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The Impact of Artificial Intelligence and Generative AI in Education: A Review of the Post-ChatGPT Era

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Abstract

The rapid development of Artificial Intelligence (AI), particularly after the introduction of ChatGPT, has revolutionized many fields, including education, in a period in which, also due to the health emergency, distance learning has had a very fast development. Furthermore, the impact of the use of AI-based tools is increasingly revolutionizing the approach to learning, both in students and teachers, at all levels, from school to higher education. Here we propose a review that analyses the impact of Generative AI on the world of education, focused on the period from late 2022, after the introduction of ChatGPT, to 2024. A peculiar characteristic of this study is the use of AI-based tools to create a systematic classification of the retrieved papers which are clustered into macro semantic categories, with the aim of achieving a structured synthesis of the retrieved literature. The analysis of the literature has highlighted several directions and open challenges, together with some issues, thus providing important indications for future developments.

Keywords: artificial intelligence, generative AI, ChatGPT, AI education, teaching

INTRODUCTION

In recent years, many sectors have been strongly influenced by the introduction of artificial intelligence. One of the most impacted fields is education (Zouhaier, S., 2023). There are many educational contexts that can benefit from the use of AI. From systems that allow real-time tutoring to chatbots that can be used to learn and remember, to the automation of management processes related to the education field, in particular to teaching staff, AI has transformed the approach of students and teachers to learning. A strong impact on the evolution of AI has certainly been determined by the rapid development of Natural Language Processing (NLP) techniques (Yamamoto, 2023). This has made it possible to understand and generate natural language in an increasingly sophisticated way. Furthermore, the evolution of Machine Learning (ML) and Deep Learning (DL) has played a key role in this evolutionary process, allowing the creation of increasingly advanced models, such as Transformers and Deep Neural Networks, which are at the basis of the growth of modern Generative AI (GAI) systems (Bengesi et al., 2024). In this context, GAI represents one of the most significant innovations in the AI field, incorporating a broad spectrum of advanced technologies and algorithms, including ML and DL (LeCun et al., 2015). GAI is based on models capable of creating novel and original content, such as text, images, and code, derived from training data inputs, which have revolutionized the NLP domain and other applications (Vaswani et al., 2017). Although generative AI gained widespread recognition with the release of ChatGPT in November 2022, its foundations are rooted in earlier technologies, such as autoregressive models and convolutional neural networks (Radford et al., 2018). The launch of ChatGPT, built on the GPT-3.5 model, marked a milestone in the dissemination of these technologies, demonstrating their ability to generate coherent and contextually relevant text. This development catalyzed the rapid adoption of generative AI, driving a wide range of practical applications and stimulating research in this rapidly expanding field (Brown et al., 2020). The impact of ChatGPT has been extraordinary: it reached 100 million users within its first two months and recorded 2.9 billion visits in June 2024 alone. Today, this technology is capable of generating original content, including text, music, video, images, and code, often indistinguishable from that created by humans, although it occasionally produces errors known as *hallucinations* (Bender et al., 2021). GAI is not only rapidly transforming various industries but also has the potential to profoundly revolutionize numerous aspects of daily and professional life—from work to education, scientific research to software development, and even complex fields such as medicine and biology, contributing, for instance, to the discovery of new drugs.

SCOPE AND DEFINITIONS

In education, particularly when remote, the creation of educational content that can increasingly adapt to the context and the students who use it plays a very important role. The use of models based on natural language, such as chatbots, allows the creation of personalized educational content, adapting it to the specific needs of each student and promoting more effective learning. Furthermore, they improve educational interaction with the student (AL-Smadi, 2023). GAI can also facilitate the automated evaluation of tasks, replicating human evaluations with significant precision. The adoption of AI tools in education, however, is raising more and more concerns in the adoption by both students and teachers, as well as in the research field. Especially in recent years, studies are moving from an enthusiastic application of the available developments to discussions about their ethical use (Łodzikowski et al.,2024). The use of GAI in education can also have a significant impact on sustainability. It allows us, in fact, to reduce waste in the use of paper materials, helping teachers and students in the digitalized personalization of the contents under study. It can also promote persistent tutoring that breaks down

geographical barriers and can easily reach even the most remote areas (Kamalov et al., 2023).

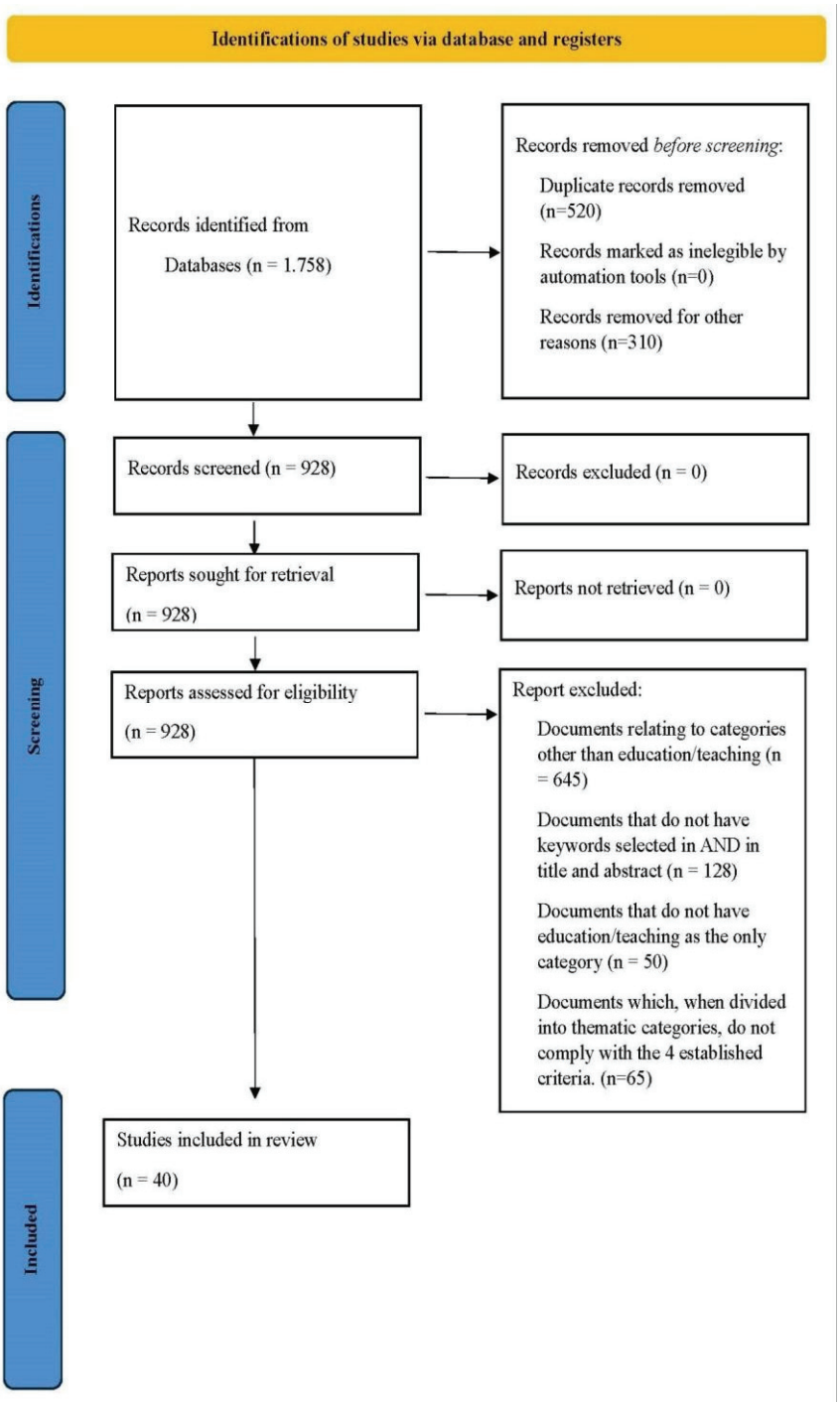
MOTIVATIONS

In this review, we examine the impact of AI and GAI on the education field, with a particular focus on a period of two years starting from November 2022, right after the introduction of ChatGPT. The review adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology to select and synthesize the relevant literature. Our approach seeks to achieve a dual objective: on the one hand, to examine the technological evolution of GAI applied to different application contexts, specifically education; on the other hand, it aims to identify and analyze the main application domains of the last years, with a specific focus always on education. A large number of papers were analyzed, first selecting more than 900 papers. First of all, five macro areas were identified through the analysis of titles and abstracts of the selected papers. The process of selection and clustering of studies exploits, in some subsequent steps, tools made available by AI itself. Specifically, AI is used for the generation of keywords that can accurately describe the studies to be analyzed. This allows us to automate the analysis of studies, in conjunction with abstracts and titles. In a subsequent step, furthermore, the creation of sub-categories that allow to cluster studies even more precisely, uses data prompts as input to ChatGPT 4o. This approach should not be read as a simplification of the review process, but rather as an automated process that reduces potential human biases in the classification and clustering of studies. Finally, 105 relevant papers were reported and classified. For the relevant papers, 8 subcategories were identified and an automated subdivision of the papers into the 8 subcategories was implemented. This allowed us to see how the research is evolving starting from the state of the art of the last three years. Our study has highlighted a vast literature on the topic, from a certain point of view even too vast to allow us to frame the topic without difficulty. Hence the need to work, more than on the description of all the papers, on an effective clustering that would allow us to effectively describe the categories and subcategories of application of the studies. This paper is organized as follows. Section ‘Methods’ illustrates the PRISMA method adopted for the selection of relevant papers. Section ‘Reports Assessed for Eligibility’ presents the results of the publication collection phase. Section ‘Discussion’ analyses the results in detail, offering useful insights on the relevance of this review for the field. Section ‘Open challenges and future trends’ outlines the open challenges and future trends. Finally, Section ‘Conclusions’ reports the conclusions and suggests possible developments for future studies.

METHODS

In this section, we outline the approach used to gather and analyze relevant studies from the literature. As mentioned, we followed the PRISMA methodology, which consists of three main phases: Identification, Screening, and Inclusion (Page et al., 2022). The following paragraphs provide a detailed explanation of how each phase was applied in our research. Picture1 presents the complete PRISMA workflow that served as our reference framework. To clarify the PRISMA process further, a Report can refer to various types of academic documents, including journal articles, preprints, or conference abstracts, while a Record typically represents a report's title, abstract, or both, as indexed in a database or online repository.

Picture 1: The PRISMA workflow.



THE IDENTIFICATION PHASE

For the review we chose to use only Google Scholar because it provides a broad access to academic literature across multiple disciplines. Unlike more specialized databases, it compiles research from a wide range of sources, including journal publishers, institutional repositories, preprint archives, and conference proceedings. This makes it a valuable tool for identifying relevant studies from diverse fields. Additionally, its Google Scholar indexing engine includes publications that may not be available through subscription-based databases. This ensures a more comprehensive review. In any case, to

maintain the quality of our selection, we have applied inclusion criteria and developed a careful screening process.

Table 1: The retrieval engine used for searching papers.

Source Database	Link to the Search Engine
Google Scholar	https://scholar.google.com/

The literature review was carried out between June and November 2024. The eligibility criteria were divided into two main categories: inclusion criteria and exclusion criteria. Inclusion Criteria are: documents were considered eligible if their titles included: "generative AI and intelligent chatbot" or one of the following keywords: "generative AI," "intelligent chatbot," "chatbot," or "ChatGPT." Only literature published in English was selected, both due to the predominance of scientific output on these topics in English and to avoid potential biases from inadequate translations. To focus on contemporary and relevant content, the publication period was limited to 2022–2024. Exclusion Criteria are: documents were excluded if their titles did not contain any of the aforementioned keywords ("generative AI," "intelligent chatbot," "chatbot," "ChatGPT").

REPORTS ASSESSED FOR ELIGIBILITY

The search identified n=1758 papers, n=520 papers were excluded because they were duplicates, as they contained more words, among those selected, within the title, n=310 papers were excluded because they were considered out of scope. At the conclusion of the search process, a total of n=928 papers were identified through Google Scholar. The search and selection activity were conducted independently by two reviewers without the use of automation tools. The data were organized using a structured spreadsheet with the following attributes as columns: publication year, title, thematic category, authors, abstract, source, number of citations, document type, DOI, publisher, and URL. Each row in the spreadsheet represented a single document included in the initial step of the research. For each document, a list of relevant keywords was generated using the TF-IDF (Term Frequency-Inverse Document Frequency) method (Christian et al., 2016). This approach identifies the most significant words within the text by analysing both the title and the abstract. Subsequently, from the hand-made analysis of titles and abstracts of the 928 selected papers, 5 macro categories were identified that could better describe the selected studies, as shown in Table 2.

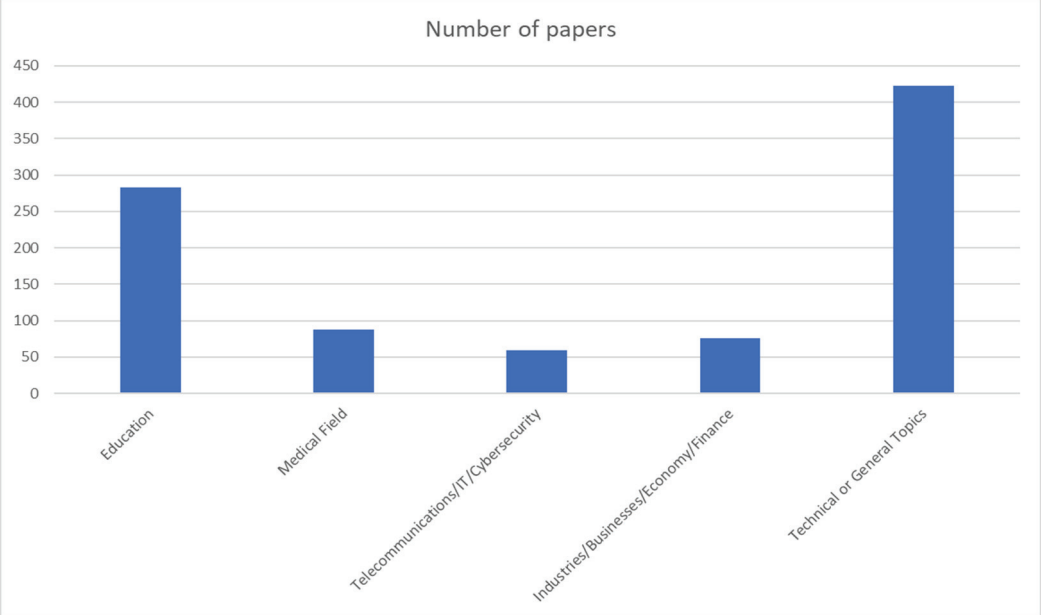
Table 2: Macro categories.

Macro category	Description
Education	Role of AI in learning environments, teaching methodologies, student engagement, and educational technologies.
Medical	AI applications in healthcare, including diagnostics, treatment planning, medical imaging, patient monitoring, and predictive analytics.
Telecommunications/IT/Cybersecurity	AI's influence on digital communication networks, IT infrastructure, data security, and cybersecurity protocols.
Industries/Businesses/Economy/Finance	How AI is transforming industries, businesses, and financial markets.

Technical or General Topics	AI from a theoretical, technical, or interdisciplinary perspective.

The selected papers were divided into macro-categories by submitting the file with all the references and the following specific prompt to ChatGPT4o: *The Excel file contains a collection of scientific papers on topics such as "generative AI," "intelligent chatbot," "chatbot," and "ChatGPT." The task was to populate the "Thematic Category" column by analysing the title, abstract, and keywords of the papers. Categories are: Education, Medical Field, Telecommunications/IT/Cybersecurity, Industries/Businesses/Economy/Finance, Technical or General Topics.* The division of the papers into macro-categories was validated by a reviewer who identified in 11 cases an attribution that was found to be unsuitable. After the review process, the identified categories along with the respective number of documents belonging to each are as follows: education n=283 papers; medical n=88 papers; telecommunications/IT/cybersecurity n=59 papers; industries/businesses/work/economy/finance n=76 papers; technical or general domains n=422 papers. For each document, the main category was counted. For example, the 283 documents categorized as "Education" may also belong to other categories, but they were counted under their primary category, which is "Education". Picture 2 shows a synthesis of the results. The analysis of the five identified thematic categories highlighted the predominance of the category related to the applications of GAI in the field of education, excluding the "technical or general domain" category. This category contains the highest number of papers, n=283. Upon further examination of each category, this section emerged as particularly interesting, with significant potential for developing an applied project that could serve as a case study in the final chapter of this work. To delve deeper, it was decided to further narrow the scope of analysis by including only the n=283 documents related to the category "Education". Consequently, the study sample was reduced from the initial n=928 documents to the n=283 selected for this specific analysis.

Picture 2: Macro-categories division.



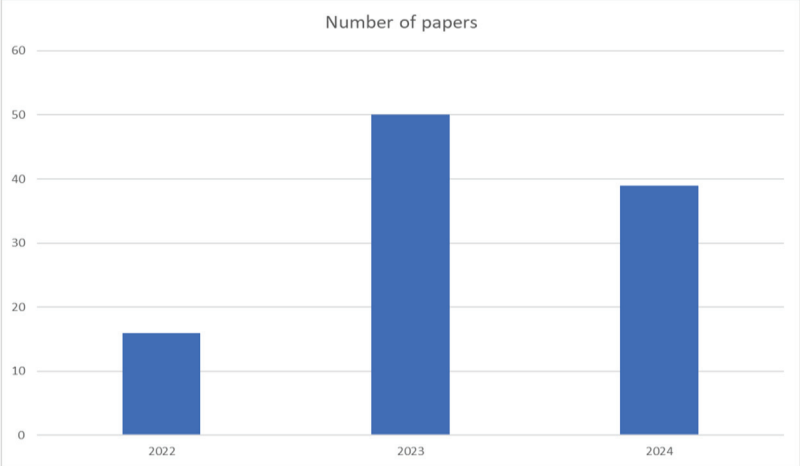
To further refine the analysis, starting from the 283 identified documents, only those with at least one

of the following combinations in the abstract and title were selected: “generative AI AND education”, “intelligent chatbot AND education”, “chatbot AND learning”, “ChatGPT AND teaching”, “generative AI AND e-learning”, “chatbot AND classroom”, “ChatGPT AND higher education”, “intelligent chatbot AND tutoring”, “generative AI AND student engagement”, “ChatGPT AND curriculum design”, “chatbot AND personalized learning”, “intelligent chatbot AND online education”, “generative AI AND instructional design”, “ChatGPT AND teacher training”, “chatbot AND assessment”, “generative AI AND educational technology”, “intelligent chatbot AND collaborative learning”, “ChatGPT AND homework support”, “generative AI AND lifelong learning”. At the end of this process, n=128 papers were excluded because they did not contain at least one AND combination of keywords deemed significant for the context. In the next phase, an additional n=50 papers were excluded as they did not have "Education" as the sole assigned category.

RESULTS IN DETAIL

This section presents a detailed analysis of the characteristics of the papers included in the review, supported using graphs to visualize the collected data. The first characteristic analysed is the temporal distribution of the studies based on the year of publication. The chart in Picture 3 clearly shows that 2023 represents the year with the highest number of publications n=50, followed by 2024 with 39 publications, while 2022 ranks last with 16 publications. It is important to note that this review was conducted between October and November 2024.

Picture 3: Papers by year of publication.



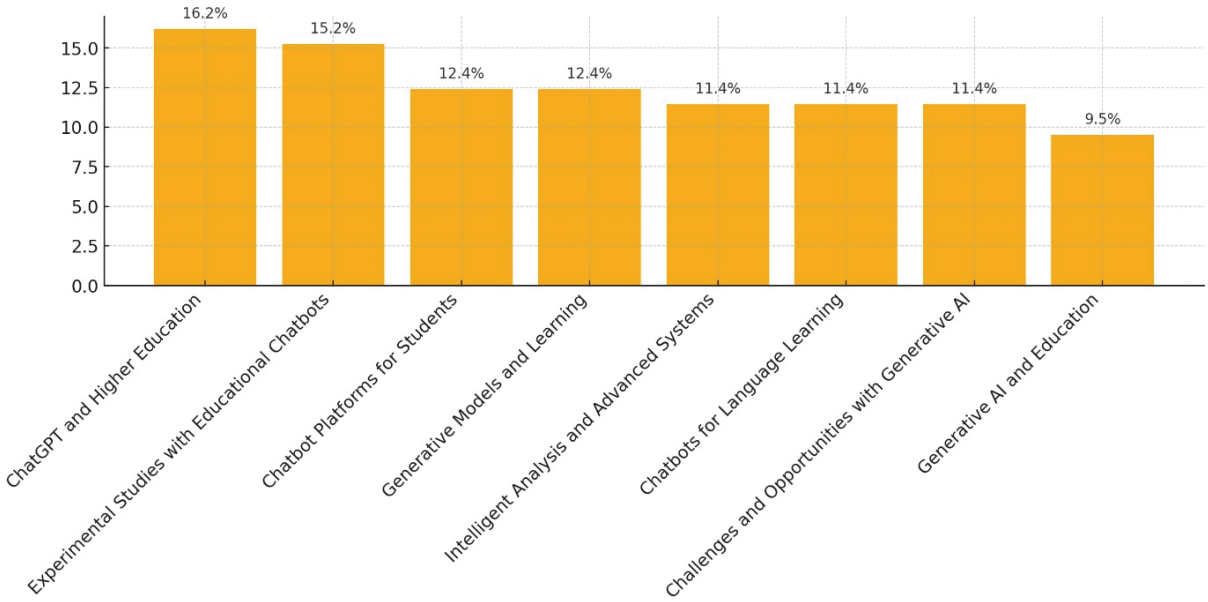
This distribution can be explained by considering one key factor. ChatGPT was introduced in 2022, which justifies the lack of relevant publications in our category for that year. Regarding the 2023–2024 period, the number of studies published on the topic of "Generative AI for Education" included in our review shows a slightly declining trend in 2024. To analyze the results concerning the 105 selected papers, it was decided to make a new division into thematic categories, using the same methodology. The prompt submitted to ChatGPT, in this case, was the following: *“In this file there are 105 papers that I have collected on the topic of education, education with chatbots and Generative AI. Generate thematic categories based on the titles and abstracts of the papers.”* The result provided us with eight thematic categories. The distribution of papers divided into thematic categories is described in Table 3 and in Picture 4.

Table 3: Papers divided in thematic categories.

Thematic category	N. of papers
ChatGPT and Higher Education	17
Experimental Studies with Educational Chatbots	16
Chatbot Platforms for Students	13
Generative Models and Learning	13
Intelligent Analysis and Advanced Systems	12
Chatbots for Language Learning	12
Challenges and Opportunities with Generative AI	12
Generative AI and Education	10

From Picture 4, we can see how the papers appear almost equally distributed. The thematic category "ChatGPT and Higher Education" presents the highest number of papers, followed by "Experimental Studies with Educational Chatbots". The other categories all stand between 10 and 12 papers.

Picture 4: Distribution of papers by thematic category.



DISCUSSION

In this section we discuss the results obtained by dividing the selected papers into thematic categories. For each category we describe its content. The description of each category was obtained from the analysis of each of the papers that compose it and reported in Table 4. For each thematic category, the five papers considered most significant were also selected. The selection was made after the complete reading of all the papers for each thematic category. The selection excluded the review papers. Four key criteria were followed for the selection: (i) methodological rigor was considered; (ii) articles published in peer-reviewed journals, with a solid evaluation, were preferred; (iii) impact and citations were assessed; (iv) the selection valorized papers with a high number of citations or with a significant influence on the scientific and academic debate. A wide diversity of perspectives was also assessed. An

attempt was made to ensure a balance between theoretical studies and practical applications, trying to offer a complete vision of the topic covered. Finally, characteristics of completeness and complementarity were assessed, trying to ensure a balanced coverage of the main topics, trying, as much as possible, to avoid redundancies. The description of each category allows us to understand the state of the art of the literature for each of the thematic categories identified and the direction of research for the coming months.

Table 4: Thematic categories description.

Thematic category	Description
ChatGPT and Higher Education	The papers explore how ChatGPT can be integrated into university education, highlighting both opportunities and critical issues. Michel-Villarreal et al. (2023) and Rane (2023) highlight the benefits in terms of personalized support and involvement, but also the risks related to privacy, ethics and reliability of responses. Al-Mughhairi & Bhaskar (2024) highlight, through interviews with teachers, the need for training and institutional support for an informed adoption. Opara et al. (2023) report problems such as plagiarism and lack of sources.
Experimental Studies with Educational Chatbots	Studies in this category experiment with the use of chatbots in real educational contexts, with encouraging results. LiLiu et al. (2022) show us how chatbots can improve interaction and reduce teaching load. Essel et al. (2022), in a study in Ghana, find better performance in students who use chatbots compared to those who interact only with the teacher. D'Urso & Sciarrone (2024) and De Marco et al. (2024) present AI4LA and TutorChat, chatbots designed for dyslexic students, with positive results on both engagement and learning.
Chatbot Platforms for Students	This category focuses on chatbots used, for example, for FAQs, administrative support, or assistance in online courses. Han & Lee (2022) find that students prefer traditional FAQs to an NLP chatbot. Aloqayli & Abdelhafez (2023) test a chatbot for university admissions, with excellent results in both accuracy and satisfaction. Wood et al. (2023) compare ChatGPT to students on accounting tests: ChatGPT gets 56.5% correct answers, lower than the average student, who gets 76.7%.
Generative Models and Learning	Papers in this category reflect on how generative models, such as ChatGPT, are transforming learning paradigms. Walczak & Cellary (2023) highlight the need to update academic curricula. Lim et al. (2023) propose an interpretative model based on four "paradoxes". Bozkurt (2023) insists on the importance of prompt engineering as a new digital skill. Wu (2023) adopts a philosophical approach, warning against hasty adoption.
Intelligent Analysis and Advanced Systems	Studies in this category focus on advanced chatbots based on deep learning. Windiatmoko et al. (2022) present us with Mi-Botway, which responds to students 24/7 with almost perfect accuracy. Ali et al. (2024) propose AEDBOT, a system based on RASA and BERT, which achieves up to 96% accuracy. Other works (Kuang, 2022; Jsowd, 2023) propose models capable of understanding emotions and adapting to the student's context to improve the effectiveness of responses.
Chatbots for Language Learning	The papers in this category analyze the use of chatbots in language learning, especially English. Kim et al. (2022) introduce Ellie, a chatbot that improves student engagement. Chien et al. (2022) show that the use of LINE Chatbot improves speaking and listening. Ali et al. (2023) indicate that ChatGPT motivates students, but Chaka (2023) criticizes the poor reliability of some models, highlighting problems of plagiarism and quality of responses.
Challenges and Opportunities with Generative AI	This category explores the potential of GAI in an educational context, but also focuses on its ethical implications. Yeralan & Lee (2023) and Abunaseer (2023) highlight the risks and possibilities of GAI, suggesting that academia should lead its adoption. Farrelly & Baker (2023) focus on international students, highlighting the benefits but also the risks of bias. Chukwuere & Handoko (2024) propose solutions to address challenges such as academic integrity and technological adaptability.

Generative AI and Education	Papers in this category investigate students' perceptions towards generative AI. Chan & Hu (2023), on a sample of 399 students, find a generally positive attitude but with concerns about ethics and privacy. Chiu (2024) highlights the impact of GenAI on teaching methods, assessments and preparation for the future. Noroozi et al. (2024) propose to deepen the effectiveness in the long term. Jurenka et al. (2024) and Bonde (2024) underline the importance of a balanced adoption guided by responsible research and design.

OPEN CHALLENGES AND FUTURE TRENDS

Integrating AI and GAI in the educational context, represents a great opportunity, but also critical challenges that must be addressed to ensure that the use of these technologies is done in an effective and ethical way. The analysis of the literature has highlighted several directions and, also, issues that we can summarize in five points.

Ethical and pedagogical concerns. The use of GAI in the educational context poses a pressing challenge: it is necessary to ensure ethically correct use. Careful consideration must be given to the management of data privacy, biases in AI models and the possible risk of system dependency (Łodzikowski et al., 2024). Generating content with AI can lead us to the danger of misinformation and "hallucinations" (Bender et al., 2021). This scenario raises strong doubts about the credibility and accuracy of educational material produced by AI. Another important scenario that is emerging is the use of AI in student assessment. This eventuality must be well designed to avoid discrimination and bias in both criteria and judgments (Yeralan and Lee, 2023). From a pedagogical point of view, it emerges that AI offers a great opportunity when it comes to personalized learning, but it can also reduce the ability to apply critical thinking and problem solving if students are excessively dependent on AI-generated content (Baidoo-anu and Owusu, 2023). In this context, it remains an open challenge to try to achieve a balance between the support that AI can provide, and the learning methodologies traditionally implemented.

The role of AI in personalized and inclusive education. Generative AI has great potential to make education more accessible. We refer, in particular, to students with disabilities or students who are in remote areas (D'Urso & Sciarrone, 2024). In this scenario, innovative tools such as educational chatbots and virtual tutors based on the technologies offered by AI can become, for the student, a personalized support, guaranteeing them targeted attention (De Marco et al., 2024). It is important to specify, however, that for these tools to become truly effective, they must be designed to adequately adapt to diversified learning needs and to the most heterogeneous linguistic contexts possible. Adaptive learning environments are therefore among the future trends in AI-based education. The added value lies in the constant evaluation and progress of students and in modifying the curriculum accordingly (Lim et al., 2023). Research must continue in this direction to refine the models and improve their accuracy and effectiveness, to offer a learning experience that can be considered truly personalized.

Adaptation of teachers and students to AI tools. Teachers and students may encounter difficulties when integrating AI-based tools into their learning processes, despite the potential benefits that can derive from them. For their part, teachers need adequate training to use these systems (Al-Mughairi & Bhaskar, 2024). Furthermore, institutions must commit to providing clear guidelines on how to use them in an ethical and effective way in the classroom and, also, in distance learning. Likewise, students must be educated to use AI responsibly, to avoid ending up in problems related to a real dependence on the AI-generated content or, in the academic field, to what we can define as real intellectual dishonesty (Chan

& Hu, 2023). Future research must also focus on developing literacy programs that properly introduce teachers and students to AI, while ensuring that AI is used as a complementary tool and not as a replacement for traditional methodologies (Jurenka et al., 2024).

AI regulation and policy development. As mentioned, the ever-increasing diffusion of AI within educational processes is making it increasingly necessary to create clear and implementable regulations, together with guidelines that regulate its use. The topic has already emerged widely in recent years, analyzed in this study. We believe that the creation of standard processes for the integration of AI within study programs and, also, frameworks for monitoring AI-based tools is necessary (Łodzikowski et al., 2024). Furthermore, the promotion of transparent AI models and Explainable AI (XAI) approaches is necessary, aimed at ensuring the reliability of content generated through GAI tools (Dai et al., 2023). It is starting to become an important topic and, for this reason, an increase in regulations aimed at controlling the role of a very important player such as AI in education is expected in the future, with particular attention to the protection of student data, the credibility of any AI-based assessments and the guarantee of fair access to AI resources (Chukwuere & Handoko, 2024).

The Future of Generative AI in Education. Concluding this section, we can state that GAI, as we have been able to analyze from recent studies, is undergoing a rapid and continuous evolution. We imagine its applications in the field of education will evolve in the same way. Emerging trends include: (i) virtual teachers and tutors, with the ability to interact in an increasingly advanced way with students; (ii) integration of multimodal AI, with the ability to combine, in a single scenario, different sources such as text, audio and video, with the aim of building increasingly immersive teaching experiences for the student; (iii) tools that aid research, with the aim of helping students and, in the academic field, researchers in the analysis of large amounts of data; (iv) verification of educational content generated by AI, with the aim and desire to always guarantee authenticity and reliability. It is essential to find, in the coming years, an increasingly marked balance between technology and the preservation of the fundamental values of education, as they have always been conceived

CONCLUSIONS

The integration of AI and generative AI into the education sector marks what can be defined as an epochal change especially in the ways in which we can create, disseminate, and evaluate knowledge. In the last two years, especially following the introduction of ChatGPT, the adoption of AI-related tools has demonstrated, on the one hand, the great potential of this technological evolution but, on the other, the challenges it poses (Rane, 2023). The results achieved through this review indicate that, although AI can improve personalization, accessibility, and engagement in learning, it can also entail risks related to misinformation, academic integrity and bias in automated assessments (Michel-Villarreal et al., 2023). This review followed a dual approach. By this we mean that it has not only analyzed the role that AI and GenAI can have in education, but it has allowed us to experiment, itself, with the use of AI-based tools to facilitate the process of reviewing and clustering studies. The use of automated techniques such as TF-IDF for the extraction of concepts and the generation of keywords, as well as the subdivision into macro-categories and, subsequently, into thematic categories, with the support of advanced models, has allowed us to obtain a structured and effective classification of the examined literature. The benefits that we tried to obtain, through the followed approach, can be summarized as follows: i) reduction of human bias: automating the generation of keywords and categories minimizes the possible subjective interpretations of the reviewers, making the classification objective and replicable; ii) efficiency in the review process:

starting from a very large number of articles, the identification of thematic categories benefited from the use of natural language processing tools and, thanks to this approach, was accelerated, allowing an effective synthesis of a large number of articles in reasonable times; iii) completeness of the analysis process: AI allowed us to identify recurring patterns, allowing us to obtain an in-depth understanding of the evolution of research in the analyzed topic; iv) optimization in the identification of articles considered relevant: the support of AI helped to systematically exclude studies that could be less pertinent, focusing attention on significant contributions. The experience, which places us, in a certain sense, in a real application of what was examined by the review itself, shows us how AI, in addition to being a concrete object of study in the field of education, can be a useful tool actively used to optimize academic research processes. However, it is important to clarify that AI cannot replace the role of the researcher, but can support it, offering new opportunities for faster, more detailed and objective analyses. In the future, it will be essential to continue developing methodologies that can integrate AI into educational and research processes in a responsible way, trying to maximize the benefits, without neglecting ethical and methodological challenges. Only in this way will it be possible to exploit the real potential of AI.

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