Hybrid teaching in deaf education during the pandemic: learning challenges[1]

Ensino híbrido na educação de surdos durante a pandemia: desafios do aprender

Enseñanza híbrida en la educación de sordos durante la pandemia: desafíos de aprendizaje

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Abstract
2020 was an especially important year to (RE) think about education in Brazil. It was an year in which the educational community needed to re-signify itself, considering the new challenges imposed by the Covid-19 pandemic. In this sense, this work aims to show what has occurred in the academic environment after the pandemic onset. This work investigated under the bias of a qualitative analysis through questionnaires the main difficulties encountered by teachers of inclusive high school classrooms and professionals of multifunctional resource rooms in the learning process of deaf students, with the use of technologies. The results indicate efforts in deaf students' education once the changes of educational paradigms re-signified agents, mode/means, instruments, and educational purposes. Moreover, it points the need for innovating educational practices.
Keywords: Remote learning, Deaf, Technologies

Resumo
O ano de 2020 foi muito importante para (re)pensar a educação no Brasil, por ser aquele em que a comunidade educacional precisou se ressignificar perante os novos desafios impostos pela pandemia de Covid-19. Nesse sentido, o objetivo do trabalho é fazer um recorte para o que tem acontecido no meio acadêmico após ser decretada a pandemia. Este trabalho investiga, sob o viés da análise qualitativa, utilizando questionários, as principais dificuldades encontradas por docentes de salas inclusivas do ensino médio e profissionais de salas de recursos multifuncionais, no processo da aprendizagem de alunos surdos, com o uso das tecnologias. Os resultados apontam esforços no contexto do ensino de alunos surdos, visto que as mudanças de paradigmas educacionais ressignificaram agentes, modo/meio, instrumentos e finalidades educacionais, além de apontarem a necessidade de inovação das práticas educativas.
Palavras-chave: Ensino remoto, Surdos, Tecnologias

Resumen
El año 2020 fue muy importante para se (RE) pensar la Educaciónn para el Brasil, por ser aquel en el que la comunidad educacional necesitó dar un nuevo significado a los nuevos desafíos impuestos por la pandemia de COVID.19. En este sentido, el objetivo de trabajo es hacer un corte por lo sucedido en el ámbito académico, luego que se decretara la pandemia. Este trabajo investiga, bajo la perspectiva de un análisis cualitativo, mediante cuestionarios, las principales dificultades que los docentes encontraron en sus aulas inclusivas de escuela secundaria y los profesionales de las aulas de recursos multifuncionales, en el proceso de aprendizaje de los estudiantes sordos, con de tecnologías. Los resultados muestran el esfuerzo en el contexto de la enseñanza a alumnos sordos, ya que los cambios en los paradigmas educativos dieron un nuevo significado a estos agentes, modo/medios, instrumentos y fines educativos, además de señalar la necesidad de innovar las prácticas educativas.
Palabras-clave: Enseñaza híbrida, Sordo, Tecnologías

1. Introduction

With new information and communication technologies, schools have increasingly pedagogical resources to streamline classes and enhance knowledge. From the dynamics perspective, knowledge is built in a flow of interactions provided by digital and virtual environments. There is no concentration on the role on just one of the actors, as teachers and students gradually build knowledge and share it with others.

From this perspective, Moran (2015, p. 16) states that "today technology brings the integration of all spaces and times. Teaching and learning take place in a symbiotic, deep, constant interconnection between physical world and digital world". In fact, the hybridization of educational spaces contributes to the formation of people living in a connected world. The school intends to develop the training for the world throughout life.

The active posture of individuals is essential because learning does not occur uniformly. Individuals, involved in their particularities, have their rhythm and it must be respected. According to Vygotsky (1991, p.55), "Learning is more than the acquisition of the ability to think; it is the acquisition of many specialized skills to think about many things". So, contexts and situations are significant for such acquisition. Thus, the aim of the present work was to analyze challenges faced by teachers and interpreters of deaf students with teaching in the hybrid modality in the first six months of the Covid-19 pandemic in Brazil.

This research was carried out from March to August 2020 and demonstrates the urgent need for competence in the use of digital technologies in view of the continuity of pedagogical activities. According to Moreira (2020, p.6),

> Interactivity in the digital world appears to give another meaning and expand the already existing concept of interaction. This interactivity presupposes participation, cooperation, bidirectionality, multiplicity of connections between information and actors involved.

Thus, it is recognized how significant the contributions of digital learning environments are.

However, the interactive teaching process of deaf students in hybrid environments, from the perspective of inclusion, are weakened since "Professionals do not believe that through the sign languages, it is in fact possible to discuss the scientific and technological advances that the school provides" (QUADROS, 2003, p.96). Thus, the inclusion of deaf individuals in digital and hybrid education presents itself as a possible challenge if there are resources and commitment by education professionals, public agents, and students.

This qualitative research is structured into five sections, the first being the introductory one. The second is entitled "Hybrid teaching, interaction, and inclusion" and dialogues with theoretical authors on hybrid teaching, the importance of interaction in learning, and the inclusive processes of deaf students. The third section deals with the methodological procedures used for research development and a subsection that presents the research locus. The fourth section contemplates the analysis of results and, finally, a section with concluding remarks.

2. Hybrid teaching, interaction, and inclusion

In a context of association of elements for education face-to-face and at distance, hybrid teaching configures a scope of teaching and learning possibilities already consolidated in the educational context - considering undergraduate and graduate courses that have already existed for some years. However, it's also due to the current world pandemic scenario and the re-planning of many schools to adapt themselves to the new needs. This blended (MORAN, 2015) or hybrid teaching in the current context combines flexibility and ease in organizing contents.

Hybrid teaching and interactive processes are important in deaf students inclusion process, especially in the context of physical distancing. Having a deaf student in classroom means understand that this student has a different perception of the world compared to other ones, as his/her perceptual channel is visual. Thus, a truly inclusive class in addition to a sign language interpreter needs to consider the deaf students' particularities and their way of learning, as well as the adequate methodology selection to be used and pedagogical team commitment.

3. What is hybrid teaching?

Hybrid teaching is a methodology that aims to disseminate knowledge in formats different from those traditionally systematized. This concept brings the possibility of understanding the combined use of technologies and tools from the digital universe or not, using online and offline media. Thus, it can be an excellent resource for innovation, learning enhancing, and expanding teachers and students' knowledge, using methods and resources appropriated for everyone, considering learning spaces, forms, and time that each one requires to learn.

This system favors the individual needs of students, as it allows the construction of a personalized teaching/learning model in terms of content and methods, combining online exercises and activities within the classroom space. In addition, promotes digital literacy skills, which take place in the dialogue between technology (software and hardware), students and teachers. These integrated forms promote changes both at school and in teaching practices, as digital technologies, when integrated with didactic-pedagogical actions in a structured way, enhance teaching and learning, based on students' needs.

Since it is multifaceted, self-directed, and based on educational competences, hybrid teaching becomes important even more in late modernity regardless the proximity of locations. It is because there are teachers who are prepared and interconnected to digital resources in internet universe, like those who are managed through educational platforms to enhance students' skills in their learning processes.

According to José Moran (2015), blended is a concept that is much broader and has been around for some time, since

> Hybrid means mixed, blended education has always been mixed, hybrid, it has always combined different spaces, times, activities, methodologies, populations. This process now, with mobility and connectivity, is much more noticeable, broader and deeper: it is a more open and creative ecosystem. Teaching and learning can occur in different ways, in any times, in multiple spaces. Hybrid is a rich, appropriate, and complicated concept. Everything can be mixed, combined, and we can, using the same ingredients, prepare different "dishes" with quite different flavors. (p. 27)

This "mixture" is already part of everyone's daily life since we talk about the integration of technologies to routines to escape the existing traditionalism. It requires much working and planning from teachers, necessary to search new ways of teaching through research, innovation, availability, and creativity.

In light of these premises, one must enter the paths of hybrid education/teaching by breaking paradigms to offer technological instruments of school connected to the digital world. From the perspective of connectivity, this is a school that has technological resources, internet, and professionals with the ability to interact in a network aiming to enhancing student learning. In other words, it is understood that digital technological devices are configured as learning fuels, as it is through them that teaching and learning practices, in the school environment or not, become more interactive and meaningful in students' lives.

In short, hybrid teaching, when appropriate to students' stimuli and interests and when fostered by teachers, breaks boundaries and provides personalized, more engaged learning, without disregarding cognitive and socio-emotional skills and abilities. These competencies, according to Sena and Serra (2021, p. 52), "are necessary, since the digital world presents countless possibilities for learning and forms of relationships that impact different sectors of society".

Sustained models (which improve traditional classrooms) or disruptive ones (which encourage a rupture in schools, replacing them with another completely different paradigm) meet in line with technological advances. This is what need to be the legal duty of all networks, communities, schools, and teachers: the right of learning with experiences and meanings that enhance all these contexts.

4. Knowledge and interaction

School learning has been object of study for years by a lot of researchers, whose studies have significantly contributed to the understanding of how this process occurs. In these dynamics, it is essential to analyze the interactive processes between teacher and student since knowledge is also built during interactions. However, it is important to emphasize that being part of the same environment or space does not configure a learning situation; there must be interaction between subjects for a learning process.

The school, among other social attributions, plays the role of providing situations for exchanging the knowledge and interactions in a collaborative and empathetic environment. From interactive situations, each individual re-signify concepts that were previously internalized. According to Vygotsky (2000, p.325),

> We could say that there is a learning process; it has its inner structure, its sequence, its triggering logic; and inside, in the mind of each student, there is an underground network of processes that are triggered and move during the school learning and have their own development logic.

Based on the approach to the learning process, the external actions that individuals perform in their social environment have their meanings based on the cultural context in which they are inserted. In this way, their inferences and interpretations are built from the outside to the inside and later return to the social. According to Vygotsky (2001, p.12), "the development of the psychological foundations necessary for the teaching of basic subjects does not precede this teaching but occurs in a continuous interaction with the contributions of teaching".

Thus, the importance of social interaction for the construction of learning is visible both in the development process and in the establishment of knowledge. Therefore, the major influence of the teacher in this learning development process is noticeable.

The interaction between teacher and student helps the development of learning strategies and strengthens the potential of subjects involved in these dynamics. Regarding learning development processes, we realize that in the human being development, there is a natural evolution of the one who develops. Such evolution does not simply occur from the physiological point of view but also from cognitive and psychological one. During this evolutionary movement, learning takes place and shapes who we are and who we will become.

Developing pedagogical work in technological environments without the physical presence in the traditional classroom space is a fertile field for learning to be built both in terms of scientific knowledge and emotional and behavioral intelligence, as the visibility acquired by those involved in teaching in these hybrid environments is immeasurable. It is believed, as Vygotsky (1991, p.83), that "It is throughout the interaction between children and adults that young learners identify effective memorization methods - methods made accessible to young people by those with greater memorization skills".

Human mediation is, therefore, essential for the awareness, guidance, and construction of knowledge in virtual classrooms that were abruptly presented, without the idea of this type of pedagogical action being matured at different levels of education.

In a society immersed in technology, it is natural to expect technical knowledge on the subject, given the frequency we use it, and digital skills that are so necessary for our daily lives. However, technology does not cover the entirety, nor there are investments in technological education during teacher training or in public basic education, which is the most democratic form of access to scientific knowledge.

Technological products are part of our society and there is no way to dissociate them from our daily lives. For their use as interactive tools that enhance learning to be productive, the strategy development process occurs parallel to the maturation of concepts and techniques by both teacher and student to develop learning beyond the school environment.

5. Teaching of deaf students

The trajectory of deaf people is marked by prejudice, misinformation, but also by struggles for the benefit of these individuals, right to citizenship, education, respect for their language and culture. According to Fernandes, Schulesener and Mosquera (2011), since the creation of the National Institute for the Education for the Deaf (current Institute for the Education of the Deaf – Ines) in 1957, education for deaf people has grown and undergone major paradigm shifts over the years.

Quadros (2008) separates deaf education into two moments: oral education and bimodal education. The first is an educational proposal that

opposes the use of sign language in classroom, emphasizing oral language as the language of instruction for deaf students. According to Couto (1988), oral education has as ideology the recovery of deaf people using oral language based on the clinical perception of deafness, characterizing deaf individuals as "physically disabled".

From many discussions on the use of sign language[2] and unsuccessful experiences of the oral method, a second moment of deaf education emerges, the bimodal education, a time when inclusive classrooms began to expand in the state of Maranhão. At the same time, the presence of these students in regular classrooms created the need for a new professional who could mediate communication between teachers and students - the sign language interpreter.

Bimodal education contributed to reopening the use of signs, which gave space for, "parallel to the development of proposals for total communication[3], studies on sign languages became increasingly structured and with them bilingual-oriented educational alternatives also emerged" (LACERDA, 1998, p.7).

On April 24th, 2002, the Brazilian Sign Language – Libras[4] was made official and recognized as a legal means of communication and expression of the Brazilian deaf community through Law 10,436 regulated by Decree 5626/05, comprising Libras as a language.

Although the modality and linguistic system is visual-motor, its use, dissemination, and inclusion in training courses for teachers in federal, state and municipal secondary and higher education systems was supported, adopting it as part of the National Curriculum Parameters – PCNs.

The Libras recognition and regulation are extremely important for social, cognitive and linguistic development of deaf individuals . Thus, throughout the deaf community history, we saw struggles and "the educational attitude towards sign language interfered in the historical process of deaf communities" (QUADROS, 2008, p.45).

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[2] The use of signs for communication was seen only as a language, with no linguistic structure.
[3] "Total Communication is the practice of using signs, lip reading, amplification, and the digital alphabet to provide linguistic inputs for deaf students, while they can express themselves in the preferred modalities" (STEWART 1993, p. 118, *apud* LACERDA 1998, p. 8).
[4] It is another acronym to refer to the Brazilian Sign Language. This acronym follows the international standards for naming sign languages (QUADROS, 2004, p. 9).

In Maranhão, state and municipal schools with deaf students are part of the perspective of inclusive education. These students are included in regular classrooms with the presence of the Libras interpreter teacher. There is still a long way to go in the education of deaf people and in their real inclusion, as "it should also be considered that the interpreter is just one of the elements that will guarantee accessibility" (QUADROS, 2003, 61).

There are great challenges to be overcome every day because there are teachers who still feel unprepared to welcome a deaf student in their classroom and, along with him/her, another professional. In 2020, these challenges were doubled by the need for social distancing due to the Covid-19 pandemic, leading teachers to adapt face-to-face teaching to hybrid one.

In addition, Sena, Lima and Serra (2022, p. 17) points out that "the context of the pandemic has further highlighted the disparate realities of our students, while some can keep up with remote classes, many do not even have a telephone set". Thus, it was observed that the inclusion of deaf students in a face-to-face way already had its complications and in hybrid education further steps were added to this path.

6. Methodological paths

This research has a qualitative approach, as it aims to know the pedagogical practices carried out in digital environments in a spatial cut between three cities in the state of Maranhão in a period of six months, after the onset of the pandemic in Brazil.

As this is an analysis of the sociocultural reality of participants in different geographic points, there is no way to measure results in quantitative indicators, as data reflect dynamics that sometimes resemble and sometimes differ within the question - investigated problem.

In this sense, Zago (2003, p. 295) reports that one of the qualitative research characteristics "is to allow the construction of the study problem during its development and different stages". In addition to relying on bibliographic studies and regarding technical procedures, this is field research performs data collection with teachers and interpreters through semi-structured questionnaires.

The choice of the research field was given by the observance of a geographic cut in which one seeks to understand the performance of Libras

teachers and interpreters in different parts of Maranhão, in the period of remote education.

In addition, the choosing participants followed some criteria as: being part of the permanent staff, not being in retirement process, and acting directly with deaf students. It is noteworthy, however, that only in the city of Rosario, interviews were conducted with teachers because in the other cities, the teaching of deaf individuals was delegated to interpreters. In the period of remote teaching, these students had no contact with teachers.

Regarding the interview technique, Gil (2008, p. 109) points out that "Due to its flexibility, it is adopted as a fundamental investigation technique in the most diverse fields, and it could be inferred that an important part of the development of social sciences in recent decades was obtained due to its application". Thus, the semi-structured interview is the main methodological procedure used in this research.

The theme of interviews is related to the research object, and it is about the relationship between digital technologies and the teaching/learning process of deaf students. Objectively, in addition to other questions, the six most relevant research questions are:

1. How do you see technology-mediated education?

2. Did you find difficulties in adopting online environments to your teaching practice? Which are them? How did you overcome them?

3. How do you assess the interaction with deaf students through technology?

4. What resources or platforms helped your work with deaf students during the pandemic?

5. How do you assess the learning of deaf students during the pandemic?

6. Is it possible to achieve the same teaching quality in digital environments with deaf students? Justify.

Interviews with teachers and interpreters took place via digital communication platforms, which contributed to the development of this work as it was possible to experience learning experiences like those of students in interactions since physical distancing was maintained and the time for each participant's response was respected.

7. Field and research participants

To achieve the objectives, a semi-structured, open and directed questionnaire with teachers from three regular schools (in the municipalities of Rosário, Timon, and São Luís in the state of Maranhão) was applied to understand the main challenges the teachers faced between March and September 2020 in the teaching and learning process of deaf students. These educational institutions are of public education system - schools of São Luís and Timon are state schools, and the school of Rosario, municipal school.

During this investigative work, three Libras interpreters were interviewed in the city of São Luís, two Libras interpreters and a teacher in Timon, and in Rosario, two teachers and three Libras interpreters. Participants of this research are characterized in Table 1.

Table 1 - Research participants

Municipality	Participants
Rosario	Teacher A
	Teacher B
	Interpreter C
	Interpreter D
	Interpreter E
Timon	Teacher C
	Interpreter F
	Interpreter Z
São Luís	Interpreter X
	Interpreter Y
	Interpreter Z

Source: elaborated by the authors (2020)

To conduct interviews, digital communication means, and platforms, such as Google Forms, were used. It is important to emphasize that the challenges experienced at the beginning of the research persist because at the end of this work the pandemic context persisted too.

The cities in which studies were carried out were geographically distant but come closer due to the inclusive character perceived in the posture of

education professionals: The emphasis on Libras interpreters involved in conducting interactive processes.

In addition, all participating teachers had to learn to use technological resources applied to education to teach both the subject content and the handling of digital tools. Outlining an overview of deaf education in digital environments in the context of the pandemic is essential to understand how structural and technological resources, as well as teacher training and socioeconomic aspects positively or negatively influence education, especially in the deaf people teaching.

8. Analysis on teaching during the pandemic

The context of the Covid-19 pandemic brought a latent reality, revealing the deficiency and unpreparedness of most teachers in digital technologies in education, which led them to urgently handle and familiarize themselves with these resources.

For Silva (2001, p. 15), with the arrival of the cyberculture era, "more than ever, the teacher is challenged to change communication in classroom and in education". For inclusive education, we know that it becomes an even greater challenge. Thus, when asking how to make this inclusion, even at distance, some results and data collection analyses of this research are presented below.

8.1 Rosario

To achieve the objectives, a semi-structured questionnaire was applied with five participants (two interpreters and three teachers), as previously explained to understand the main challenges they faced (and face) during the pandemic period in deaf students' teaching and learning.

The answers clearly demonstrate the difficulties that most of them had in their teaching practices using technologies with deaf students. Furthermore, it was observed that, even with these difficulties, there was a massive effort by all of them to develop, efficiently and within their limitations, teaching with minimum quality.

For the first question, participants attribute the importance and need for teaching practices to technologies, especially at this moment of the pandemic. In the second question, the following answers were obtained:

> At first, I found it very complicated, because I was not prepared for this model, but then I got used to the new reality. And, for this, the presence of interpreters was fundamental. (Teacher A)

> It was very bad. Nothing replaces face-to-face learning. I have a lot of difficulty and I think that students don't follow classes well. What minimized this problem was the work of interpreters. (Teacher B)

> I had a little difficulty, but colleagues and tutorials helped me to overcome the difficulty (Interpreter C)

> It was complicated, but interpreters helped a lot. (Interpreter D)

> Particularly, I did not experience any difficulty. The only problem I noticed was that the deaf students had little or no access to technology. (Interpreter E)

Considering the above, it could be inferred that participants reported difficulties in handling machines, equipment, websites, and applications. Participant "E" was the only one who did not report personal difficulties but pointed out the lack of access by students as a serious problem. In addition, participant "A" declared that the undergraduate course did not prepare (or do not prepare) future teachers for the management of technologies allied to education, which is reflected in the future.

Meanwhile, participant "B" demonstrated the difficulties of teachers and students to have access to multiple technological equipment, such as tablets, notebooks, or smartphones. Therefore, there are weighted responses about how efficient the interaction with deaf students was. However, participants "A", "C" and "D" showed how the presence of the interpreter is a fundamental element for consolidating this interaction. Only participant "B" considered this interaction reasonable and justified it by the fact that students were not even able to access the virtual environment.

In this context, it is valid to reflect on deaf education mediated by technologies, as well as on teacher training to act in an inclusive perspective. Thus, according to Lopes (2017, p. 15), the preparation of professionals "involves the concern to master the sign language, technological resources and the possibility of using these pedagogical tools in the development of deaf students". In fact, this is a matter of fundamental importance for deaf education quality.

For the fourth question, there was similarity (and variety) in the use of digital platforms and tools. Most repeated responses regarding this use were from

WhatsApp, Google classroom, Google Forms and YouTube. Results show other less usual tools such as the Telegram.

Regarding evaluative processes, at this period of the pandemic, five responses had the same object: dissatisfaction in general, whether due to the lack of close contact, precarious use of technologies, or even the lack of access by students. It is almost unanimous that evaluations and all these evaluative processes were not satisfactory. However, the assessment of learning styles and the identification of learning strategies used by students and teaching strategies used by professionals are crucial to reflect on assessment and its results (QUADROS, 2008).

About the possibility of the same learning quality for deaf students in digital environments, the sonorous NO as response was also unanimous, and most considerations are given by the same difficulties pointed out in previous responses. Professionals believe that this is already difficult with students without disabilities, and for students who are the target population of special education, especially deaf ones, these difficulties are intensified.

8.2 Timon

The pedagogical work with deaf students in the city of Timon developed during the pandemic, considering the time in which this research was performed, denotes that digital technologies were restricted to instrumental use. They consisted of a communication resource to schedule face-to-face classes and send videos. It is important to emphasize that face-to-face classes with interpreters followed the health safety protocols recommended by health agencies.

According to Moreira (2018, p. 14), "technologies have enormous potential to improve the pedagogical process and should be inserted in digital learning ecosystems as a means to help students to think and solve problems, creating and collaborating with others". It was perceived how much digital learning environments contribute to collaborative work if they are well coordinated. Asked about the lack of online classes, interpreters answered:

> Because for more effective learning, classes need to be face-to-face, but we always made videos to reinforce their learning. (Interpreter F)

> Because students have difficulty accessing the internet due to lack of financial resources. (Interpreter G)

Based on professionals' speeches, it appears that financial difficulties compromise digital inclusion, and this is an issue that impacts individual and social development. But the absence of teaching knowledge regarding learning and the use of digital technologies was also perceived. By stating that "to be more effective, learning needs to be face-to-face", interpreters highlight the fragility of training courses, as they are unaware of the possibilities that digital media bring to education, in addition to being attached to traditional methods, since they understand that meaningful learning is only possible with physical presence.

It could be concluded, therefore, that both teachers and students are learners within digital environments. However, in the urgency to fulfill the goals intended by the school the teacher ends up excluding, even if unintentionally, subjects that "hinder" the fulfillment of goals, in this case, deaf students.

These, in turn, have their educational tutelage transferred to interpreters who, however empathetic and committed, fail to promote digital inclusion. In addition, in many of the practices adopted with digital media, only the transposition from face-to-face teaching to digital media is perceived (SENA;SERRA, 2021).

The posture adopted by teachers included in this research, provokes a reflection on teaching because there was no interaction with deaf students in this period remote teaching. Although it was mentioned that interpreters were in charge of teaching deaf students, it was reported to instigate the thought about the deaf educational scenario a statement from a teacher about the non-participation in the teaching process.

In this sense, it is understood that the teacher as a mediator of knowledge ran away from its purpose because he/she did not seek strategies for knowledge to reach his/her students. However, it is worth mentioning that the context of emergency remote teaching was new and frightening for everyone in the school community. In this context, one teacher reported:

> It's very bad not knowing how to communicate with deaf individuals. It's sad not being able to work with them due to this communication barrier. We do what we can and trust the interpreters. Before the pandemic, I tried to communicate with them in the classroom and I plan to take a Libras course so that I can communicate with them. (Teacher "C")

According to Quadros (2003, p.87), "deaf students are constantly exposed to failure due to their own condition (not hearing) and not to the conditions

reproduced by the system". Thus, it is clear how deaf students are stigmatized and harmed by a flawed educational system, which is not structured to include, but to select. In addition to the deafness stigma, the overload of responsibility given to interpreters is evident, as they translate, but the competences and domains of each discipline are up to the teacher, who is responsible for teaching or even facilitating understanding.

In this way, both teachers and interpreters, due to the need for training and negligence of the State, make it impossible for deaf and not deaf students to experience a learning experience as pointed out by Moreira (2018, p. 14) on the understanding that: ""technologies present themselves as a promoter of learning processes, and should be inserted in digital education ecosystems as a way to develop in students skills such as thinking, solving problems, creating, and collaborating with others".

8.3 São Luís

In the municipality of São Luís, state capital, 3 (three) high-school interpreter teachers were interviewed. At first, there was a mobilization of the State Department of Education to reach the high-school population, which generated recordings of classes both in Portuguese and in Libras for students who would take the National High School Exam, a methodology that was extended to the entire state through the YouTube.

Subsequently, a new plan was carried out as the pandemic would last longer than expected, leading each school to launch its outreach strategies. Thus, teachers began their experiments with educational technologies so that classes could be resumed even at distance. For Silva (2001, p.1), distance learning is

> the mode of communication that challenges teachers and education managers, equally centered on the transmission paradigm, to seek the construction of the classroom where learning takes place with the participation and cooperation of students.

Regarding digital platforms used, respondents mentioned the following digital spaces: WhatsApp, video - calls, YouTube, Google Meet, Google Classroom, as well as visual resources produced for better understanding of deaf

students, considering that only one digital space such as YouTube, previously used, did not allow full interactivity.

It is important to highlight that in São Luís teachers participated in specific training on the use of digital technologies at the beginning of the pandemic. The initiative was given by the State Department of Education, the objective was to reach high school students where it was possible producing videos and more accessible classes for students who would take the National High School Exam.

All interviewed participants recognized the importance of technology-mediated teaching but all of them also pointed out the absence of technological education in their backgrounds, which brought losses when facing the new teaching modality. When asked about their difficulties in using these platforms and resources, interviewees answered:

> Although they appear to be intuitive and easy to use, I had a hard time due to the lack of knowledge. I also needed to know how to evaluate students, because we don't have immediate feedback, which makes evaluation difficult. (Interpreter X)
> I needed longer period of adaptation, because both the planning and the execution of classes in the virtual environment are different. I could say that, so far, I realize that deaf students are disadvantaged, because we do not have enough knowledge to make classes more inclusive and neither do they have technological support. (Interpreter Y)
> I am researching better ways to use technologies, as I realize I need more training and time to practice. We use video calls through WhatsApp, Google Meet and YouTube videos, but it was still not enough to make classes inclusive. (Interpreter Z)

Regarding the assessment of deaf students' learning, interviewees explained how the absence of immediate feedback impairs the fluidity of the information transfer. Interpreter "X" pointed out: "the lack of instantaneous feedback hinders the use of a more punctual help". Interpreters "Y" and "Z", on the other hand, assessed learning as ineffective and fragile.

Silva (2001) emphasized that, in addition to technology, a change in the educational paradigm is needed supported by interactivity, where ties of face-to-face teaching must be left aside. The focus on the teacher as holder of knowledge ceases to exist and students are no longer just receivers information, but co-participants in their own learning process.

For Alves and Gomes (2020), the pandemic brought a real need to reframe and reevaluate basic education. We were adapted to a logistical and organizational pattern in schools, so, the result of an attachment to physical

presence, and that we currently need to reinvent ourselves in new ways. This attachment to the physical ends up by generating insecurity in experiences with hybrid environments and leading teachers to assess the quality of teaching with deaf students as unsatisfactory and far from cognitive and linguistic development compatible with face-to-face teaching.

In this sense, it is important for teachers to develop new skills for quality teaching, aligned to the students' context, dialoguing with the digital, which enables to think of new inclusive and engaging pedagogies (SENA; LIMA; SERRA, 2022). Thus, the visual learning modality and interactive possibilities are more present and motivating for deaf and hearing students.

However, researchers such as Vieira and Souza (2020, p. 1) claim that "information and communication technologies have a variety of characteristics that can help promote meaningful learning for deaf people, contributing to the development of knowledge, skills and competences of these students", mainly in view of their visual learning modality.

9. Concluding remarks

The history of education has always been guided and manifested under the pedagogy of exclusion, in a daily construction that, in praxis, has never been different from what is prescribed in normative, guiding, and legal documents. In an antagonistic character, this shows that the search for the ideal is far away, as the greatest concern is never with the student or with inclusion/diversity, but in the neoliberal, capitalist and of macular improvements full of good intentions. Religious groups, women, Black and poor people, foreigners, the LGBT population and, in an almost last frontier, the exclusion of people with disabilities, are classic examples of the reason for this statement.

Thus, in this research, clear representations were observed in the teaching work, impacting and influencing actions towards the inclusion and diversity present in school, in this case, the work with deaf students. As previously mentioned, the concerns and considerations about ailments present in this environment lead to some effectively transforming act.

Education professionals who do not reflect their own practice, their educational context, and this new reality are no longer accepted, and should

contribute to the minimization of the most different forms of disrespect present in the education context with a view to truly inclusive practices that respect diversity.

Furthermore, there are results that clearly demonstrate the hard work and effort of interpreters to achieve practices that, at the most, meet the needs of all student heterogeneity and, specifically in this research, deaf students. There were joint difficulties both for teachers working in regular classrooms, Libras interpreters and for those who perform their functions in multifunctional resource classrooms.

The pandemic forced the redefinition of all elements in the universe of access to knowledge in school environments for remote or hybrid teaching. Thus, this research also points out the difficulty of access and permanence of students in classes for several reasons: the difficulty inherent to education, poverty, and social inequality triad.

Furthermore, it showed the difficulty of teachers, whether in the use and handling of technological devices, or in their praxis, which also demonstrated practice rooted in traditional precepts.

The developed strategies were very effective in this remote/hybrid return, if we consider that they did not measure efforts for this, mainly in terms of secondary education. Many technological strategies could be put into practice, and some adaptations were made during the course. Students also contributed with suggestions so that the interaction process was as "sufferable" as possible.

It was also highlighted that the actions taken at this time of pandemic allow reinforcing that these schools and participating teachers remained active, even at that time.

In Maranhão, state and municipal schools with deaf students are inserted within the perspective of inclusive education, with students included in regular classrooms with the presence of a Libra interpreter. There is still much to advance in deaf education and its real inclusion because, although it is essential for accessibility, only the interpreter does not guarantee effective school inclusion.

Moreover, it showed the difficulty of teachers, whether in the use and management of technological devices, or in their praxis, which still demonstrated practice rooted in traditional precepts. In this sense, this research encourages the development of future studies on the impacts of emergency remote teaching

on academic life of deaf students, as well as on the performance of Libras interpreter professionals.

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