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ARTICLE

DIGITAL LITERACIES IN ENGLISH LANGUAGE EDUCATION

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ABSTRACT: This paper aims at presenting and discussing data from research done through an experience in two campuses of a Federal Institute of Education, Science and Technology in Northeast, Brazil, based on theories concerning digital literacies, education, and technology. As to this paper, digital literacies are understood as social practices regarding the use of digital devices as well as the hybrid performances with technologies of varied supports, such as analog and electronic devices that have been emerging since the last century. Structured observations and narrative interviews were the instruments adopted for data collection, and the analytical method was based on Freeman (1998) along with Auerbach and Silverstein's (2003) coding mechanisms. As a result, the emerging topics highlighted social use of technologies, the relevance of problematizing and thinking about meanings of the term technology as well as the importance of implementing social practices focused on the hybridization of devices instead of on the dissociation of technologies.

Keywords: digital literacies, education, English language, technologies.

LETRAMENTOS DIGITAIS NA EDUCAÇÃO EM LÍNGUA INGLESA

RESUMO: Este artigo objetiva apresentar e discutir, com base nas teorias dos letramentos digitais, educação e tecnologia, os dados de uma pesquisa desenvolvida a partir da vivência em dois campi de um Instituto Federal de Educação, Ciência e Tecnologia da Região Nordeste. Neste trabalho, letramentos digitais são entendidos como práticas sociais envolvendo usos de dispositivos digitais, mas, ao mesmo tempo, como a hibridização de performances com tecnologias de suportes diversos, a exemplo dos dispositivos analógicos e eletrônicos, que têm emergido desde o século passado. As observações estruturadas e as entrevistas narrativas foram os instrumentos de geração de dados, sendo o método de análise baseado em Freeman (1998) e nos mecanismos de codificação de Auerbach e Silverstein (2003). Os resultados lançaram luz a temas sociais sobre os usos de tecnologias, a necessidade de pensar e problematizar o termo "tecnologia", assim como a relevância de implementar práticas sociais que tencionem a hibridização de dispositivos em vez da segregação de tecnologias.

Palavras-chave: educação, letramentos digitais, língua inglesa, tecnologias.

LOS LETRAMENTOS DIGÍTALES EN LA EDUCACIÓN EN LA LENGUA INGLESA

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RESUMEN: Este artículo tiene como objetivo presentar y discutir, con base en las teorías de las alfabetizaciones digitales, educación y tecnología, los datos de una investigación desarrollada a partir de la experiencia en dos campus de un Instituto Federal de Educación, Ciencia y Tecnología de la Región Nordeste. En este trabajo, las alfabetizaciones digitales son entendidas como prácticas sociales que involucran el uso de dispositivos digitales, pero, al mismo tiempo, como la hibridación de desempeños con tecnologías de diferentes soportes, como dispositivos analógicos y electrónicos, que ha surgido desde el siglo pasado. Las observaciones estructuradas y las entrevistas narrativas fueron los instrumentos de generación de datos, y el método de análisis se basó en Freeman (1998) y en los mecanismos de codificación de Auerbach y Silverstein (2003). Los resultados arrojaron luz sobre temas sociales acerca de los usos de las tecnologías, la necesidad de pensar y problematizar el término "tecnología", así como la relevancia de implementar prácticas sociales que pretendan la hibridación de dispositivos más que la segregación de tecnologías.

Palabras clave: educación, lengua inglesa, letramentos digítales, tecnologías.

I follow the advertisement and I see
In shapes of desire
A soap
In shapes of ice cream
I wake up and sleep
On television [...]
And, on the moon, I am
Just another sponsored cosmonaut...
(ALENCAR; MATHEUS, 1969)

TO BEGIN WITH...[1]

The above epigraph brings the song "Comunicação," which was written by Edson Alencar and Hélio Matheus. The song became widely known when it was performed by the singer Vanusa in 1969 during the "Festival da Música Popular Brasileira da Rede Record" [Brazilian Popular Music Festival of Record TV Network]. Later, it was also recorded and performed by other singers such as Elis Regina and Dóris Monteiro. Television, which was still an emerging means of communication, was presented in that song as a device that was influencing and dictating the daily life of society.

In 1969, the world was witnessing significant achievements, such as the moon landing, the early stages of internet projects, and constant advancements in the phonographic industry. Specifically in Brazil, the 1960s marked a leap in the field of communication, covering from the expansion of television networks that began in the previous decade to the establishment of the Brazilian Telecommunication Company (Embratel).

The social effects of new technological devices that emerged in the 1950s and 1960s were already being analyzed by communication scholars, such as Marshall McLuhan. In "Understanding Media: The Extensions of Man," published in 1964, McLuhan pointed out that informational vehicles were no longer merely providing access but they had become direct extensions of humanity. In McLuhan's own words, "the medium is the message," which means that technologies are not neutral elements and they can reflect humanity's characteristics, which shows that humans can use these devices for various purposes, including destructive ones.

Through this perspective, the discussions presented herein take into account that technologies of various dimensions and formats can influence human actions, thereby impacting society

[1] This article was developed based on the dissertation titled "Práticas de letramentos digitais em aulas de língua inglesa" [Digital Literacy Practices in English Language Classes] by Santos (2021). We present and discuss herein the highlighted analytical themes from that dissertation while revisiting the concepts of technologies and digital literacies. This research was allowed by the UFS Ethical Committee through the number 3.680.472 after institutional assessment.

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in varied ways. This article is characterized as a qualitative critical study by focusing on English language teaching, and it aims to problematize concepts of technology in contemporary society in the light of digital literacy theories. To do so, we discuss digital literacies in contemporary times, analyze processes of technology hybridization, and examine the effects of the internet on society through data generated in the field.

Taking into consideration the topics outlined above, this article aims to present and discuss an overview of the data generated through the investigation of technology usage in English language teaching practices by two teachers at two campuses of a Federal Institute of Education, Science, and Technology located in the Northeast, Brazil. To achieve that, we have chosen a specific focus that allows for a panoramic view of the elements explored in the original research proposal, which served as the basis for writing this article. Thus, this work places emphasis on the analytical themes that emerged from the data by re-interpreting them.

RETHINKING CONCEPTS ABOUT TECHNOLOGIES AND DIGITAL LITERACIES

The term technology has been restricted, especially in common sense, to the notion of digital and electronic devices. Such restriction ends up obscuring the concept of the word, which encompasses resources created or adapted by humans in order to mediate social practices, as well as to enhance sensory, muscular, and cognitive abilities (SANTAELLA, 1997). Especially in contemporary times, thus, the hybridization of technologies happens to be a striking aspect, as the development of new technologies does not imply the abandonment or extinction of the previous ones.

This expanded perception of the concept of technology is explored in this article based on the understanding of digital literacy theories, which perceive the social uses of devices and different supports as enhancers of language and habit construction. Santos (2021) provides the following definition for digital literacies:

> Digital literacies can be understood as social practices of reading, reflection, critical analysis, and meaning-making by those who, directly and indirectly, are influenced by the digital universe and the uses of various technologies. In broad terms, those literacies represent a conscious awareness of the digital universe and technologies in general (SANTOS, 2021, p. 79).

Even though digital literacies may seem to revolve only around reflection, they are effectively accomplished through making decisions based on the contexts we live in and the identities we assume in society (BOA SORTE; SANTOS, 2020). Thus, the idea of meaning-making and conscious awareness presented in the previous citation is based on the interweaving of reflection and action, in other words, a living consciousness. Therefore, digital literacies can be understood as social practices that involve the use of digital devices but also as the hybridization of such technologies with those of analog and electronic supports.

The initial perspectives on digital literacies, which were still grounded on a singular understanding, used to focus on literacies as practices predominantly linked to software and hardware (LANKSHEAR; KNOBEL, 2015). In the early context of the global internet, the expansion of television access, and electronic gaming communities, digital literacy was strongly associated with the technical mastery of digital device or system. As a result, those who understood how games worked as well as computer codes, and internet systems, for instance, were considered digitally literate.

As time went by, and in face of the increasingly widespread access to a wide range of digital resources, the demand for reflection on the uses of digital technologies was intensified. That happens to be a recurring element in human history, as the development and inclusion of emerging resources give rise to new attitudes and practices in society, which requires critical thinking about those elements (BOA SORTE; SANTOS, 2021). In this sense, digital literacy practice theories, as mentioned earlier, have been focused on the hybridization of technologies while being attentive to the unprecedented and different effects of including each new digital device or system in society.

Changes in access and operation of the global internet demonstrate how social practices evolve based on emerging resources. In the early stage of the internet, access was restricted, costly, and

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primarily limited to databases. In the subsequent phase, though, known as web 2.0, we witnessed the emergence of an expanded communicative character, especially due to the rise of social media platforms that resemble those prevalent today. In the current phase, a diluted mix between web 3.0 and 4.0, we observe a latent semantic phenomenon shaped by popular action but heavily driven by algorithms. Increasingly, the internet tends to personalize access, leading to new conflicts in meaning-making and decision-making arising day by day.

In this sense, the inclusion of resources and devices amplifies the development or adaptation of social habits. Digital literacies, therefore, suggest and demand awareness of social practices. That is how we summarize discussions on digital literacy practices that underpin this paper. We re-interpret that previous research report conducted some time ago, what means an interesting exercise of highlighting perceptions that may not have been well expressed. To exercise meaning-making herein, we bring two latent categories of digital literacy practices presented in Santos (2021), namely:

> (I) Digital literacy practices that focus on the analysis of the organization of digital environments both in structural aspects and navigation logic. These practices involve identifying how the design of digital environments, such as social media platforms, influence the content production and user interaction, ultimately leading to varied meaning-making processes. (II) Digital literacy practices that are primarily applied but which require understanding of contexts of production and performance. Some examples include the production of memes, fanfiction, remixes, and engagement in video games (SANTOS, 2021, p. 84).

In face of current maturity and after a process of destabilizing meanings previously made, we now consider that such demarcation may illustrate that practice and reflection do not always go hand in hand. Despite having created a figure with arrows symbolizing the interweaving between practice and reflection on languages through digital devices and environments, we recognize that this interrelation may not have been evident to all readers. Therefore, we take this opportunity to emphasize that the categories of digital literacy practices presented in the previous citation are inseparable, as both occur in the form of a rhizome, meaning they are intricately intertwined.

METHODOLOGICAL PATHS

This is a critical qualitative study in the field of Education and focused on English Language teaching. We embrace the notion of qualitative research in this work from a post-structuralist perspective, where we do not need to rely on quantitative aspects to establish scientific rigor. Furthermore, this study presents, as advocated by Galeffi (2009), a different kind of rigor, specifically the rigor inherent to post-structuralist research in the humanities. Thus, the objectives do not aim to establish hypotheses, as the focus is on not restricting the elements presented by the research field.

The data were generated through structured observations and narrative interviews with two English language teachers from two campuses of a Federal Institute of Education, Science, and Technology in Northeast, Brazil. For ethical reasons, we named the teachers Vanusa and Djavan, in reference to two Brazilian singers. To ensure the anonymity of the institutions, we have chosen to name the investigated campuses *Paralelas* and *Pétala*, songs recorded by the aforementioned interpreters.

As mentioned, the field research was conducted through structured classroom observation and narrative interviews with the teachers. The structured observation, based on Laville and Dionne (1999), helped to create a perceptual framework of the teaching and learning practices experienced. Therefore, the scheme developed for observing the classes contained spaces for noting elements that would assist in the phase of data organization and analysis, such as: the class, the course, the theme of the lesson, the teaching perspectives adopted, devices used, and other aspects relevant to the investigated contexts.

The narrative interview (JOVCHELOVITCH; BAUER, 2002), on the other hand, was adopted in order to create a comfortable setting for the teachers to share their life and teaching experiences regarding the use of technologies. Furthermore, the limited number of questions and the way they were formulated to invite free narration made the interview a light and productive moment. The

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teachers even posed their own questions and invited dialogue, particularly as they showed a positive reception to the manner in which the questions were crafted.

After the fieldwork, the data were organized and analyzed using the coding mechanisms of Auerbach and Silverstein (2003) and Freeman's analysis methodology (1998). Initially, the raw text from the transcriptions was labeled through dynamic reading, with fragments considered relevant being highlighted with text markers. Subsequently, recurring statements in each transcription were grouped into themes related to the theories discussed throughout the dissertation. Finally, connections were established between these themes, and the data were presented in the form of maps.

The methodology for data organization and analysis employed in this research is the result of constant dialogue in meetings of the Study and Research Group on Technologies, Education, and Applied Linguistics at the Federal University of Sergipe (TECLA/UFS). Thus, just as in the research reported in this article, other investigations, such as Santos (2020), Silva (2021), Barros (2022) Boa Sorte et al (2023), have reinterpreted the Teacher Research and the Coding Mechanisms through theoretically consistent lenses, and at the same time being subjective due to being carried out by different researchers.

TEACHING PRACTICES, TECHNOLOGIES AND DIGITAL LITERACIES

During the first phase of the field research, classroom observations took place in various classes taught by the two participants. All of those classes were part of an integrated high school programs, which means that students complete their high school education alongside technical training. The following majors are offered at Campus Paralelas, the campus where Professor Vanusa works: Agribusiness, Agriculture, Aquaculture, and Maintenance and Support in Information Technology. The majors offered at Campus Pétala, the campus where Professor Djavan works, are Civil Engineering, Electronics, and Computer Networking.

Both Professor Vanusa and Professor Djavan own *lato* and *stricto* graduate studies in English language. Both of them also worked in K-12 education before starting their careers as professors in the federal network of professional and technological education. As to the campuses' infrastructure, as both of them report later in the interview excerpts, all facilities are equipped with air conditioning, furnished and comfortable classrooms, and digital devices for teaching practices. Based on the observations and the participants' reports, thus, we consider the researched field as a flagrant scenario for digital literacy practices.

By taking a panoramic perspective, classroom observation helped spot our attention to the connection between digital and non-digital practices. The participants made use of analog and digital resources in most classes, as Professor Vanusa mostly used electronic devices, such as sound systems, with emphasis on classic language skills practice, like language listening. Professor Djavan, on the other hand, tended to use electronic and digital devices mainly to encourage students to convey the meanings made from images. It is also worth mentioning that both sought to base the teaching on grammatical points from a semantic perspective in which linguistic structures are not neutral and they provide different meanings in various social contexts.

After observing classes at both campuses for a few weeks, it was necessary to finish the first phase of field research in face of the suspension of in-person educational activities in Brazil and various social spaces of the world in mid-March 2020, due to the COVID-19 pandemic. Regarding data generation, that suspension did not directly affect the structured observation phase, as field visits had been ongoing since December 2019. However, narrative interviews were postponed, and they were conducted via videoconference only when remote teaching was implemented at the campuses.

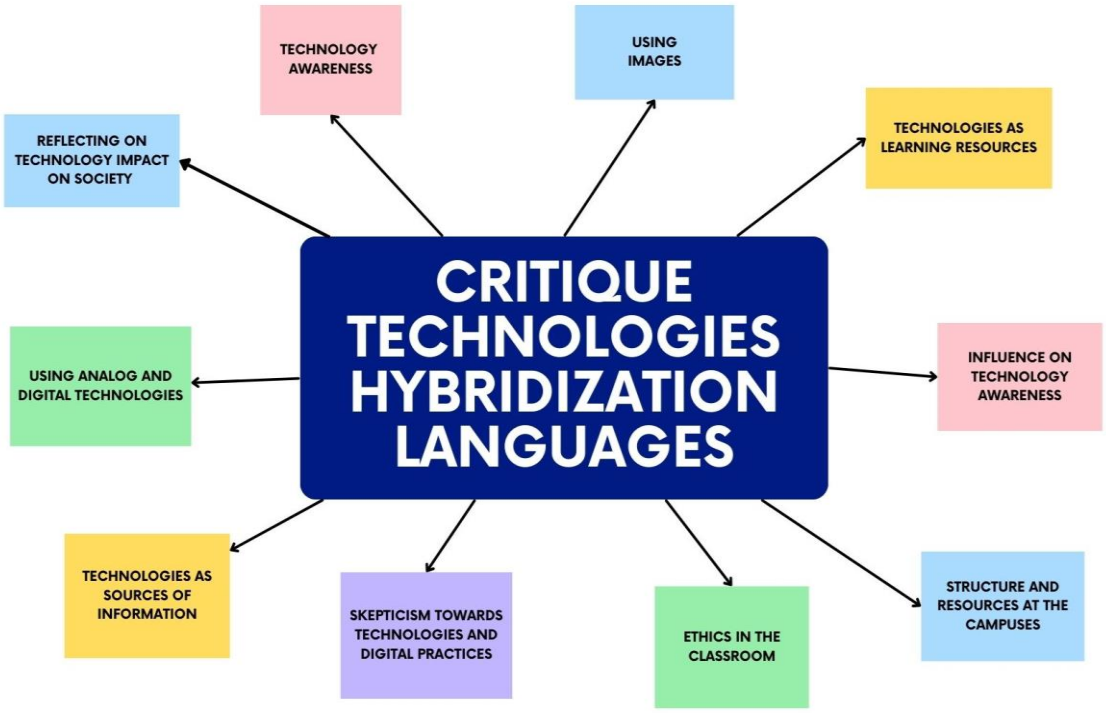
As a result, narrative interviews with Professor Vanusa and Professor Djavan were conducted through the Google Meet platform, which was officially used by the institute at that time, and they were recorded for later transcription and analysis. Since we were living in a pandemic and remote teaching context, some arguments during the interviews brought forth codes related to that current scenario, such as: technologies, internet, pandemic, access, critique, devices, and conflicts. Initially, those terms were related to the professors' expressions of uncertainty during the pandemic, and especially the instability caused by different levels of access to technology among students during remote education.

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Throughout the interviews, however, both professors reported experiences prior to the pandemic in which they were already using varied technological supports and devices. As a result, broader codes emerged, including: SIGAA (the academic management system adopted by the institute), books, cell phones, laboratories, computers, facilities, music, images, communication etc. Those codes helped to identify emerging themes that intertwined into a cohesive whole, which ended up picturing a perspective of technology hybridization in professors' educational practices.

Ten emerging themes arose from the narrative interviews with the participants. As data was named and grouped, some similarities and differences in their statements happened to be apparent. Thus, consensus and dissent relationships generated themes that were then discussed in light of digital literacy theories. In the following picture, ten themes are presented as the foundational elements of digital literacy theories are set at the center: critique, technologies, hybridization, and languages.

Picture 1 – Analytical themes



Source: adapted by the authors from Santos (2021)

The aforementioned themes are not taken as isolated elements but we consider the previous image as a way to systematize the topics for discussion based on the selected methodology for exploring and dealing with data. In the following sections, we provide excerpts from the professors' statements that represent aspects of each theme and discuss them in the light of the theories addressed[2].

Technology Awareness

As to this theme, some of the meanings made by the professors regarding the word "technology" are highlighted. Throughout the interviews, Professor Vanusa and Professor Djavan demonstrated a broad perspective of understanding technology, when they mentioned that devices from different historical periods influence educational processes. In the following excerpts, both of them converge in their belief that technology is not limited to digital or electronic support, and they also assert

[2] In an attempt to save space, we have chosen not to write paragraphs linking the themes presented herein. On the other hand, once the picture which symbolizes the themes brings the idea of joining them together, we felt comfortable to exercise such autonomy of choice while writing this paper.

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that the absence of internet connectivity does not render a technology outdated, as common perception tends to focus on what is up-to-date and extremely new.

> Professor Vanusa: technology is relevant. To me, even a ball is technology; so many things can be done by using a ball. [...] So, for me, technology is not just an electronic device.
> Professor Djavan: the notion of technology is much broader than what we tend to think today, as technology is usually limited to the internet. [...] So, that is not quite my view of technology. I believe that a blackboard is technology (INTERVIEWS, 2021).

The participants brought forth the perspective of understanding technology beyond the internet and electronic supports. This understanding could be linked to studies in semiotics and the philosophy of technology, as exemplified by Santaella (1997), where technologies are portrayed as devices encompassing mechanical, sensory, and artificial intelligence supports that impact humanity. Therefore, this is a perception of technology hybridization in society, which Cramer (2015) and Striano (2019) point out as an effect of the post-digital era. Thus, by proposing that students have the space to reflect on technologies through socio-historical contextualization intertwined with their social background, both professors end up enhancing digital literacy practices aimed at meaning-making.

Consequently, by embracing digital literacies as social practices, we realize the relevance of adopting a socio-historically situated attitude so that the use of technology does not occur based on trends, by chance or only as a result of personal opinions, whether positive or negative, about up-to-date devices. English language education that incorporates digital literacy studies aims at understanding language experience as a critical and reflective process. It is then a process that remains open to the new as it could be incorporated into the socially established devices. Above all, as Selwyn (2022) points out, it involves recognizing that we are not neutral and that technologies provide meanings and actions that are largely influenced by human attitudes.

Using images

In this theme, the professors' statements highlight the relevance of images in English language classes. For Professor Vanusa, thus, images are meaningful resources for capturing students' attention and participation, especially when it comes to assisting in the comprehension of typographic texts as well as for vocabulary study. On the other hand, Professor Djavan asserts that images can serve as both the starting point of a lesson and the focus of discussion. He then considers that images are interpreted as independent texts and not just scaffolds for encoding a main text.

> Professor Vanusa: I talk a lot with my students, usually when there is a text, some topic related to food, then I take that moment and do pre-reading with them, I ask them to look at the images, and I start asking: folks, what do you think this image is trying to convey?
> Professor Djavan: There were situations where the entire lesson was based on just one image... By using one image, we discussed an entire lesson. It was a lesson where I was explaining to the students some, you know, techniques and strategies used in social communication, and we were working more on the discursive part of the language (INTERVIEWS, 2021).

Images are recurrent and essential elements in digital cultures. In this sense, the teaching practices employed by the participants encompass a perspective of embracing the "cipher of the present." Consequently, they generate learning, whether through practices where image texts support the decoding of a typographic text or those where images are the central elements of the lessons. Thus, in the context of digital literacies (LANKSHEAR; KNOBEL, 2015; KALANTZIS; COPE; PINHEIRO, 2020), an attitude of interaction between media is once again evident in the participants' practices.

When reading images, as suggested by Souza (2018), we need to inquire our position as readers, so as not to be confined to possible meanings intended by the original author. When reading images, as mentioned previously, we are reading our own understandings because perceptions of any text, whether visual or typographic, are always a product of our interpretive position. Our interpretive locus,

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which is situated within social, historical, and geographical context, does not necessarily represent what the other intended to convey. Therefore, reading is fundamentally a subjective act.

Technologies as learning resources

The statements in this theme signal the perceptions and attitudes of both professors regarding the technologies they use in their classroom practices. As a field of knowledge that has historically embraced emerging technologies, foreign language teaching tends to focus on instructional resources. By taking Professor Vanusa and Professor Djavan's assertions into consideration, we can observe the presence of classic elements of language teaching, such as listening to music, watching movies, and using textbooks. Therefore, resources like mobile phones, speakers, projectors, and computers were frequently mentioned by them.

> Professor Vanusa: So, technology here was essential because I was able to download the song, my daughter downloaded it for me, but, you know, technology enabled what? That I could download the song, that I could download the video clip, that I had the possibility to reserve a computer at school, bring the projector, the data show, use the soundbox.
> Professor Djavan: For example, the mobile phone is often not welcome, and that's it, you know? Sometimes we do not even think of it as a resource, and the book is often thought of as a resource, and that is it, and it is not even questioned that sometimes a lesson with just the book can become very boring, just as a lesson with the mobile phone can become a transfer of what the book is to the phone (INTERVIEWS, 2021).

Both Professor Vanusa and Professor Djavan have worked in varied educational settings before taking part in the federal technical education system. Therefore, both emphasized the relevance of the resources they currently have available for their practices. Professor Vanusa highlighted how beneficial it is to use audio and video in an English language class, which aligns with the perspective of multimodal literacy proposed by Kalantzis, Cope, and Pinheiro (2020). Professor Djavan mentioned, however, that resources need to be used in the classroom in order to enable reflection for both students and teachers. He pointed out the underutilization of devices, once he considers that digital resources are usually used as a mere transposition of actions that could be performed with non-digital supports.

Therefore, we embrace the perspective advocated by Lankshear and Knobel (2015) for a reflective and active attitude toward the use of technology both inside and outside the classroom. School practices can then encompass the textual genres that students produce in their digital cultures. Platforms like Twitter, Instagram, and TikTok can be worked into the classroom as environments for creative production of multimodal texts. However, it is relevant to notice that the use of those platforms does not have to happen in a separate moment from the lesson; it can be integrated into the curriculum content. By taking it this way, the written and spoken expression of English language becomes increasingly socially contextualized in the classroom.

Influence on technology awareness

As to this theme, the professors discussed how interactions with other people impact their relationship with technological devices. While Professor Vanusa mentioned how her peers encouraged her to be more open to new technologies, Professor Djavan emphasized the relevance of dialogues with others in shaping their understanding of what technology is. Both highlighted that the attitudes they adopt in the classroom and in personal contexts, especially regarding the use of technology, are largely influenced by interpersonal interactions.

> Professor Vanusa: Despite the world around me suggesting that I should evolve in this regard, I have always been very resistant because I thought about... we hear so much about cybercrimes [...]. In face of this pandemic situation, I found myself compelled to... (laughs)... bring about this revolution in my life.

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> Professor Djavan: One thing I learned from my partner in these dialogues is that the notion of technology is much broader than what we tend to think today, that technology will be limited to the internet or to some device connected to the Internet of Things (INTERVIEWS, 2021).

Professor Vanusa's statements emphasize the need for caution and vigilance on the internet, especially in the light of commonly reported cybercrimes. On the other hand, Professor Djavan tends to reflect more frequently on conceptual elements in his statements, which is primarily to bring meaning to the use of technology. Those arguments demonstrate that our meanings are made from our lived contexts as well as from our socially situated attitudes toward technology.

Throughout the interviews, the professors also mentioned how the pandemic and remote teaching influenced their attitudes toward internet usage. Due to the need of physical distancing in mid-2021, particularly due to the rising infection rates, they realized how diverse the access to digital devices and the internet was among students. In many cases, students did not have sufficient data plans nor wi-fi networks to participate in synchronous meetings. In other cases, exhaustion as a result of not having a home environment conducive to concentration during classes also negatively impacted students' participation and attendance.

Structure and resources at the campuses

In this theme, the professors pointed out the importance of working in an institution that provides digital and electronic equipment in classrooms or which makes them readily available when needed to implement teaching practices. Both Professor Vanusa and Professor Djavan emphasized the importance of everyday resources such as water, electricity, and ventilation for the proper conduct of classroom activities. They also mentioned, at key points in the interviews, the Integrated Academic Activities Management System (SIGAA) as a facilitator for recording activities and uploading files.

> Professor Vanusa: This year, all classrooms are equipped with air conditioning, at least in the upper buildings, except for Agroindustry, but it is structured... There is a medical department, a dental department, you know? A psychologist... Not every private school provides that; so, I do not know about others, but I admit that, for me, just repeating, given my background, where I came from, it is the dream school for any teacher.
> Professor Djavan: It is a very well-structured facility, isn't it? (laughs)... Despite the redundancy, as I mentioned earlier, we have projectors integrated into the classrooms where they are operated through the 'Internet of Things' system; so, I use an application on my computer that connects directly to the projector... We have internet on campus, although it often fails, but it helps a lot having internet available on campus (INTERVIEWS, 2021).

The professors' comments regarding other technological resources that are not necessarily instructional help us consider the ubiquity of technology hybridization in our society. We have frequently discussed (Boa Sorte; Santos, 2020, 2021) how the analysis of meanings made toward technology constitutes a socio-historical attitude since thinking about technology is a social action. Therefore, by pointing to the importance of technology and campus infrastructure, both professors demonstrate how access to goods and services is a necessary right for the effectiveness of educational practices based on social justice.

The infrastructure equipped with various devices and comfortable environments is a point commonly emphasized by Professor Vanusa, especially because she has previously worked in contexts with limited access to resources. Professor Djavan raises an important point by mentioning that the provision of resources allows classroom activities to be more diverse and enables the effective coverage of contemporary topics through internet access. Therefore, the greater the access to goods and services in educational institutions, the greater the chances of implementing digital literacy practices.

Ethics in the classroom

In this theme, the professors reported how certain students' approach towards digital technologies can deviate from the purposes established for the class. In this sense, Professor Vanusa

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mentioned the constant lack of attention to the curriculum content due to the access to social media and games during explanations and discussions in the classroom. Professor Djavan expressed his opinion that students often emphasize understanding digital devices and the internet solely as entertainment and, when those devices are taken as educational resources, they are limited to translating English texts.

> Professor Vanusa: So, they end up doing something else, as going to another technology, which happens to be their cell phones because they take advantage of the fact that the classroom is, let's say, relatively dark, they lower their heads, and go on a social network or play a game... They leave that classroom moment that should be more integrated, and they integrate with other people in different situations with another technology as well.
> Professor Djavan: So, there are situations where students need to use technology during the classes, and this also becomes more of an ethical discussion. For instance, when I am teaching instrumental English... Instead of engaging with the text, they immediately turn to a tool that translates the text (INTERVIEWS, 2021).

In the selected excerpts which represent this theme, both participants make comments on classroom behaviors involving technology use that they do not consider to be ethically grounded. For Professor Vanusa, the use of the internet for non-educational purposes during class time goes against the goals of teaching. She advocates for social justice by considering that access to knowledge can provide opportunities for improvement that many people do not have. This implies then a perception that broadens horizons and possibilities. On the other hand, Professor Djavan emphasizes the importance of knowing how to use devices as enhancers of linguistic study rather than underutilizing their functions only to complete required activities.

Skepticism towards technologies and digital practices

In this theme, the participants emphasized the need of constantly reflecting on the use of technologies. Professor Vanusa pointed out the action of staying informed about current news as a way to avoid behaviors that could negatively affect personal integrity in society. On the other hand, Professor Djavan highlighted what he calls "intellectualism," which involves seeking a broad range of knowledge in various fields to analyze the everyday use of digital devices.

> Professor Vanusa: This is the great danger of technology: it allows us to do ten things at once, and we cannot complete any of them fully, we cannot dedicate ourselves... So, in the classroom, I think it is important once in a while.
> Professor Djavan: I am not the type of person who is against technology, but I also do not see myself as an enthusiast of new technologies to the point of thinking that they came to solve everything... They came to open many paths and make many things easier, but at the same time, interpersonal relationships are still very significant in this regard (INTERVIEWS, 2021).

According to the Cambridge and Merriam-Webster dictionaries (2023), the word "skepticism" can represent an attitude of doubt towards elements of life, whether they are objects, doctrines, or methods. We adopted the term "skepticism" as central to name this theme because we observed a constant concern from the teachers about balancing the benefits and drawbacks of using technologies in the classroom, and in everyday life. In this case, despite both considering technology on a macro scale, there is an emphasis on digital and electronic support devices. In this sense, the focus on digital technologies and the internet is due to the fact that they pose the most challenges in the present time, which ultimately requires, as Selwyn (2022) argues, a certain level of skepticism.

Technologies as sources of information

As to this theme, the potentialities of analog and digital devices as means to access information and content are presented. During classes she teaches at Campus Paralelas, Professor Vanusa often uses devices such as computers, projectors, textbooks, and speakers as tools to explore English language texts. That shows an approach focused on understanding the use of these devices as media for

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the study of language points. During his classes at Campus Pétala, Professor Djavan also uses digital resources to teach English language content, but his focus is generally on creating discussions and generating ideas from videos or images, which is not necessarily concentrated on grammar topics.

> Professor Vanusa: I took the students to the computer lab, and they started researching philately. So, they began researching stamps and the history of stamps. Many became interested, and some students even competed in a contest promoted by the postal agency at that time.
> Professor Djavan: I brought statistics from academic research on the concept of happiness, and how such idea of happiness is assimilated in different countries, what elements contribute to a high level of happiness and so on... Among the reasons there is the high access to technology and information... So, it was more in that sense (INTERVIEWS, 2021).

In the aforementioned speeches, both participants showed enthusiasm for the current scenarios of digital cultures, in which students have access to various sources of information. Professor Vanusa highlighted aspects that align with the early practices of digital literacy, such as the ability to conduct research and organize data on the internet, as mentioned by Lankshear and Knobel (2015). On the other hand, Professor Djavan tended to reflect and invite students to analyze how society has appropriated and interacted with digital environments. Thus, while Professor Vanusa observed the latent desire of students to seek content related to the English language on digital platforms, Professor Djavan preferred to explore contemporary themes that emerge from digital cultures.

Using analog and digital technologies

For this theme, the participants pointed out the clear interplay between various support devices in contemporary times. Professor Vanusa went back in time to discuss her perception on the issue of the massive technological waste we have been experiencing for decades. According to her, as the technology landscape changes, it has been frequently leading to increased consumerism and impacts on human relationships. On the other hand, Professor Djavan argued that technologies responsible for lighting and cooling classrooms and school environments are essential for maintaining good teaching practices.

> Professor Vanusa: The right word you used was that: balance. We cannot be too technological, digitally speaking, and we cannot be stuck in the Stone Age either! (Laughs) But we have to mix it up.
> Professor Djavan: I got to have a certain range of versatility, including both these new technologies and other possible technologies. So, if we got run out of power on campus, I would not have problems conducting a class by using a blackboard in improvisation... Things like temperature and lighting, which we might not think about so much when planning a class, but they make a big difference in how a class progresses (INTERVIEWS, 2021).

In the excerpts, both of them emphasize the importance of balancing teaching practices by using various support devices. As mentioned in the theme about the infrastructure of the campuses, the participants highlighted the relevance of architectural and engineering aspects of a classroom as crucial for educational activities. At a certain point in the interview, Professor Vanusa shared experiences from another educational network where she taught classes for more than 40 students in poorly ventilated rooms. Professor Djavan emphasized that he does not rely solely on digital devices in the classroom, and he also mentioned the importance of structural elements within the institution.

Reflection on technology impact on society

As to this final theme, the flagrance of maintaining a constant reflective stance towards the use of technologies was emphasized. In this regard, the participants pointed out the need to consider the historical time in which we live. Professor Vanusa and Professor Djavan shared their perception of the recurring anxiety experienced by many students and teachers during remote teaching required by the covid-19 pandemic. Additionally, both brought up the importance of rethinking expressions on social

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media, such as the notion of happiness, which have been revisited to understand how we are expressing our feelings in contemporary times, drawing from references of the present and the past.

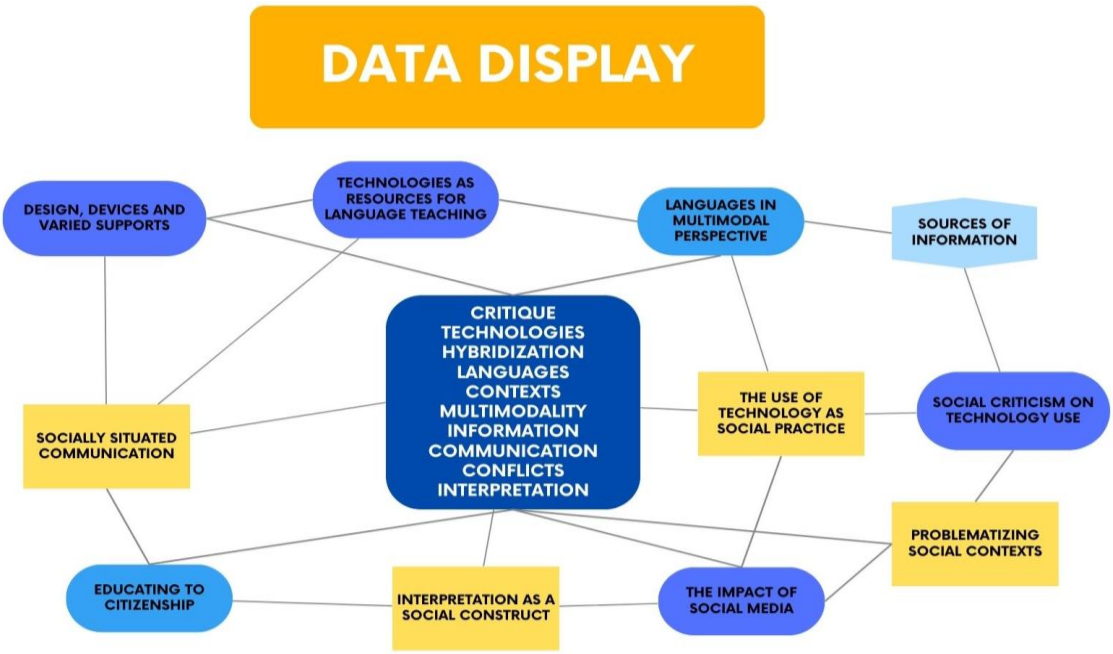
> Professor Vanusa: Technology does indeed have its benefits, I believe much more, but at the same time, it is detrimental because it controls our lives.
> Professor Djavan: This perception of the digital space as an alternative reality to the physical space... as an alternative reality, you know? Not everything we experience within the virtual realm necessarily aligns with what happens outside of it (INTERVIEWS, 2021).

Throughout all the themes, as well as in this specific one, both professors reflected on the relationships they establish with technologies inside and outside the classroom. It was flagrant that both appreciate the integration of digital devices in their teaching, but at the same time, they make an effort to distance themselves to understand the effects of those resources on human experiences. They frequently mentioned the conflicts of experiences on social media, as representations of life in the virtual world do not always align with the feelings experienced by people in their face-to-face social contexts.

Data summary

Based on the elements that emerged from observations and interviews, we present a synthesis of the research data. By taking a re-arranging movement, where all elements intertwine, a triangulation was exercised between the data generated in the field and the theories that underpinned the research objectives. Thus, especially in understanding that we make meanings about the field and the data, we always sought a place of attentive reading and reflection on our experiences with the participants and the data, which was not seen as distant and neutral. The constant interplay between data and theories, including in the coding and naming of themes, was then characterized as a constant attempt to comprehend the research issues through the prism of the rhizome. The following picture provides an overview on the aspects that emerged from data analysis:

Picture 2 – data overview



Source: adapted by the authors from Santos (2021)

The elements presented in the picture represent the recurring practice of both participants in proposing situated learning, especially concerning with the sociocultural contexts in which language production is embedded. Thus, the digital literacy practices implemented in the investigated teaching and learning experiences aimed to interweave the use of technologies linked to the need for reflection while

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engaging in digital practices. By taking such approach, as advocated in the theoretical foundations of digital literacy, technologies are taken as elements of social action; just like any other aspect of humanity, then, they require critical awareness through a constant reflective attitude based on self-reflection and understanding of others.

SOME REMARKS

This article presented a panoramic perspective of the data and themes generated through the investigation on the use of technologies in the teaching practices of two English language professors from two campuses of a Federal Institute of Education, Science, and Technology located in Northeast, Brazil. In a nutshell, the themes revealed that the participants provide moments in class for the inclusion and use of analog, digital, and electronic technologies. In general, the use of technologies was related to the development of language skills, such as listening and reading in English language, as well as addressing contemporary social themes.

Based on the presented and analyzed data, we conclude that the investigated contexts exhibit clear elements related to the perspective of meaning-making, which is a core element in digital literacy theories. On the other hand, considering the generated data and the experiences in the observed contexts, we did not find evidence of digital literacy practices in which students act as meaning and language builders specifically in direct contact with social media, digital environments, or processes of bricolage related to internet elements, even in analog media. Therefore, the observed digital literacy practices were strongly linked to a reflective nature of language.

REFERENCES

ALENCAR, Edson; MATHEUS, Hélio. Comunicação [Canção gravada por Vanusa]. Em *Festival da Música Popular Brasileira da Rede Record de 1969* [vinil]. São Paulo: Rede Record, 1969.

AUERBACH, Carl; SILVERSTEIN, Louise B. *Qualitative data*: an introduction to coding and analysis. New York: NYU Press, 2003.

BARROS, Emanuelle Silveira Nunes. *Tecnologias digitais em cursos livres de inglês*: lógicas da educação neoliberal. Dissertação (Mestrado em Educação). São Cristóvão, SE: Universidade Federal de Sergipe, 2022.

BOA SORTE, Paulo; SANTOS, Jefferson do Carmo Andrade. Memes em aulas de língua inglesa: explorando práticas de multiletramentos. *Revista Educação em Questão*, n. 58 , p. 1-18, 2020. https://doi.org/10.21680/1981-1802.2019v58n55ID18439

BOA SORTE, Paulo; SANTOS, Jefferson do Carmo Andrade. Fake news em aulas de língua inglesa: formação para contextos pós-digitais. In: LACERDA, Marcelo. M.; SOUZA, Jacqueline R. *Tecnologias e o ensino de línguas*. Jundiaí-SP: Paco Editorial, 2021, p. 85-107.

SORTE, Paulo Boa; SANTOS, Jefferson do Carmo Andrade.; SANTOS, Allessandra Elisabeth dos; SILVA, Laila Gardênia Viana; SILVA, Nayara Stefanie Mandarino. Entrelace analítico como metodologia de pesquisa em educação no paradigma emergente. Revista Educação em Páginas, Vitória da Conquista, v. 2, p. e13531, 2023. DOI: 10.22481/redupa.v2.13531. Disponível em: https://periodicos2.uesb.br/index.php/redupa/article/view/13531. Acesso em: 2 jan. 2024.

CAMBRIDGE DICTIONARY. (s./d.). Skepticism. *Cambridge Dictionary English-English*. Acessed on 06 de junho de 2023. URL: https://dictionary.cambridge.org/us/dictionary/english/skepticism

SciELO Preprints - This document is a preprint and its current status is available at: https://doi.org/10.1590/SciELOPreprints.7834

CRAMER, Florian. What is post-digital? In: BERRY, David M.; DIETER, Michael. *Postdigital Aesthetics*: art, computation and design. Palgrave: Macmillan, 2015, p. 12-26.

FREEMAN, Donald. *Doing teacher-research*: from inquiry to understanding. Boston, USA: Heinle Publishers, 1998.

GALEFFI, Dante (2009). O rigor nas pesquisas qualitativas: uma abordagem fenomenológica em chave transdisciplinar. In: MACEDO, Roberto Sidnei; GALEFFI, Dante; PIMENTEL, Álamo. *Um rigor outro sobre a qualidade na pesquisa qualitativa*: educação e ciências humanas. Salvador: EDUFBA, 2009, p. 13-73.

INTERVIEWS. Aracaju (Sergipe/webconference), 2021. In: SANTOS, Jefferson do Carmo Andrade. *Práticas de letramentos digitais em aulas de língua inglesa*. Dissertação (Mestrado em Educação). São Cristóvão, SE: Universidade Federal de Sergipe, 2021.

JANKS, Hillary. Reading texts critically. In: JANKS, Hillary. *Literacy and Power*. USA: Routledge, 2010, p. 61-98.

JOVCHELOVITCH, Sandra; BAUER, Martin W. Entrevista narrativa. In: BAUER, Martin W.; GASKELL, George. *Pesquisa qualitativa com texto, imagem e som*: um manual prático. Tradução de Pedrinho A. Guareschi. Petrópolis, RJ: Vozes, 2002, p. 90-113.

KALANTZIS, Mary; COPE, Bill; PINHEIRO, Petrilson (2020). *Letramentos*. Campinas: Editora da Unicamp, 2020.

LANKSHEAR, Collin; KNOBEL, Michelle. Digital Literacy and Digital Literacies: policy, pedagogy and research considerations for Education. *Nordic Journal of Digital Literacy*, n. 4, 8-20, 2015. https://researchwith.montclair.edu/en/publications/digital-literacy-and-digital-literacies-policy-pedagogy-and-resea

LAVILLE, Christian; DIONNE, Jean. *A construção do saber*: manual de metodologia da pesquisa em ciências humanas. Tradução de Heloísa Monteiro e Francisco Settineri. Porto Alegre: Artmed, 1999.

MCLUHAN, Marshall. *Os meios de comunicação como extensões do homem*. Tradução de Décio Pignatari. São Paulo: Cultrix, 1974.

MERRIAM-WEBSTER. (s./d.). Skepticism. *Merriam-Webster Dictionary English-English*. Accessed on 06 de junho de 2023. URL: https://www.merriam-webster.com/dictionary/skepticism

SANTAELLA, Lúcia. O homem e as máquinas. In: DOMINGUES, D. (Org.). *A arte no século XXI*: a humanização das tecnologias. São Paulo: UNESP, 1997, p. 33-44.

SANTOS, Allessandra Elisabeth. *Representações de professoras de inglês sobre tecnologias e sua relação com a prática docente*. Dissertação (Mestrado em Educação). São Cristóvão, SE: Universidade Federal de Sergipe, 2020.

SANTOS, Jefferson do Carmo Andrade. *Práticas de letramentos digitais em aulas de língua inglesa*. Dissertação (Mestrado em Educação). São Cristóvão, SE: Universidade Federal de Sergipe, 2021.

SELWYN, Neil. Techno-skepticism in the classroom: an interview with Marie Health. *Meet the Education Researcher*. USA, 2022. Available on: URL: https://criticaledtech.com/2022/08/17/techno-scepticism-in-the-classroom-an-interview-with-marie-heath/

SciELO Preprints - This document is a preprint and its current status is available at: https://doi.org/10.1590/SciELOPreprints.7834

SILVA, Laila Gardênia Viana. *Práticas docentes no SIGAA à luz dos letramentos digitais*. Dissertação (Mestrado em Educação). São Cristóvão, SE: Universidade Federal de Sergipe, 2021.

SOUZA, Marlene Almeida de Augusto. Formação de professores de Inglês: buscando caminhos para uma Educação linguística crítica. In: PESSOA, Rosane Rocha; SILVESTRE, Viviane Pires Viana; MONTE MÓR, Walkyria. *Perspectivas críticas da Educação linguística no Brasil*: trajetórias e práticas de professoras(es) universitárias(os) de Inglês. São Paulo: Pá de Palavra, 2018, p. 163-174.

STRIANO, Francesco. Towards "post-digital": a media theory to re-think the digital revolution. *Ethics in Progress*, n. 10, p. 83-93, 2019. https://www.academia.edu/39316174/Towards_post_digital_A_media_theory_to_re_think_the_digital_revolution

AUTHORS' CONTRIBUTION

Author 1 – collection, organization and analysis of data; conception, display, writing and review of the paper.
Author 2 – conception, display, writing and review of the paper.

CONFLICT OF INTEREST STATEMENT

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