Use of technologies in the deaf learning process: libras in remote education

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1 INTRODUCTION

In the perception of the deaf, the new technologies include numerous possibilities and potentialities accessible visually, raising the need to introduce their educational uniqueness to the visual field, but this finds some barriers, among them is the space not knowledge of sign language by their teachers, as well as the little knowledge about the deaf community and its culture based on visual experiences.

In the face of such difficulties, we are faced with the pandemic caused by Covid-19, which forced the rulers of the whole world to suspend classroom school activities in order to preserve lives and try to exhaust the virus. In 2020 Brazil started a race against time, offering Emergency Remote Education (ERE) which proposed online education to all students, including deaf students.

In the search for teaching strategies that better serve these students, we collided with the following question: what is the perception that deaf students have of the informatization issue? This article gathered the educational practices of deaf educators and Libras interpreter from different Brazilian states to better elucidate how the Internet 2.0 contributed to the teaching of deaf students in this pandemic period. According to Oliveira Neto, et. al. (2021, p.578), in the pandemic period the "communication platforms have occupied significant space in society and have been stimulating educational practices in order to ensure learning opportunities and autonomy". In this perspective, we will discuss throughout this text the use and applicability of digital technologies of information and communication (DICTs) in the process of teaching and learning of deaf students from four regions of Brazil, namely: northeast, southeast, south and center-west.

Internet 2.0 has introduced a new form of communication and social interaction, enabling access to general information more than any other communicational vehicle. For the deaf community, the use of new technologies refers to a new dimension of the possibility of "knowing how to do", since they are intrinsic

to visual communication. We started from the following question: what is the perception that deaf students have of the informatization issue? The objective of this study is to understand what are the contributions of Internet 2.0 for deaf students in the context of educational practices in the midst of the pandemic.

To theoretically support this research we use the concept of digital technology of information and communication as educational tools, which help in the process of digital literacy and also contribute to the formation of autonomy, independence and interaction between subjects, enabling a new path of teaching and learning. The methodological approach is qualitative, based on the devices of (auto)biographical research as a research method, through reflective narratives and document analysis. The contributions, for the researched group, were perceptible as to the learning, as well as to the self-esteem and interaction produced, which intensified and modified the relationships with the other, besides producing potentialitys.

2 METHODOLOGY

Our methodological path is based on the qualitative, bibliographical and experience report approach, based on the studies of Minayo (2015); Gil (2017); Gerhardt and Silveira (2016). We will use the bibliographic research method, because according to Gil (2017, p. 44): "The bibliographic research is developed based on already elaborated material, consisting mainly of books and scientific articles."

The data from the bibliographic sources consulted will be analyzed qualitatively, which according to Gerhardt and Silveira (2016, p. 31) "Qualitative research is concerned with deepening the understanding of a social group, an organization, etc." which is consistent with the proposal of the article.

Our secondary sources were documentary research, conducted in articles and platforms used by professionals and theorists such as Almeida and Valente (2011); Cortella (2015); Oliveira Neto (2020, 2021) and Santos (2014), among others. These sources, in addition to supporting the theoretical framework of this research, served as a basis for analyzing the data collected through the reports of the experiences of two teacher educators, one Libras interpreter teacher, and one Libras interpreter from the public education network.

The (auto) biographical narratives of the people researched in this study arise from the social experiences materialized in the places of knowledge and doings of their experiences and experiences based on how they need to live amidst so many technological innovations, having their way of studying, learning, researching and perceiving their culture and their world influenced by digital natives.

This methodology allows the researcher to be primarily concerned with the process and not the product.

Ensuring the inclusion of deaf students in educational processes during the year 2020/2021, has been one of the great challenges of educators, both in multifunctional resource rooms and in the regular classroom. This is due to the fact that these students have linguistic specificities. Their particularities cause difficulties regarding the use of educational technologies available for emergency remote learning.

For Arcoverde (2006), the new DICT's can be used as instruments in the process of appropriation of writing. These technologies, by also opening possibilities for new constructions, constitute an increasingly explored appropriation space. Nogueira (1993) writes that one of the possibilities of computer use in special education is the access to educational resources that use texts, still or moving images, animations, graphics, and sounds.

Around this scenario the problem question arises again, what is the perception that deaf students have about computerization? The forms of communication and learning have changed, and this change has been happening due to the expansion of the presence of digital technologies in the most varied social environments. With this new reality, the ways to access and produce meanings are not only concentrated on the written form, and today, more than ever, the languages are intertwined, thus bringing about changes in the ways we communicate.

3 CONCLUSION

In December 2019, Chinese health authorities reported the emergence of a new severe respiratory syndrome that quickly became a red flag in the international community due to high rates of transmission and mortality. Social distancing was configured as one of the main coping strategies for the COVID-19 pandemic, due to its potential to decrease the contagion of the disease. However, the measure is not without adverse consequences - such as the staggering impact on the educational system marked by socioeconomic inequalities in our country.

It has become even more necessary to discuss the potential offered by the DICTs as a possible support to overcome the barriers of remote education. The theme that already presented great social relevance becomes urgent to guarantee the right to education for people with disabilities. After all, given the impossibility of maintaining face-to-face classes, distance learning is no longer an option to become absolutely compulsory. The inclusion of deaf students required much more effort than the mere creation of a shared environment with hearing students. Ensuring the right to quality inclusive education requires, above all, a relationship of respect for the dignity of human life - which includes consideration for cultural manifestations and perception of uniqueness in the world, in addition to the recognition of students as holders of knowledge and protagonism in their learning process.

The emergence of the pandemic of COVID-19 was not responsible for the obstacles in the implementation of inclusive education - on the contrary, the pandemic scenario only exposed cracks that already existed in the Brazilian educational proposal.

The technologies are present in our daily lives, many educators were already seeking technological alternatives in order to enrich the teaching and learning of deaf students, but no one was prepared for such a rapid and urgent change as occurred in the year 2020, educators had to adapt to the new reality and seek technological systems that include students, being possible to perform the signaling of classes in Libras, present images and have exchanges with students through video calls, it was a challenging period where

the educator found himself in a moment of imbalance, having to master the technologies so that it could serve as a teaching tool for deaf students.

This challenge was faced not only by the educators, but also by the students who, although they are digital natives, many times don't have the knowledge of the tools to use them, and the technologies are reduced to moments of leisure and fun..

In the Southeast, more specifically in the city of São Paulo, the Municipal Schools of Education for the Deaf (EMEBS) closed their attendance in March 2019. At first it was thought that it would be a short period of closure, so it was anticipated to the students and educators the vacation period. After this period and given the events, the search for alternatives to continue the teaching and learning of students remotely began, with the ERE.

The São Paulo City Hall made Google Classroom available for educators to post activities and video lessons to students, but after making this resource available, it was realized that many families could not access this mechanism, so educators used the WhatsApp application. The school formed groups with the students' families, separating them by grade. The educators posted videos in Libras proposing activities and explaining the content, made video calls through this same resource so that these students could communicate in Libras with teachers, but we found many obstacles due to internet instability (weak signal) freezing the images during signaling, or even the lack of it, where teachers performed printed activities as an alternative resource for this student could perform the proposed activities, but we emphasize here that these students had losses in their learning in view that most are children of hearing parents who do not know Sign Language and that, for this reason, they can not help their children in the proposed activities.

Over time, videos were made in Libras to guide students how to use Google Classroom and also how to access the classes through Google Meet, this process was slow and difficult. After the students' familiarity with the digital platforms mentioned above, it was necessary to guide them on how to study, many educators used the inverted classes method, making available the video lessons recorded in Libras on the Google Classroom platform and discussing the topic in online classes via Google Meet.

Oliveira Neto et. al. (2021b) tells us that the context of the pandemic disturbed the professionals of CAS of Mossoró/RN, for even being aware of the student's right to study and of our duty to promote education for all, the management of CAS proposed meetings to think collectively about how to proceed in this challenging moment, so after dialogues, opinions, suggestions it was decided to continue the work, even if virtually, through remote classes.

Oliveira Neto et. al. (2021b, p. 235) tells us that in the Specialized Educational Assistance (AEE), the "teachers were responsible for following up/orienting the students in the process of requesting registration exemption, the result of this request, registration and poll for postponing the tests of the National High School Exam (ENEM). Oliveira Neto et. al. (2021b, p. 235) also tells us that the "meetings were held through communication applications to make video calls, which would facilitate communication in Libras. The application used was WhatsApp, because everyone already had the application installed on

their cell phones, since, unfortunately, many do not have a computer, notebook or tablet. As far as the internet is concerned, other problems arose, the instability of the network caused a delay in the time of the consultations. With the individualized service we needed several days to pass all the guidelines in Libras to deaf students who would perform the tests of ENEM 2020, so the students were instructed about the deadlines set in the schedule of the National Institute of Educational Studies and Research Anísio Teixeira - INEP.

Another important action of the Cas of Rio Grande do Norte in this period of quarantine was the participation of teachers of the institution in the Digital Curatorship of RN. Cortella (2018) defines the practice of curating as "someone who takes care of knowledge, information (...) takes care in the sense of protecting, disseminating, increasing the collection and making sure that people have access to it".

The teachers produced accessible study guides in Libras for deaf children and youth of CAS. The resource used was the Escolas na Rede platform, where teachers and students had to access the Internet through their cell phones, computers, tablets or notebooks.

The choice to use the Network Schools Platform was in order to facilitate access for deaf students, since the tool is of public access, free and has a range of subjects, information, in short, educational content. In light of recent events, CAS educators are proposing and publishing bilingual and, in some cases, interdisciplinary scripts, in order to enable deaf children and young people in CAS to participate and learn with subjects and themes in their first language (Libras).

Another advantage of the study guides is that after sending the link to the WhatsApp group of students, they can access the proposed activities at any time and place, but internet access is a hindrance and even if many use mobile data the instability of the signal is a result of the lack of internet access.
The research evidenced that the participants gained knowledge, confidence, and determination to continue learning, being able to search for reliable information on the web and use available digital tools. We emphasize that the greatest advantage observed by the research subjects was technological independence, and the greatest difficulty was finding a technological handbook.

Technological tools enabled access to information, facilitated the acquisition of knowledge, and were widely used in the education of the deaf in the pandemic period. The deaf have appropriated these technologies and use them as an effective tool in the teaching-learning process. The remote teaching, today, has the challenge of providing access to teaching and learning of the deaf in all areas of knowledge since the use of methodologies and technological tools are attractive and enjoy their visuospatial identity peculiarities, encouraging and inserting them in the educational and social environment.

The research was of utmost importance to clarify the idea of what is different imposed by and on society. Experiencing knowledge without appropriating it goes against the objectives of inclusion and equal accessibility to tools that provide quality of life and well-being. The group was guaranteed not only access, but the social use of technology.

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