



## BETWEEN DIGITAL RESPONSES AND EXPERIENTIAL KNOWLEDGE: CHATGPT AND EDUCATION FROM A CRITICAL PERSPECTIVE

### ENTRE RESPOSTAS DIGITAIS E SABERES EXPERIENCIAIS: O CHATGPT E A EDUCAÇÃO EM PERSPECTIVA CRÍTICA

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**Abstract:** Digital advances are reshaping education by expanding access to online resources and generating reflections on their impact in contemporary society. The growing use of Artificial Intelligence (AI)—such as ChatGPT—in education brings efficiency, but incurs ethical dilemmas. This article explores to what extent this tool can replace human memory and experience by analyzing identical interviews conducted with a human teacher and ChatGPT, using eight structured questions for comparison. Analysis of the answers, carried out using IRaMUTeQ software, reveals differences in lexical distribution and thematic focus. The results show that ChatGPT does not replace human experience, highlighting differences in language and thematic emphasis between the human teacher and the AI. This study underscores the need for a critical examination of the relationship between humans and technology in qualitative research and highlights the importance of an ethical approach to using these tools.

**Keywords:** Critical Theory; Artificial Intelligence; Memory; Teacher Education; Technology.

**Resumo:** Os avanços digitais transformam a educação ampliando o acesso a recursos *online*, e geram reflexões sobre seu impacto na sociedade contemporânea. O uso crescente das Inteligências Artificiais (IA), como o ChatGPT, que na educação traz eficiência, todavia incorre em dilemas éticos. Este artigo discute até que ponto essa ferramenta pode substituir a memória e a experiência humana, por meio da análise de entrevistas idênticas feitas com uma professora humana e o ChatGPT, usando oito perguntas estruturadas para comparação. A análise das respostas, feita com o *software* Iramuteq, identifica diferenças na distribuição lexical e no foco temático. Os resultados mostram que o ChatGPT não substitui a experiência humana, evidenciando diferenças na linguagem e no foco temático entre a professora humana e a IA. Esse estudo enfatiza a necessidade de considerar criticamente a relação entre seres humanos e tecnologia na pesquisa qualitativa e destaca a importância de uma abordagem ética no uso dessas ferramentas.

**Palavras-chave:** Teoria Crítica; Inteligência Artificial; Memória; Formação de Professores; Tecnologia.

#### 1 Prelude to reflection

*Bucolic technology  
Evolutionarily backward  
I wanted to see life from another perspective  
You tricked me, you devil  
(Nilo Carvalho, 2005)*

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The advance of digital technologies and resources has aroused interest in education and teaching research. The contribution of these advances to teaching, learning and knowledge production processes is unquestionable. This very text, written in a program installed on a computer, has bibliographical references that go beyond physical books, including articles and academic texts accessed, edited, and indexed on online platforms, available to anyone worldwide with just one click.

Although the contribution of these technological tools to the production of knowledge in Education and their use in the school environment is indisputable, it is necessary to consider that these changes occur exponentially and can be incorporated into people's daily lives without thorough reflection, intensifying the alienation processes of late-modern society, as advocated by Hartmut Rosa (2022). In this scenario, as educators and educational researchers, it is a *sine qua non* condition to reflect on and debate how these technologies impact on the educational processes of which we are a part and, above all, how they have influenced us so far.

For Feenberg (2010a), both Science and Technology are based on the rational thinking of empirical observation, as presupposed by the Enlightenment. What differentiates the two fields is that, while Science is concerned with the search for truth and knowledge, Technology focuses on utility and control. These two forces have become essential beliefs in the modern world and are present in everyday life, however, the presence of technology has contributed to technical rationality deepening and predominating over other modes of thought.

The aim of this article is to discuss how ChatGPT and a teacher understand technology-related issues and, through their answers, to analyze whether the studied artificial intelligence can replace a human teacher experience.

## **2 ChatGPT and education: some critical lines**

One factor that has generated many discussions, both in formal and informal research and teaching environments, concerns the recent advance of Artificial Intelligence (AI) in education. This tool, which decades ago surpassed the limits of its original field of knowledge, is now part of people's daily lives, especially educators and students. Not only explored in popular culture, movies, and science fiction books, AI is also increasingly present in applications and websites that promise to perform a variety of manually laborious and time-consuming tasks in a matter of seconds.



If the reader is not familiar with the recent advances in this field, which are easily available and for free on the Internet, here are some examples that will probably be obsolete by the time this text is evaluated, edited and published: The *Durable* website is able to generate websites with images and text for a business in a matter of seconds; *Beautiful IA* creates slide shows with various design styles when the user inserts text commands; *Tldv.io* is able to create notes and transcribe online meetings in an automated way; and ChatGPT, which has generated a lot of debate mainly among graduate students and researchers in Education, in the words of artificial intelligence itself, can be defined as:

ChatGPT is a language model developed by OpenAI that uses artificial intelligence to converse and answer questions in natural language. It is trained on a wide variety of texts and can provide information, perform simple tasks and even take part in informal conversations. It is a technology that aims to assist and interact with users in a similar way to a virtual assistant (OpenAI, 2023, free translation).

Indeed, those who use ChatGPT understand its potential, but are also faced with the ethical implications of this tool. In a matter of seconds, it is able to provide answers to a wide range of questions, as long as the information is in its database. The authors of this article only had access to the free version, but it has already been improved in a paid version, capable of interpreting graphic information and generating long texts.

However, when considering the use of this tool in the school and academic environment, it is important to reflect on the ethical implications, given that this, as well as other technological changes have occurred within the acceleration process discussed in Rosa (2019, 2022), without due time for reflection and planning of the use of technology in these contexts, which could lead to the possibility of unethical behavior. Although information is more accessible than ever—thanks to online search engines like Google—it is necessary to consider how the use of such a tool can affect the educational environment. It is essential to consider aspects such as excessive dependence on technology, the lack of development of research and critical evaluation skills, and the preservation of the originality and authenticity of academic work.

The editorial by Rossoni and ChatGPT (2022), for example, presents other texts written with the co-authorship of an AI, as well as data from an article published in Nature (ELSE, 2023) which indicate that medical researchers cannot easily distinguish which abstracts of academic articles were written by artificial intelligence or by human beings. The editorial also reveals, at its end, that the text that was co-authored with ChatGPT was all produced by artificial intelligence, but that the text was completely dependent on the



author's ideas, orientations, textual constructions and conjunctions, and that it was just a tool that depended on human guidance and supervision.

Recent studies in the field of Education have already addressed the use of ChatGPT in teaching. For example, in the text by Sant'Ana, Sant'Ana and Sant'Ana (2023), the use of ChatGPT in teaching has been explored as a tool for preparing lessons for a Mathematics degree class. The text reports on the use of the tool to draw up lesson plans and activities, such as mathematical problems, explaining that they stressed the need to ask well-structured questions or requests with as much information as possible to the AI, in order to obtain a result close to what was expected. In the authors' words:

We understand that it is premature to state and define the fair measure of AI's influence and capacity to transform science and education, but we believe that there will be a significant impact, at least regarding saving time, analyzing data and models and, of course, helping teachers and students to carry out their activities. For us, ChatGPT offers possibilities for use in education in general, helping teachers and students and will probably require new attitudes and directions from everyone (Sant'Ana, Sant'Ana and Sant'Ana, 2023, p. 83, free translation).

The potentialities presented by the authors express and awaken an inclination towards an optimistic approach that even considers time savings and other positive possibilities of using tools such as ChatGPT. However, it is essential to weigh up the possible ethical dilemmas, without taking a stance that aims to go back to the past or demarcate an exclusively humanist perspective. This corroborates Buzato's (2023) position that it is necessary to avoid the alienating technological determinism, but without denying the merit of techno-scientific endeavors that facilitate and streamline useful tasks for society. However, reflection on the impacts and consequences of the improper use of these technological tools, which often stop helping in the development of tasks in order to carry out the tasks themselves, should not be overlooked.

Technological acceleration is one of the processes mentioned by Rosa (2022), who explains that this process necessarily implies a reduction in the time needed to carry out an action, in the same direction as the forecast by Sant'Ana, Sant'Ana and Sant'Ana (2023). However, Rosa (2019; 2022) points out an obvious contradiction in modernity, in which this technological acceleration should imply an increase in free time, since the hours to carry out a task, as in the aforementioned example, of creating lesson plans, would be shorter. Therefore, hours should be abundant. However, what we see in modern society is a growing acceleration, and a shortage of time, as tasks increase. One example that Hartmut Rosa gives, which is obvious to teachers and researchers, is the remarkable progress associated to emailing, saving time in the communication process, as compared,



for example, with other forms of communication, like letters or telephone calls. At the same time, the demand for this means of communication has increased, and we are faced with overflowing email boxes on a daily basis.

This is true for the world of science, where it could be argued that the speed and succession of conferences and articles is so high and—what is much worse—the number of texts, books and journals published is so excessive that people producing essays and presentations in the era of “publish or perish” hardly find enough time to properly develop their arguments, while people reading and listening are lost in a legion of repetitive and somewhat crude publications and presentations (Rosa, 2022, p. 78, free translation).

Da Silva Duarte (2023), in his book chapter, did the exercise of talking to ChatGPT about child literacy, and concluded that the AI gave coherent answers on the subject, based on the knowledge available on the internet. This article aims to carry out a similar exercise, but using the assumptions of Critical Theory. The aim was to produce, as Nobre (2004) points out, a diagnosis of the present time, observing the structural trends of the topic in question, namely the use of ChatGPT in education. After a conversation with a retired early childhood school teacher, we asked the AI the same questions. Our proposal in this text is to discuss the extent to which this tool provides information, capable or not of replacing human memory and experience.

### 3 A cyborg dataset: choices of methodological path

Having made these considerations, the respective interviewees will tell us in their own words who they are and where and when they worked in education. So that the teacher interviewed is not identified, as agreed in the Informed Consent Form (ICF), her name has been changed and she will be referred to as “human teacher” in this article. In addition, two time periods indicated in her interview, in which the human teacher held management positions through which she could be identified, have been suppressed. These were the answers to the contextualization question “Who are you? Where and when did you work in education?”

*I'm the **human teacher**, I'm a teacher, I started teaching in 1985, as a teacher, my first day of teaching was on September 27, 1985, at the time it was in primary education, elementary school, I took the Normal course, at the time [called] Magistério, I studied pedagogy, I studied languages, I have a graduate degree, a specialist in educational management from Unicamp, yes, and I'm a retired teacher, I went through all the stages within a school, I was a literacy teacher, I was a Portuguese language teacher in middle school and high school, I was a pedagogical coordinator, I was a school principal, I was a teaching supervisor, I was municipal secretary of education, and when I was Municipal Secretary of Education, I represented UNDIME, I was president of UNDIME, which is the National Union of Municipal Education Directors, I was a consultant for UNESCO [...] I was a consultant at the Ministry of Education for UNESCO, where I contributed*



*to the development of courses, and I also worked at the Ministry of Education as a project manager in the Secretariat for Basic Education [...].*

**Human Teacher, 2023**

*I am ChatGPT, an artificial intelligence language model developed by OpenAI. I don't have a physical presence or work experience in the traditional sense. My main role is to provide information and help with tasks by answering questions and offering assistance based on the knowledge and programming guidelines I have been trained in.*

*As far as education is concerned, I do not work directly in educational institutions or educational environments. However, my use can be extended to helping students, teachers and researchers find information, clarify doubts and carry out academic research in a variety of topics and disciplines. My ability to process large amounts of information and generate text can be valuable in educational contexts, but always with supervision and complemented by other sources of learning.*

**OpenAI, 2023**

In addition to this contextualization question, the human teacher and ChatGPT answered other questions in a structured interview model (Silverman, 2009). Eight questions were formulated which were answered by both research participants, and the structured interview model was adopted so that it would be possible to contrast and compare the answers of the human teacher and those of the ChatGPT, which would not be possible if another data collection approach was adopted. The questions were:

1. *Who are you? Where and when did you work in education?*
2. *What does being a teacher mean to you?*
3. *How did teacher training courses work in Brazil in the 1980s?*
4. *What is technology to you?*
5. *What links do you see between technology and education?*
6. *Based on your experience as a teacher in the 1980s, please answer: did you use technological resources in the classroom? If so, which ones?*
7. *How did these resources contribute to the teaching and learning process? What were the challenges of using these resources?*
8. *Are you familiar with ChatGPT? What possibilities and challenges do you see when thinking about the use of this tool by teachers and students?*

After the interviews, the answers were transcribed and constructed in text corpus format according to the standards described by Camargo and Justo (2013), so that the data could be interpreted by the statistical software IRaMUTeQ (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*). Developed by Pierre



Ratinaud in 2014 “(...) IRaMUTeQ is free software that works as an R interface<sup>4</sup>, suitable for the management and statistical treatment of interview texts and open questionnaires” (Sousa, 2020, p.4, free translation).

The answers to the eight questions asked to the real teacher and ChatGPT were gathered into a single text file or *corpus*, separated into two variables or *subcorpus*, called “person\_1” and “person\_2”, so that the software’s analysis could be done together with the whole text, or separately, to compare the real teacher’s answers with those of the ChatGPT.

IRaMUTeQ, as explained by De Souza and Bussolotti (2021, p. 5), generates various files when processing the data (or *textual corpus*) entered, such as “Word Cloud, Descending Hierarchical Classification, Factor Analysis, Similarity Analysis, Rapport (...)” but it does not analyze the data, a job that needs to be carried out by the researcher.

The choice to use IRaMUTeQ to process and manage the data was due to the opportunity to analyze the research hypothesis that although generative artificial intelligences are becoming increasingly used tools in the educational field, they are not capable of replacing human memory and experience, even though they are capable of providing a vast amount of information. This is due to the fact that IRaMUTeQ is capable of making lexicographic analyses (Camargo; Justo, 2013), among other statistical data that can help in the choice of excerpts from the interviews to illustrate what is discussed in this work.

#### **4 Experience x Technology: convergences and deviations**

The first analyses presented refer to the sets of answers from the real teacher and ChatGPT, and corroborate the hypothesis that ChatGPT is not capable of replacing human experience and memory. This becomes clear when we look at the software’s analysis of specificities. According to Camargo and Justo (2013), this field of analysis generates statistics for contrast analysis, in which the *textual corpus* is compared in terms of a theme, according to a variable defined by the researcher. Although the software generates a series of graphs with several variables, this text focuses on the tables generated in the analysis of specificities and the word clouds, because it was in these fields that the representations presented the most possibilities for discussion in relation to the research problem of this work.


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<sup>4</sup> Available from: [www.r-project.org](http://www.r-project.org)



Figure 1 shows which word classes appear more or less frequently in the text, relating the answers of the human teacher in the second column (*peessoa\_1*) and ChatGPT in the third column (*peessoa\_2*). The data was processed using the hypergeometric distribution model, contrasting the content of the parts with that of the whole, showing the under-representation or over-representation of each form in the *textual corpus*, with the specificity indicator data that represent the decimal logarithm of a probability, calculated by IRaMUTeQ, being shown in the columns of figure 1. As Sousa (2020) explains, positive indicators correspond to over-representation of the form, and negative indicators to under-representation, with results greater than 2 favoring the hypothesis of a trend in the lexical distribution of the form considered.

**Figure 1:** Distribution of grammatical classes in the interviewees' answers

formes	*Pessoa_1 	*Pessoa_2
pro_rel	17.1928	-17.1928
adv	13.6019	-13.6019
pro_per	12.8114	-12.8114
ver_sup	10.1611	-10.1611
pro_dem	3.2528	-3.2528
adj_num	2.9935	-2.9935
num	1.8498	-1.8498
pro_pos	1.7908	-1.7908
pro_ind	1.7863	-1.7863
ver	1.5961	-1.5961
nom_sup	1.5429	-1.5429
pro_int	1.0707	-1.0707
art_def	0.6076	-0.6076
nr	0.3779	-0.3779
adj_sup	0.3053	-0.3053
adj	-0.2948	0.2948
ono	-0.2968	0.2968
conj	-4.0701	4.0701
pre	-4.1866	4.1866
adj	-8.0426	8.0426
nom	-22.5852	22.5852

Source: IRaMUTeQ, 2023

It can be seen that the grammatical classes or forms that are over-represented in the human teacher's speech are: relative pronouns, adverbs, verbs in supplementary form, demonstrative pronouns and numeral adjectives. The grammatical classes or forms that are over-represented in ChatGPT's answers are respectively: nouns, adjectives, prepositions and conjunctions. Considering that the context and purpose of the communication were the same when collecting the interviews, this data provides some





important information about the style of language, and therefore the content of the speeches.

In the case of the human teacher, there are indications that the frequent use of relative pronouns may indicate a more descriptive and elaborate approach to communication, since this grammatical class is often used to introduce additional and detailed information. Something similar can be observed when considering the use of adverbs, because the use of adverbs can indicate a more qualified and descriptive discourse, adding nuances and details to sentences. The human teacher's communication also appears to be very precise, since the emphasis on the use of demonstrative pronouns and numeral adjectives suggests that the human teacher seeks to specify and quantify information in her speech, seeking to make communication more precise.

But the most interesting fact, which directly corroborates the hypothesis of this text, is the high use of verbs in the supplementary form, which may indicate that the human teacher's speech seeks to detail actions or relationships between subjects and objects of sentences, being a grammatical class often used to express feelings, thoughts, and to relate. A supplementary verb, also known as an "indirect transitive verb," is a category of verb that requires a prepositional complement (usually a preposition) to make the sentence complete and understandable. This preposition indicates the direction, destination, mode, time, place or purpose of the verb's action. Therefore, the human teacher's frequent use of verbs in the supplementary form can be interpreted as an effort to be more precise, descriptive and clear in her communication.

In the case of the ChatGPT artificial intelligence, there was no constant use of verbs, which even in their regular form are more present in the human teacher's speech, which is to be expected, since they express actions. What was observed was the frequent use of nouns, which may indicate a more direct, objective and descriptive approach, focused on concepts. In addition, adjectives are also widely used to qualify nouns and add descriptions to the concepts that ChatGPT presents. Finally, prepositions and conjunctions are also constant in the ChatGPT answers, which could indicate that the structure of the artificial intelligence answers is organized in a more logical way, since these words are used to connect sentences and ideas in a logical and cohesive way.

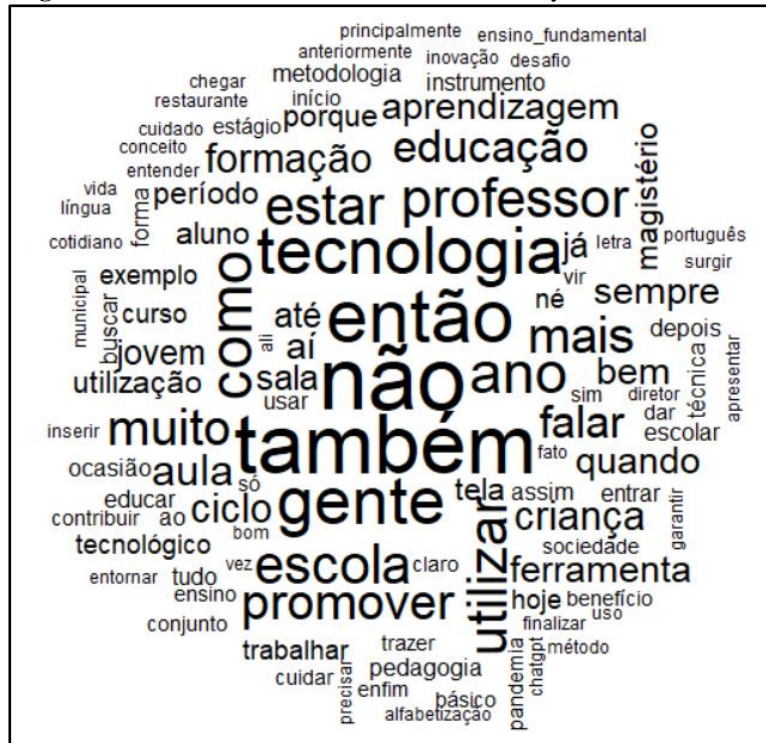
These differences in lexical distribution may reflect the typical characteristics of communication between humans and artificial intelligence systems. While humans tend to use more relative pronouns, adverbs and more elaborate forms of verbs to make their communication richer and more descriptive, ChatGPT tends to focus on nouns, adjectives

and connectors to convey information in an objective and structured way. In relation to the hypothesis that the human teacher’s speech is more focused on memory and experience, the observation of word classes reinforces the idea that she is providing more detailed and contextualized information. However, it is also important to consider that AIs are designed to provide information efficiently and concisely, prioritizing clarity and accessibility.

In addition to the analysis of the lexical distribution of the words used by the human teacher and ChatGPT, another IRaMUTeQ resource that stands out in terms of the objectives proposed for this study is the word cloud, a resource in which words are grouped and organized according to their frequency in graphical form, with the most frequent words being represented in greater size, as explained by Camargo and Justo (2013). Regarding the functionality of this resource in research that uses interview responses as the *corpus* of analysis, Moura, Motokane and Oliveira (2022) argue that the word cloud is a visually interesting resource, capable of presenting an overview of the evocations of the *corpus* analyzed by the software.

In this way, the word clouds relating to the human teacher’s (figure 2) and ChatGPT’s (figure 3) speeches are shown so that it is possible to analyze the closeness and distances between the answers.

**Figure 2:** Word cloud with the words most used by the human teacher



Source: IRaMUTeQ, 2023

**Figure 3:** Word cloud with the words most used by ChatGPT



Source: IRaMUTeQ, 2023

The words most used by the human teacher, and their respective frequencies, are “no” (26); “also” (24); “then” (21); “technology” (19); “people” (19); “like” (17); “year” (16); “use” (15); “be” (15); “teacher” (15); “school” (15); “a lot” (14); “promote” (14); “more” (14) and “talk” (12). In the case of ChatGPT, the most used words and their respective frequencies are: “technology” (49); “student” (28); “teacher” (28); “educational” (23); “how” (21); “resource” (18); “learning” (16); “education” (15); “access” (15); “teaching” (14); “course” (14); “more” (13); “use” (13); “information” (13) and “to” (12).

In the human teacher’s speech, the most used word was “no,” an adverb that shows the centrality of contradictions and absences in the speech. The frequent use of “also” may indicate an inclination to present complementary information or points of view. “Then” is a linking word that is often used to indicate a logical sequence of events or ideas. Its frequency can suggest a tendency to organize thoughts in a sequential way or to explain causes and effects.



In the case of ChatGPT, the term “technology” stands out, and may indicate a literalization of AI, since this is the central theme of the interview analyzed. The frequent use of “student” and “teacher” indicates an emphasis on these two fundamental parts of education, which curiously appear in equal proportions. The AI’s point of view seems to be neutral, while the human teacher’s speech emphasizes the word teacher.

In general, the human teacher shows a tendency towards social aspects, which is made clear by the use of words such as “people,” “promote,” “example,” “training,” and “child,” which appear prominently in the word cloud. Meanwhile, ChatGPT as artificial intelligence shows a focus on words such as “resource,” “information,” “teacher,” and “student,” terms that express a more analytical and objective approach to the topic discussed.

These differences highlight the use of natural language by the human teacher, who expresses ideas, opinions, personal experiences and subjective perspectives in her answers, while ChatGPT uses structured, impersonal language, avoiding subjective expressions and focusing strictly on the topic addressed during the question.

## 5 Contrasting analytics: the lyric of raw data

To illustrate what was discussed in the previous section, some excerpts from the answers given by the human teacher and the artificial intelligence will be presented below, so as to include at least a short excerpt from the answer to each question in short sentences. Just like Rossoni and ChatGPT (2022), but believing that it will be a simple task once it is laid out, the excerpt will not be indicated in the body of the text, only in a footnote, inviting the reader to play the game of imitation.

The imitation game, also known as the Turing test, is a test to measure a machine’s ability to communicate indistinguishably from a human being. The test was proposed by British mathematician Alan Turing in 1950 and consists of three participants: a human judge, a human who acts as a source of communication and a machine. The judge has to determine, through a written conversation, which of the two participants is the machine. If the judge cannot distinguish between human and machine communication, then the machine is considered to have passed the Turing test. This test has been an important milestone in artificial intelligence research and continues to be an important topic in the discussion about the relationship between machines and humans (Rossoni; ChatGPT, 2022, p. 399).

<sup>15</sup> - “Being a teacher is a craft, it’s a job, and more than that it’s a mission, a mission where we always have to try to deliver the best, guarantee what is the right of our children

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<sup>5</sup> 1, 3, 5 and 6 are excerpts from the interview with the human teacher. In 2, 4 and 7, excerpts from the interview with ChatGPT.



and young people, which is the right to learn, do our best, look for innovative methodologies, try to establish relationships of affection to guarantee, in fact, the student's learning.”

2 - “Access to higher education was more limited back then compared to today. The profile of students seeking teacher training was more homogeneous in terms of gender and socio-economic background.”

3 - “We can no longer run away from this. This is a reality that occupies us today. Who would have thought, for example, that the biggest restaurant chain doesn't have a restaurant, iFood, doesn't have a restaurant, the biggest rental car chain, Uber, doesn't even own a car, so we're seeing how much people are looking for innovations based on technology, and it's part of life, we can't refuse that, on the contrary.”

4 - “The relationship between technology and education is profound and impactful, with technology playing a significant role in transforming the educational landscape.”

5 - “At that time, the use of technological resources in the classroom was limited compared to today's standards.”

6 - “Welcome, blessed be the technology, because if the losses were gigantic during this pandemic, imagine without this technology.”

7 - “Excessive use of AI assistants can make students over-reliant on technology, to the detriment of developing research and problem-solving skills.”

## **6 Considerations and open horizons**

For Santos (2019), based on Andrew Feenberg and Álvaro Vieira Pinto, there is no neutrality in technology or its means, which are always developed based on rationality, interests and social and cultural conditioning factors. The human being then – and therefore also the student, the teacher, and all the other people involved in the teaching and learning processes – “is constituted in a technological context that is constituted by interests that do not always align with their needs” (Santos, 2019, p. 26).

According to this line of thinking, another issue that should be considered is that tools such as ChatGPT, based on an amount of data impossible for humans to process, carry within themselves and in everything they produce a rationality and a worldview, perhaps even more evident than in other technologies. The text by Irigaray and Stocker (2023), for example, contains references indicating that AI produces offensive or



prejudiced texts. If science and education are thought of through tools like this, without the responsible mediation of the teacher, we will only be reinforcing hegemonic thinking.

This can be called technology bias: apparently neutral, functional rationality is engaged in the defense of a hegemony. The more society employs technology, the more significant this engagement becomes (Feenberg, 2010b, p. 82, free translation).

It is also necessary to reflect on what is meant by authorship of a work, on what drives researchers and teachers to write and share ideas, projects and scientific and philosophical reflections. It is true that inappropriate and systemic motivations, such as the publish or perish production logic, can lead less ethical researchers to publish texts written by tools such as ChatGPT, with the sole aim of scoring points in institutional evaluations or standing out in selection processes. These authors, however, can be seen as those who were already using questionable quality and authorship practices before the existence of tools like this, incurring in situations like self-plagiarism, direct plagiarism or other ethically questionable means of publication, such as through predatory publishers.

Lund and Wang (2023), for example, discuss in their article the use of this tool in the writing of articles and academic texts in general, debating ethical and integrity issues. In this sense, it is essential to promote an academic culture that values integrity, originality and intellectual honesty. It is important that researchers and teachers are encouraged to share genuine ideas, projects and scientific and philosophical reflections based on their own contributions and legitimate authorship.

Buzato (2023) explains that we normally grant a hermeneutic relationship (subject-object) to computer programs, but that generative artificial intelligences such as ChatGPT tend to move this relationship into the territory of alterity (I-other). A clear example of this is the way in which this article presented and used ChatGPT and IRaMUTeQ in the production and analysis of data. Buzato (2023) justifies the importance of this statement, because according to the author, the construction of human identity-alterity is mediated by educational practices.

A tool like ChatGPT is capable of providing information on a wide variety of subjects in a matter of seconds, in greater or lesser depth, depending on the level of refinement of the user's commands. Valente (2005) differentiates between information and knowledge, considering information as any content that the subject exchanges with others or with resources in the environment, such as the internet, and knowledge as the product of processing, interpreting and understanding information, occurring in a



particular and individual way in each person, and cannot be transmitted, but rather constructed. He also discusses the teacher's role in the construction of knowledge.

The inevitable use of tools like this must become not only a possibility for the teacher to mediate this process, but also a responsibility, so that we don't find ourselves in simplistic situations where students only use ChatGPT to answer questions and develop assignments, for example. Valente (2005) warns against an education based on the mere transmission of information, which occupies students with mechanical tasks that are not necessarily capable of awakening understanding. The use of technologies capable of answering questions or preparing slide shows makes this warning even more plausible and dangerous.

This corroborates the position of Feenberg (2010a), who advocates the adoption of a critical theory of technology that recognizes the consequences of technological development and control, but also sees in it a promise of freedom. For the author, technology itself is not the problem, but rather the human failure to create institutions that subject it to democratic human control since its development. He recognizes that the public sphere is gradually opening up to discuss technical issues that were not debated before. The hope, therefore, is that citizenship will soon involve the exercise of human control over the technical structure.

## 7 Conclusions

Regarding the results of this study, we can draw some conclusions that are relevant to the debate: ChatGPT does not replace human experience and memory, a fact corroborated by the human teacher's use of rich, descriptive language, contrasted by ChatGPT's objective, structured language, which showed a clear difference in the lexical distribution of words, despite being categorized as an AI that makes use of natural language; in addition, the thematic focus and use of words also give clues that the human teacher expresses more subjectivity, as in the use of "no," "also," "people," and "training," highlighting social and human themes tangential to the subject discussed, while ChatGPT focuses on more objective terms such as "technology," "student," "teacher," and "resource"; suggesting an objective focus on the topic discussed. Considering the contributions of David Hume, Francis Bacon, John Locke and Thomas Hobbes, it is necessary nowadays to postulate that some knowledge only comes from experience.



It is true that the contributions of the digital, information and communication technologies we know today in our social environment are indisputable. However, we cannot and should not accept a perspective of neutrality in the relationship between humans and technology. A more attentive and careful look at this relationship is a necessity of our times.

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