that because its job market is very broad and I see myself that way, you know? But what I really want is the forensics expertise, which is different, but I like that area. And from now on, my dream is to get accepted to the entrance exam, I want to do it at [name of private college], I know that most people think public universities and such, but my dream is to go to [name of private college] because it is one of the best in my course. Besides, in public universities they focus a lot on industries, factories, whereas at [the private college] it better prepares you for forensics expertise. There's also the infrastructure issue, and [name of private college] has the same laboratories and such as [his private school], so it's the same network. And I feel I'm ready, you know?*

And that's it, more or less, now it's just a matter of getting the entrance exam that is going to be in November."

5 DISCUSSION AND CONCLUSIONS

As previously presented, the main goal of this work is to examine what supports the development of critical thinking skills in a blended model of learning. To achieve this goal, some sub-questions were defined, referring to:

- The students' experience of their development process

- Possible issues related to the use of the blended model instead of the in-presence

- Aspects to be considered (if any) given the context of socioeconomic vulnerability of the students

The main results indicated that the major support for the development of critical thinking skills were the in-presence meetings, mentioned by both students, and the interaction with other students focused on intentional themes that generate critical analysis.

The online platform was mentioned more as a tool to help in this process, but the emphasis concerning effectiveness and meaningful experience was in the in-presence meetings. In addition, the findings suggested that the social inequalities participants lived, were used as an effective theme to develop critical thinking/awareness, as a similar rationale as Freire's method (the generator themes) from the circles of culture (Freire, 2014).

Therefore, how did Pedro and João experience the development of critical thinking? According to their narratives, it seems that this development didn't occur only through online activities within a platform, but rather, in the social interaction, triggered by the need to digest the deep social inequalities. Freire (2014) states that "authentic education is not made from A to B, or from A to B, but from A to B, mediated by the world". (p. 116). In the context of students' narratives, the real world acted like a more effective mediator for critical thinking skills development than the online platform.

In the educational process in general, the use of knowledge has not been to promote awareness of social inequalities and its consequent losses in human's development process. Because of that, it has been the opposite to what Freire claims: "Knowing, to Freire, means being an active subject who questions and transforms. To learn is to recreate the way we see ourselves, our education, and our society." (Shor, 1993, p. 25).

This has not been the goal in formal education, and Pedro seemed to be aware of (and uncomfortable with) that, according to his narrative. His understanding about the role of education can be related to the so-called counter-hegemonic education, which can be described as a devotion to studies, to intellectual life as an act of resistance and a possibility of change (hooks, 2017).

Going a little further on the role of education, it is noticed that there has been pressure on education to turn it into a "production line" of labor for the new demands of the job market, especially in developing countries (Ball, 2021; Carvalho, 2017; Mueller, 2020). Those outside the productive living conditions according to neoliberal perspective, "are considered a social risk that requires intervention, monitoring and evaluation. For this reason, children from low-income families have been seen as human capital to be developed in terms of specific knowledge, skills and abilities." (Carvalho, 2017, p. 177).

The purpose of developing critical thinking skills in low-income students must be to develop critical citizens, aware of their lives, potential, challenges and injustices regarding their reality, not to have useful workers well trained for the 21st century job market.

This can be considered an issue regarding the theoretical references and bias of those in charge of the syllabus and curriculum, whether from school contents or from a social and emotional skills development program. Pedro's perception of his experience in the development program was that "we thought about companies and the market more than our social condition, professions and our future…"
His experience within the development program accessed through his narrative, suggested that he expected more activities related to students' underprivileged socio-economic status, rather than the pragmatic approach focused on "professions and future".

In addition to that, Pedro mentioned "ideological bias" to describe the superficiality in the discussions about the job market and companies, rather than his challenges in real life due to his social inequality. Is it possible to state that being shallow is a way of being biased? To what extent an online program can develop this specific skill, object of the present study? Can this point be considered an issue to be addressed to increase students' journey within the social institute? According to the findings in the present work, it was not clear due to limitations of this research, how the digital platform to develop critical thinking was built to organize interactions between users, the social institute itself and other partners (Dijck, 2018).

According to the participants' narratives, interaction appeared important for developing critical thinking skills. Therefore, this should be considered when developing an online platform. Both affirmed the face-to-face workshops, classes and other experiences, whether promoted by the social institute or by their schools, were more effective to develop critical thinking skills. While Pedro mentioned a game he played in his school, for instance, João didn't mention another experience before he was a scholar in the social institute, describing the Missions (online activities aiming to develop critical thinking skills among others). However,

João brought up later in this narrative that in-presence workshops were a more effective experience to think more critically.

Comparing the narratives, it seemed that Joao's experience in the platform was more successful than Pedro's, as he mentioned the tasks of the so-called Missions as a way to develop critical thinking/awareness. The latter affirmed that developing critical awareness "doesn't fit" in an online platform: "As teenagers and from a low-income background, we don't know very well where we come from, where we are, how we feel... And then we have to reflect on a computer to be more critical? How can this work well?"

João, on the other hand, seemed still unsure of his critical thinking skills, but stated he was in a process: "I can't say I have critical awareness, you know, but I manage to get a better sense of what is happening in the world (...) So, I kind of noticed this thing [critical awareness] was coming up."

Both Pedro and João were aware of social inequalities and their consequences. However, Pedro didn't recognize the online project's contribution to this critical awareness; on the contrary, he didn't believe online environments could develop critical thinking skills.

João recognized he had developed more critical awareness by his experience in the social institute within the online model. However, his narrative told another story: it was more focused on sharing his in-presence experience in the private school he was a scholar - his reflection on the social differences due to the opportunities lived and seen, the identification of his academic losses due to his disadvantaged socio-economic background, among others.

It can be said that João just mentioned the activities from the online platform, but his story brought another version when he described the interaction face-to-face with new colleagues from his private school and his expectations around them - his subjectivity, so to speak.

Can this be understood as the development of critical thinking depends on human in-presence interaction, mediation by a teacher or a mentor? If so, how to picture this in an online model? A further question could be: can the online model support this type of development?

Freire (2014) claims the importance of the relationship between learners and teachers: "No one educates anyone, no one educates themselves, men educate themselves mediated by the world" (p. 23). According to his critical perspective illustrated by his quote, education (here taken as development) is only possible through social interaction, and this promotes deep reflection in a dialectical form of self-development. Students' narratives suggested that the in-presence model was necessary to state their process of being critical thinkers.

Hooks' contribution to this point relies on her quote of the power of a conversation: "The conversation always involves giving. Genuine conversation is sharing power and knowledge; it is an initiative of cooperation." (2017, p. 61)

Regarding students' perception of the future, Pedro brought more negative aspects on his education as a system, mentioning the losses in Brazilian educational reform and its impact on the development of critical thinking of the next generations, due to the focus on preparing them for the job market rather than preparing them for life. João, in turn, seemed more focused on changing his own reality through a structured plan to get to higher education. He detailed his application plan and why he chose a specific private university for his undergraduation.

While Pedro declared his discomfort in using the Missions due to job-market-centered and shallow debates, João brought how useful they were in his process of self-knowledge and professional decision-making. Two opposing perspectives of the same experience. João seemed self-centered and focused on his individual plans for his future. Pedro seemed indignant to how things worked so far and concerned with the near future due to educational reforms focusing on reducing reflections and increasing education for the job market.

João's narrative indicated pragmatism (doing what is necessary to better adapt to this opportunity of quality education, making his future plans accordingly, online platform as something useful promoting self-development and repertoire). Pedro's narrative indicated skepticism related to the online platform and the social institute as a whole (shallow biased reflections, ineffective platform, uncertainty for his future).

In general, children have this urge to know and to understand the working of life (hooks, 2020). However, they are taught in school to be obedient and in a functional adaptation to access new steps in their schooling. Pedro and João didn't have a different process, but they were fostered in their schooling experience (whether intentionally or not) to be critical in how things were organized and presented to them.

The opportunity of being part of a social institute, in which critical thinking had been presented through a blended model, seemed to be another opportunity for them to add more critical awareness to their on-going process.

Despite the effectiveness issues regarding the development of critical thinking in an online environment, their narratives presented criticism, as they questioned each experience denoting critical awareness in their choices.

This discussion has gathered some elements that can be taken into account to support the development of critical thinking skills in a blended learning model. Pedro and João's narratives became a generous form to address these questions and to suggest further studies in this field.

5.1. Limitations of the study

There were not enough elements in their narratives to highlight any special aspects to be considered due to their vulnerable economic background. Despite of this, the present work wasn't focused on including students from other socioeconomic profiles for a comparative study. Therefore, any statement regarding their low-income reality can be considered biased.

6 FURTHER RESEARCH

This present work can be understood as a first part of a deeper study about technology and critical thinking/ awareness development. Applications of some of the findings can be already suggested, such as the improvement of the blended model through more focus on face-to-face meetings, using the online platform as a trigger theme to further discussions within the in-presence workshops.

In the context of this work and according to the participants' narratives, interaction was an important resource for developing critical thinking skills. In this way, a goal for further studies can be how to ensure effective interaction in online environments.

The impact of the biases on the online skills development process can be a theme to a further study, with more students and also representatives of the administration of the blended learning model, to gather their perceptions in a comparative study.

Other social markers (race, gender among others) can be used combined to socio-economic status or individually in order to obtain new outcomes of the development of critical thinking skills.

Critical Pedagogy can be used as a reference for further studies regarding the technology and the development of social and emotional skills, considering the challenge of presenting active quality interaction between students and educators.

A concern pointed out in this study that can be used for further research is related to SEL implementation in the educational context, considering cultural and social diversity and how to define the desirable outcomes of a development program.

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APPENDICE

Guide for the interviews

- presenting the motivation and the objectives of the study;
- explaining the concepts of social and emotional skills and critical thinking skills;
- open question (starting question): "Tell me about your development in life (past, present and future) as if it were a novel, divided into chapters. This is an open question and there is no right answer, just a nice conversation starting here between you and me that will help in my research process."

Questions focused on the concept of social and emotional skills development:
- starting with a broader context of their lives: "Do you remember any situation/ experience in which you have learned/ developed more proficiency in a social and emotional skill? Could you tell me?"
- then inviting them to tell me if they recognized any similar situation in the context of the institute they are part of, in the hybrid development program: "Do you have any situation/ experience in which you have learned/ developed more proficiency in a social and emotional skill at xxx (social institute)? Could you tell me?"

Questions focused on critical thinking skills development:
- starting with a broader context of their lives: "Do you remember any situation/ experience in which you have learned/ developed more proficiency in critical thinking skills? Could you tell me?"
- then inviting them to tell me if they recognized any similar situation in the context of the institute they are part of, in the hybrid development program: "Do you have any situation/ experience in which you have learned/ developed more proficiency in critical thinking skills at xxx (social institute)? Could you tell me?"