Teachers' perceptions of the use of artificial intelligence in the classroom

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Abstract
Understanding Artificial Intelligence (AI) is the best way to prepare ourselves for the future. Despite its growing interest, AI is still poorly understood in different domains. We need to understand AI so that we can regulate the risks of the technology and take better advantage of its benefits. It's therefore necessary to first prepare teachers so that they can also prepare students for the AI era. This paper analyzes teachers' perceptions regarding the implementation of AI-based learning tools, such as generative natural language, after attending a training course. We describe the training course design and development. We followed a case study approach with a mixed method data analysis. Data was collected from participants in the training course through online questionnaires, and a semi-structured interview. From the results collected, we highlight the need that teachers feel to have more in-depth training on the use of AI in their practices.

Keywords: Artificial intelligence, education, teachers, teacher-training.

Introduction

We live in a world defined by digital ubiquity, where mobile broadband connections surpass fixed ones. Never before has the world been as connected as it is today, made possible by the rapid advancement of technology and human creativity. Creativity is a crucial skill in the 21st century and should be developed both inside and outside of school. Several studies highlight its importance as a means to solve present and future challenges and better prepare students to face them (Beghetto, 2016; Ilgaz & Eskici, 2022; Mangion & Riebel, 2023), such as the problems that Artificial Intelligence (AI) presents. AI has been changing the structure of several sectors and increasing the availability of cutting-edge tools used in people's daily lives and also in education.

Artificial Intelligence and Computer Science are relatively new fields. AI is a discipline that is truly interdisciplinary, combining elements of many other domains and can be beneficial to humankind (Lucci et al., 2022). With the evolution of AI and Automation, many jobs will become obsolete, and others will be replaced by intelligent machines. A significant portion of routine work will be automated; however, jobs that rely not on human social skills but on manual dexterity, creativity, or adaptive abilities continue to pose obstacles to AI's entry (Lee, 2018). Despite this, AI is seen as a transformative technology. It can foster the developmental priorities of each country, including improved educational opportunities, economic prosperity, and quality of life. Given that AI has the potential to revolutionize the way we live, work, and learn it is viewed as a technology of great significance. However, like any other substantial technology, along with opportunities, it also presents risks.

In this regard, Russell (2019) suggests that concerns about the risks of AI stem from ignorance, but he emphasizes that long-term AI safety is an important issue. As Lee and Qiufan (2021) state, AI will define the 21st century, revolutionizing medicine and education, generating wealth, and introducing new forms of work, communication, and entertainment. Its weight and influence are growing every day, and its impacts can be felt in almost every sphere of society: in smartphones, social networks, bringing virtual assistants to life, in the use of translators or reading recommendations, movies, videos, and music, shaping everyday life (Arbix, 2019).

According to Lee (2018), the complete revolution of AI will occur in four waves: the Internet wave, the business wave, the perception wave, and the autonomous wave, each utilizing AI in a different way. The first two waves are already part of our daily lives, reshaping the digital and financial world almost unnoticed. The other two waves

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promise to revolutionize how we live and interact with our world, blurring the boundaries between the digital and the physical. The key AI technologies already exist; it's just a matter of solving technological and physical problems. In fact, the possibility of achieving superhuman artificial intelligence is closer than ever, thanks to developments in machine learning, deep learning and neural networks (Russell, 2019).

Experts warn of the need for reflection on the consequences of AI development and how it will shape the future (Oliveira, 2019; Lee, 2018; Russell, 2019). It is important to remember that algorithms are not intelligent or ethical, but humans are. Hence, the need for transparency in building ethical AI and the urgency of collaboration across different fields including technology, ethics, privacy, security, and legislation, to establish a legal-regulatory framework that protects society without inhibiting scientific creativity (Arbix, 2019).

In the field of education, constant progress has been made to incorporate AI into the teaching and learning process. However, the successful implementation of new educational technologies is closely related to teachers' practices in the classroom. According to Lee (2018), many classrooms still operate under a "factory model" where students learn in the same way and at the same pace. For this author, this model made sense in the past due to limited teaching resources, but not anymore. AI can help eliminate these limitations and adapt the learning process to each student based on their perceptual, recognition, and recommendation abilities.

Artificial intelligence in education

Intelligence is one of the most fascinating concepts in science, and since the early days of humanity, philosophers and scientists have sought to understand what it means to be intelligent and how intelligence manifests in living beings. With the evolution of computational systems, these studies began to question whether machines can also exhibit behaviours that can be considered intelligent, as Oliveira (2018) states. According to this author, the idea of artificially intelligent beings is almost as old as the emergence of Homo Sapiens. There are several dates and authors that are part of the history of Artificial Intelligence (AI) in general and in education, in particular. Already in the late 1950s, researchers like Turing, McMarthy, Minsky, and Newell believed that computers could "think" just like humans. However, the origins of AI can be traced back to classical antiquity with the development of logic by Aristotle and other thinkers and scientists in the centuries that followed. These were important advances for exact mathematical reasoning that still prevail today. Later, the work of mathematician Blaise Pascal and the mechanical calculator, and in the 19th century, Charles Babbage, who designed the analytical engine, and later Ada Lovelace described it as a "thinking or reasoning machine" (Russell, 2019). As for the definition of the concept, there are as many definitions as there are meanings of the term intelligence. In any case, AI concerns computational procedures that, if performed by a human, would be considered intelligent (Lima et al., 2014). As Lucci et al. (2023) point out, in the Preface, "it is people who make up AI. People have ideas and these ideas become methods".

AI has benefited from the advancements in machine learning since the 1980s and deep learning, which has surprised experts in this research area in the second decade of the 21st century. Machine learning is a computer algorithm that develops and improves algorithms and techniques for computers to learn. Algorithms are the central concept in computer science (a precisely specified method for computing something) and are part of our daily lives (Russell, 2019). It is important to emphasize that new AI systems can learn from their own experience and improve themselves through intensive use of data, leading to a change in how we live and work, as Cozmon et al. (2019) mention. According to these authors, AI is an important pillar of digital transformation.

AI has been increasingly used in education in recent years and applied in various areas, from personalized teaching to student performance evaluation. One of the earliest applications of AI in education was the development of intelligent tutoring systems, which provide personalized feedback to students based on their performance. These systems can identify areas where students struggle and provide specific guidance to help them overcome these obstacles (Lee, 2018; Russell, 2019). Another application of AI in education is data analysis. Schools and universities can use AI to analyze large datasets, such as student grades and attendance, to identify trends and patterns that can help improve student performance.

One of the limitations of education is being based on a one-size-fits-all model, but we know that each student is different. However, we also understand that having a teacher for each student is very costly. So perhaps now is the great opportunity to integrate AI into education and invest in individualized education (Lee & Qiufan, 2021). For this to happen, teachers need to learn about AI and understand its potential so that they can later teach their students AI literacy skills, such as fact-checking answers using real examples or case studies and teaching the principles of fact-checking: expertise, authority, and reliability. They can also use services like Google Fact Check Explorer for identifying texts and Iluminarty for images. Checking AI outputs can be learned in school through curriculum activities, tutorials, discussions, debates, quizzes, reports, or other practices to expand skills such as fact-checking, validating, and cross-referencing facts or data. It is urgent to train students to become familiar with AI detectors, such as ZeroGPT, Copyleaks, or other available tools, and support them in developing awareness that AI-generated text may not be correct and can lead to misinformation, because machines also hallucinate as they are trained on probabilities. Literacy of prompts is another domain to be addressed in school. As the quality of AI results depends on the quality of the input text (prompts), it is relevant to develop students' abilities to evaluate both human inputs and AI outputs.

According to Lee (2018), the experience of AI-enabled education can occur in four scenarios: classroom teaching and learning, homework, exercises or exams, in grading and personalized lessons. These four environments build the foundations of AI-based education. AI can also be used to create personalized educational content. Based on each student's preferences and learning abilities, AI can generate customized teaching materials that are more effective for each individual. Furthermore, AI can be used to assess student performance. AI-based assessment systems can analyze students' work and provide immediate feedback on their performance, allowing teachers to quickly identify areas where students need more help (Kim & Kim, 2022). That's why initial and ongoing teachers training in AI are crucial, so they can help students develop their AI skills and prepare them with the necessary skills for a job market based on these technologies.

Natural language models

One of the most well-known AI models is ChatGPT (a generative system), which has the ability to generate text based on simple user instructions (prompts). Its popularity is due in part to the conversational agent's realism, its wide functionality, and a user-friendly interface (Atlas, 2023). Since its public release in November 2022, it quickly gained millions of users, becoming one of the fastest-growing tools in human history. This popularity is partly due to its ease of use and its ability to provide answers on an impressive range of topics, making it feel like a conversation with another person. However, the content is not always entirely accurate and may contain errors, requiring constant verification from reliable sources (UNESCO, 2023). It is therefore important to acknowledge this fact and avoid spreading falsehoods. ChatGPT has demonstrated success in passing some important tests. The paid version now offers the ability to add various plugins specifically designed for language models, exponentially increasing its capabilities.

Modern general-purpose artificial intelligence technologies, also known as GPAI (General-Purpose Artificial Intelligence), include ChatGPT from OpenAI, as well as other software that generates images from text, such as DALL-E and Stable Diffusion, to name just two well-known examples. GPAI systems can be used in a wide variety of situations, performing a range of tasks and having more than one application. For instance, CNET (an online news agency) reported that it has been publishing stories written by an AI and edited by humans for months. However, some were published with errors, prompting the company to take measures to address this issue (Guglielmo, 2023). Concerns about ChatGPT have contributed to the advertising and promotion of AI, and many companies wasted no time in showcasing their AI-based services and functionalities. The accessibility of AI to the public, regardless of the consequences for society, as is the case with ChatGPT, has put AI at the forefront, reinforcing the idea that the use of AI applications in all areas of society is inevitable (Lee, 2018).

Microsoft has incorporated ChatGPT into its Bing search engine, allowing users to obtain summarized answers and hyperlinks to webpages where they can find more information to develop the topic and cross-reference sources.

Are search engines transforming into intelligent conversationalists? Natural language model-based tools like ChatGPT give the impression that search engines are becoming more conversational (Stokel-Walker, 2023).

As AI systems become more developed and powerful, surpassing human performance in various domains, they are causing transformations in several areas of society (Lee, 2018; Oliveira, 2018; Russell, 2019). However, they can pose high risks when in the hands of malicious individuals and cannot be ignored, as giving up AI research is unlikely due to the tremendous benefits at stake, as mentioned by Russell (2019). In the realm of forgery and misinformation, the Deepfake technology stands out, which is an image processing technique using adversarial neural networks (Shen et al., 2018). As Atlas (2023) points out, ChatGPT can have a profound impact on how we educate and learn. It is not just a powerful tool for automating repetitive tasks and simplifying communication; it has the potential to change the way we think about education and learning. Therefore, it is important to regulate the risks in order to continue promoting our freedoms and protecting our rights. It is not about regulating AI itself, but rather regulating the uses of AI. As we transition from the industrial era to the AI era, we will need, more than ever, to shift to a culture that values human love, service, and compassion (Lee, 2018). In this text we present a research whose aim is to analyze teachers' perceptions regarding the implementation of AI-based learning tools, such as generative natural language, image, audio and video models, after attending a training course.

Description of the training course

The training course entitled "Methodologies and Resources to Develop Essential Portuguese Learning in the Digital Era" was designed for teachers that teach Portuguese Language, and its content was developed over 25 hours in a blended-learning format (7 hours face-to-face and 18 hours synchronous sessions online) and an additional 25 asynchronous hours of independent work, with a total of 50 hours of training. Out of these hours, 12 hours (six synchronous hours, and six asynchronous hours of independent work) were dedicated to the topic of Artificial Intelligence in Education, which will be described.

The first synchronous session focused on contextualizing the concept and exploring some AI-based tools. In this session, a repository of AI tools[1] was presented to gain a better understanding of the current AI landscape relevant to education. We chose to analyze two tools from the generative natural language processing category: ChatGPT and ChatPDF. ChatPDF is an online platform that uses artificial intelligence to summarize the content of documents in PDF format. After processing the file sent by the user, the chatbot transforms the main points of the text into questions and answers with pointers to the relevant pages. It can read and answer questions in any language, and also allows loading a PDF in one language and ask questions in another. During the independent work hours, teachers were expected to explore the game "Odd One Out" in the classroom with their student, which involves identifying images created by AI imposters compared to those created by humans, and using it as a way to discuss AI with students. They were also required to choose at least two AI tools from the repository, experiment with them, and highlight their potential for both teachers and students.

In the second synchronous session, the risks and benefits of AI in the classroom were discussed. Craiyon and Stable Diffusion AI tools were explored to transform text into images. Craiyon AI is an image-generating tool that uses generative AI technology to create unique and diverse images. With its advanced algorithms it offers a range of features that can be beneficial for various purposes. It is a versatile tool that can generate high-resolution images in different styles. Stable Diffusion is an open source AI art generator released in 2022, by Stability AI, written in Python. It is a deep learning model for text-to-image transformation. It is mainly used to generate detailed images through textual descriptions that condition the result. The tool is fed by a bank of systematically described images used as a reference for producing new images. The tool is capable of producing images in a variety of styles, from surreal landscapes to famous works of art.

In the same session the Ora platform was explored, which allows each user to create their personal chatbots. The Ora AI is developed by the company OpenAI. It uses artificial intelligence and machine learning technologies to provide assistance and answer questions on various topics. The chatbot is designed to engage in natural

[1] https://topapps.ai/

conversations with users, attempting to understand their requests and provide relevant responses. During the training session the participants created and tested the possibilities of this tool and had fun exploring the chatbots created.

Finally, the various functionalities presented in the Copyloto platform were explored. Copyloto is a content creation tool, based on a specific prompt, that helps speed up the creative process using artificial intelligence. Users can create adverts, social media posts, blog articles and more. The idea is simple: speed up the creative process, get inspiration and create high quality content.

For independent work, participants were tasked with designing a learning scenario based on AI tools to work on any content of their syllabus. Before implementing AI platforms or apps with students, it is essential for teachers to first learn how to use them in order to fully understand how they can be integrated into their teaching strategies.

Method

A case study (Yin, 1984) was conducted focusing on teachers' perceptions about the impact of AI on their professional activities. A mixed method was used (quantitative and qualitative) for data analysis. The participants were ten teachers of Portuguese Language and Literature, but one of the teachers dropped out. This research was conducted during the academic year 2022-2023, with nine female teachers (100%) who participated in a blended-learning training course. Their ages ranged from 51-60 years (80%) and 41-50 years (20%). In terms of teaching experience, the majority (60%) had 41 or more years of experience, 20% had between 31-40 years, and 20% had between 21-30 years of teaching experience.

For data collection tools, questionnaires and interviews were used. The data were collected through two online questionnaires, one before the training (Q1) and another one after (Q2), using open questions and a Likert scale for closed questions, and a semi-structured interview. According to Vilelas (2017), the advantage of conducting interviews is that participants provide data based on their behaviours, opinions, desires, attitudes, and expectations, which makes it difficult to observe them from the outside. Hill and Hill (2016) note that well-prepared interviews have some advantages over questionnaires. We chose a semi-structured interview, which provides some freedom for both the interviewer and interviewee. The participating teachers were informed about the purpose of the questionnaires and the interview, and informed consent was obtained. We developed an interview script according to the intended objectives, which was validated by experts. The interviews were conducted and recorded remotely via Google Meet. For this article, only the responses related to the 12 hours of training on Artificial Intelligence were considered. The participants are identified only by numbers.

An interpretive focus was applied to the content analysis of the data collected from the open questions and the interviews. As Bogdan and Biklen (2003) state, in qualitative research, the researcher should constantly interact with the participants to obtain information about their experience and allow for the analysis of the course's effects.

Findings

Prior to the training course, participant completed a questionnaire (Q1). The majority (90%) reported using digital technologies in their practices. However, when it comes to using AI tools in their classes, they have no experience (100%), including with chatbots. We found that 90% of the respondents expressed a desire for AI training for several reasons: *to acquire solid knowledge in the field* (01); *to learn and develop new strategies and assessment tools enhance their teaching practice without diminishing the quality of learning* (03); *to comprehend the functionalities of AI and know how to effectively use them* (05); and *to dispel any fears and concerns* (06). One participant mentioned *feeling intimidated/scared by AI due to her lack of knowledge about it* (08).

To understand the participants' perceptions of AI before the training, we presented some general statements using a Likert scale originally consisting of five options, which has been condensed into three response options (Table 1). The chosen option for the majority of the statements was Neutral, indicating that the participants did not have a formed opinion or sufficient knowledge about the topics related to AI, as they mentioned in the open questions.

These perceptions are in line with the results obtained by Chounta et al. (2022). In our study, the majority (89%) of the respondents chose the Neutral option for the statement: "AI can help assess students' performance more efficiently and accurately" [I.3] and 67% chose also this option for the following statements:

"AI can help…

(I.1) personalize students' learning";

(I.2) identify areas where students need help";

(I.5) automate administrative tasks, allowing teachers to focus more on teaching";

(I.7) replacing teachers with machines".

The majority agree (67%) that "AI can help create personalized educational content for each student" [I.4] and (56%) "AI can contribute to the digital exclusion of some students who do not have access to the necessary technology" [I.6]. Regarding whether "AI can help to the loss of important social and emotional skills for students" [I.8], 45% are unsure, 22% agree, and 33% disagree, which highlights the persisting doubts about AI among teachers and society in general.

Regarding the ethical and equity issues that AI can bring regarding the use of tools by all students (I.9], 56% of the participants chose the Neutral option. Issues related to the risks of AI are particularly sensitive, and their discussion and reflection should be at the forefront. Finally, all participants (100%) have no doubts about the need for adequate training on how to effectively use AI tools in education [I.10].

Table 1. Overall perception of AI before the training course (n=9)

Itens	Agree		Neutral		Disagree	
	f	%	f	%	f	%
1. AI can help personalize student learning.	3	33	6	67	0	0
2. AI can help identify areas where students need more help.	3	33	6	67	0	0
3. AI can help assess student performance more efficiently and accurately.	1	11	8	89	0	0
4. AI can help create personalized educational content for each student.	6	67	3	33	0	0
5. AI can help automate administrative tasks, allowing teachers to focus more on teaching.	3	33	6	67	0	0
6. AI can help digital exclusion of some students who do not have access to necessary technology.	5	56	4	44	0	0
7. AI can help replacing teachers with machines.	0	0	6	67	3	33
8. AI can help loss of important social and emotional skills for students.	2	22	4	45	3	33
9. It is important to ensure that the AI tools used in education are ethical and fair for all learners.	1	11	5	56	3	33
10. It is important to ensure that teachers receive adequate training on how to effectively use AI tools in education.	9	100	0	0	0	0

The training course contributed to gaining a deeper understanding of AI integration in education, as demonstrated by the data collected in the post-training survey and the interviews, which we present below. There were several AI tools explored during this training and used by the teachers with their students, as they reported in the questionnaire: ChatGPT (100%), Ora.ai and Copyloto (66.7%), ChatPDF (44.4%), Stable Diffusion and Craiyon (33.3%), Talk-TO-ChatGPT, and other chatbots (11.1%).

All trainees used the ChatGPT in a personal and professional context. The tasks they performed most frequently in the ChatGPT were: information search (75%), creation of activities and search for ideas to address a theme (62.5%), creating rubrics (37.5%), setting objectives (25%), preparing assessment tests and correction of assignments (12.5%). A teacher asked ChatGPT to comment on the text written by a student about a play she had watched, which was related to the class's current work. The teacher received the following response, which fascinated her:

"I'm glad to hear that you enjoyed the play "Aquilo que os olhos vêm ou Adamastor" [What the eye sees or Adamastor] by Manuel Pina. It seems like it was a poetic and thought-provoking experience, with profound reflections on the history and cultural identity of Portugal and its people. It's interesting that the main character is a young Portuguese sailor who returns home and shares his experiences. The described monster, Adamastor,

seems to have been portrayed in a striking and frightening manner. It's great to know that the actors performed their roles wonderfully, conveying emotion and sensuality. Even when there were words you didn't understand, you could comprehend them through the actors' facial expressions. Additionally, the use of background sounds like wind and temperature changes contributed to the immersion in the play. You mentioned that Portugal was a pioneer in exploration, discovering new lands, establishing trade routes, and encountering new cultures. Indeed, Portugal played a crucial role in the Age of Discoveries during the 15th and 16th centuries, expanding the known boundaries of that time" (OpenAI, 2023).

Regarding ChatGPT, 66.7% of teachers have discussed this natural language model with their students. One of them mentioned that it was just an approach to verify if the students were familiar with it or had already used it. Another teacher stated that she addressed it in a superficial manner, but has found that many students are already using it. Another one commented that the students found it interesting and very useful. Finally, another teacher reported that the students understood both the advantages and disadvantages of its use.

Concerning the advantages of using ChatGPT (Table 2) for professional activities, the majority of participants (88.9%) considered that the two most important advantages are the fast responses it gives and the search facility that allows. Other mentioned advantages were providing summarized information and assisting in the initial approach to a topic (55.6%), and the option of originality in the response was chosen by 22.2%. None of the respondents chose the option "I can't find any significant advantages".

Table 2. Advantages of using ChatGPT (n=09)

Itens	f	%
1. I can't find any significant advantages	0	00,0
2. Speed of response	8	88,9
3. Easy search.	8	88,9
4. Originality in the text.	2	22,2
5. Summarized information.	5	55,6
6. Help with the initial approach to a topic.	5	55,6

Relating to the disadvantages of using ChatGPT (Table 3) in teaching activities, the most chosen statements were the absence of bibliographical sources and incorrect information (66.7%), followed by the excessive dependency (22.2%), and finally, the option of generalized information (11.1%). None of the respondents chose the options "I can't find any major advantages" or "Biased responses". During the interview, one teacher mentioned that *ChatGPT can facilitate the task of correcting assignments, especially in relation to formative assessment, creativity, and quick processes* (07). According to Atlas (2023), by making ChatGPT more accessible and understandable students, educators, and professionals can use this powerful tool to improve efficiency, effectiveness, and social impact.

Table 3. Disadvantages of using ChatGPT (n=09)

Itens		f	%
1.	There are no disadvantages.	0	00,0
2.	No bibliographical sources.	6	66,7
3.	Incorrect information.	6	66,7
4.	Generalized information.	1	11,1
5.	Excessive dependence.	2	22,2
6.	Biased responses.	0	00,0

From the collected data, we understand that for all participants, this was their first time participating in training on AI. To gather the teachers' opinions, we presented several general statements about AI and asked them to indicate which statements they considered true (Table 4). The two most chosen statements were 7 and 1, which state that "AI can have a positive impact on society" (88.9%) and "AI can perform tasks replicating human intelligence" (77.8%). The statement "AI doesn't really have a body" and "can adapt to the environment around it" was chosen by 44.4% of teachers, indicating an understanding of AI acquired during the training. The statement considered untrue was "AI will end humanity," which may indicate that the teachers' opinions do not align with the more critical voices and catastrophic ideas about AI. As Meadows (2010) states, robots themselves are not the problem; it is humans who are, and it is precisely in the uses of AI that regulation must exist.

Table 4. Perceptions of AI after the training course (n=09)

Itens	f	%
1. AI can perform tasks replicating human intelligence.	7	77,8
2. AI can learn for itself.	2	25,0
3. AI is capable of outperforming the human mind.	1	12,5
4. AI can adapt to the environment around it.	4	44,4
5. The IA does not exactly have a body.	4	44,4
6. AI will end humanity.	0	00,0
7. AI can have a positive impact on society.	8	88,9

With regard to the positive aspects of using AI in the teaching work, all trainees considered that AI can assist in saving time when creating lesson plans (Table 5). With regard to the possibility of AI helping to save time when reviewing students' work and being more efficient with lesson strategies, the vast majority (88.9%) agreed. The statement least considered (44.4%) concerns whether AI can help "to be more efficient in professional work". We believe that this situation can be explained by the fact that teachers do not include yet AI in their educational routines and therefore feel that they need more training time, as mentioned in the interviews.

Table 5. Positive aspects about the use of AI (n=09)

Itens	f	%
1. AI can help me to save time when creating lesson plans.	9	100,0
2. AI can help me to save time in reviewing students' work.	8	88,9
3. AI can help me to be more efficient in my professional work.	4	44,4
4. AI can help me to be more efficient with classroom strategies.	8	88,9

Regarding the negative aspects of using AI in teaching practice (Table 6), the most chosen statement (66.7%) was that "AI can replace the teacher in all tasks", followed by the statement (55.6%) that the teacher's work requires human engagement, which AI cannot provide. The two statements about the time and effort required to learn how to use AI and not trusting on "AI to perform tasks without errors" were chosen by 44.4% of the participants. These teachers do not fear that AI will eliminate teaching jobs, as no one chose that statement. The participants believe that the teacher cannot be replaced by a machine due to the indispensable social and emotional components in education. On the other hand, when asked about integrating AI in the classroom, the responses collected during the interview were very positive, such as: AI can be interesting and challenging (01 and 03); it will be excellent if the teacher has knowledge (02); it is both a challenge and a concern (04); it should be used with rules for students and guidance from the teacher (05 and 08); we cannot avoid it but assist students in its proper use (06); expectations are high (07), and AI can help with student motivation and lesson preparation time (09). This shows that when using AI tools with their students, the teachers no longer fear them and recognize their educational potential.

Table 6. Negative aspects about the use of AI (n=09)

Itens	f	%
1. It will take a lot of time and effort to know how to use AI.	4	44,4
2. I do not trust AI to perform tasks without errors.	4	44,4
3. I fear it could put teachers out of a job.	0	00,0
4. My job requires human involvement and AI does not do that.	5	55,6
5. I don't think AI can replace the teacher in all tasks.	6	66,7

The successful implementation of AI in educational settings depends on teachers' attitudes and the way they manage the classroom. Therefore, a positive experience with technologies in the classroom is fundamental to further integrate them and improve the quality of education. Zhai et al. (2020) conducted a review of 47 studies that applied AI (machine learning) algorithms and found that it is an effective and valid alternative for conducting assessments, for example, in science teaching. So, it is crucial to help teachers know how to use and how to integrate AI-based technologies into the curriculum. As Giannini (2023) says, it is necessary to help people (teachers/parents/students) develop a clearer understanding of when, by whom and for what reasons AI technology should or should not be used in education.

Conclusions and Recommendations

Artificial Intelligence is a growing field in the 21st century (Lucci et al., 2022) and has the potential to transform education, making it more personalized, efficient, and effective. But to address AI needs, experiences in AI should occur as early as possible in school. Classroom learning is just one part of the larger scope of AI in education, as algorithms continue to work to provide each student with tasks tailored to their profile. According to Lee (2018), education is the best long-term solution to combat unemployment issues related to the integration of AI in various areas of society. For this reason, it is crucial for all teachers to have access to relevant AI training to contribute to educational improvements (Zhai et al., 2020) and to keep up with and adequately respond to the new demands of human inventions. In a study carried out by Chounta et al. (2022), the results show that teachers have limited knowledge about AI and how it can support them in teaching practice.

Based on the presented data, we could observe that teachers are aware of the dangers presented by AI but are determined to advance in their professional development, embracing new opportunities for change in their teaching practices by integrating AI tools (Giannini, 2023). Taking into account the conducted training and the collected data, we think that teachers showed great enthusiasm and motivation to integrate AI-based tools in their classes. They all designed a learning scenario based on AI tools to work with their curriculum contents. This demonstrates that they have already understood the goal of the AI tools and applied them in their work context. The participants' positive perceptions of the potential of AI in education leave no doubt about their eagerness for discovering new opportunities to improve their lesson plans and create new teaching strategies based on AI, as in a study realized by Chounta et al. (2022). We also highlight the need to invest in the training of teachers and other educational agents to wisely integrate AI into their practices and help develop their students' skills, particularly in what is known as "Prompts literacy" (instructions or input commands), and understand the risks.

The collected data is part of a broader research study. Due to the small number of participants, the data presented here cannot be generalized. Comparing the results of the two questionnaires, there is an improvement in theoretical and practical knowledge about the use of AI as teaching and learning tools based on the training provided. In Kurz et al. (2022) study, the results showed changes in teachers' thinking in relation to AI, after the weeks of training. In our study, we found that the participants believe schools should keep up with technological and social developments, invest in teacher training in the field of AI, and provide conditions for AI to eventually take on more routine administrative tasks in the future, freeing up teachers for the pedagogical process.

Contrary to our initial perception and expectations regarding teacher' uptake of training in this area, as many teachers still view technology negatively and prefer not to use it due to discomfort (Kim & Kim, 2022), we realized that these teachers are open to new discoveries in the field of digital technologies, particularly concerning AI, and invest time and energy to experiment with them alongside their students, who now have a personal assistant at home and school through their mobile devices. While AI is still in its infancy, it is still relevant to continue developing in-depth knowledge as much as possible about its risks and possibilities through ongoing teacher training. According to the results of Chounta et al. (2022), teachers perceived AI as a tool to support them in accessing, adapting and using multilingual content and as an opportunity for education. We believe this training has helped increase participants' motivation and awareness of AI technologies accessible to both teachers and students, which will revolutionize the way we teach, learn, and evaluate in schools in the coming decades. It is important to continue conducting training programs and studying this topic. More research should be done with teachers and students about IA in education, its value and challenges.

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Teachers' Perceptions of the Use of Artificial Intelligence in the Classroom
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