International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

A STUDY ON GENERATIVE ARTIFICIAL INTELLIGENCE AND FUTURE OF EDUCATION

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ABSTRACT

Generative artificial intelligence (AI) had created a notable tension in all the fields such as education, IT companies and healthcare. AI refers to the field where machines or computer programs are designed to perform multiple human tasks. Generative AI helps to design a new content such as audio, video, images and other data formats. Generative AI is rapidly increasing its necessary and transforming our lives. It has become a trending topic all over the world. Generative AI can be a game-changer in the field of education when it is used in correct way. As digital a generative AI tool it presents global opportunities and challenges to the ongoing digital transformation of education. Artificial intelligence such as chat GPT, Claude, Gemini and copilot utilize advanced natural languages processing technologies including large language models to produce human like responses. Now the generative AI place a major role in the future of education. Higher education is very crucial in this generation for the citizens professionally and globally. The future of higher education should be future ready for the employment in as society powered by AI. Generative AI demonstrates the potential for efficiently creating personalized digital resources at the theoretical level.

This topic focuses:

- On how generative AI helps the future education.
- Benefits of AI in education.
- What are the pros and cons of AI in higher education?
- How AI influences the future of education.

KEYWORDS

Generative AI, chat GPT, future of education, transformation of education, digital resources, challenges, global opportunities, digital transformation.

1. INTRODUCTION

All the applications such as chat GPT and other AI powered tools are increasingly being used by the human being presently, particularly in the software and technology related industries. By attaining chat GPT schools can revolutionize traditional teaching and learning scenarios by expanding teacher student interaction methods. Moreover, machine learning technologies such as automatic essay checking, helping teachers to evaluate students work accurately identify their learning difficulties, and improve the quality of teaching and education. Rather than viewing AI as a replacement for teachers or human intelligence this article considers how it can help us as a supportive tool that strengthens the bond between technology and education. By this article you will understand that people should not only know how to build a prompt or simply using the already prepared prompts they should also must know how to build Ai and how it is influencing them and the present generation. It emphasizes the importance responsible AI usage, human guidance and ethnical awareness to ensure that technology contributes positively towards educational development ultimately. The growing adoption of AI highlights its potential to transform traditional methods of learning and working. Digital transformation of education (DTE) is the shift from traditional classroom teaching to digital learning using information technology including AI. To achieve digital transformation and attain high-quality, balanced development in the era of AI schools must seize possibilities remain abreast of the latest advancements enhance curriculum systems and teaching models. with rapid development of digital technologies, gen AI has emerged as a significant innovation capable of generating human like text, answering questions and assisting with problem solving and supports creative thinking. In recent decades, researchers, policy makers and practitioners have increasingly recognized the potential of AI to enhance education through the use of artificial intelligence in education (AIED). AI-powered learning tools, such as intelligent tutors and recommendation systems, have been developed to enhance students learning experiences by providing personalized guidance. AI can offer tailored learning materials and path ways according to student needs by analyzing their data. It can also identify students who maybe at risk of academic failure. However, the AI tools and chatbots used in these studies did not involve in

GAI (generative artificial intelligence). GAI has garnered interest from general users, educators, and researchers. the use of GAI tools represents a significant advancement compared to previous AI tools. These tools employed deep learning models to generate human-like contents, such as audio, code, images, text, stimulations, 3D objects, and videos. They can also produce unexpected outputs in response to complex prompts. GAI has been utilized to create teaching materials including textbooks.

2. REVIEW OF LITERATURE

de Andr´es-S´anchez, J., & Gen´ e-Albesa, J. (2023) examined the roles of chatbots and did international computer research.

Bonfield, C. A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020) studied about evolution of education, did research about digital age.

3. RESEARCH METHODS

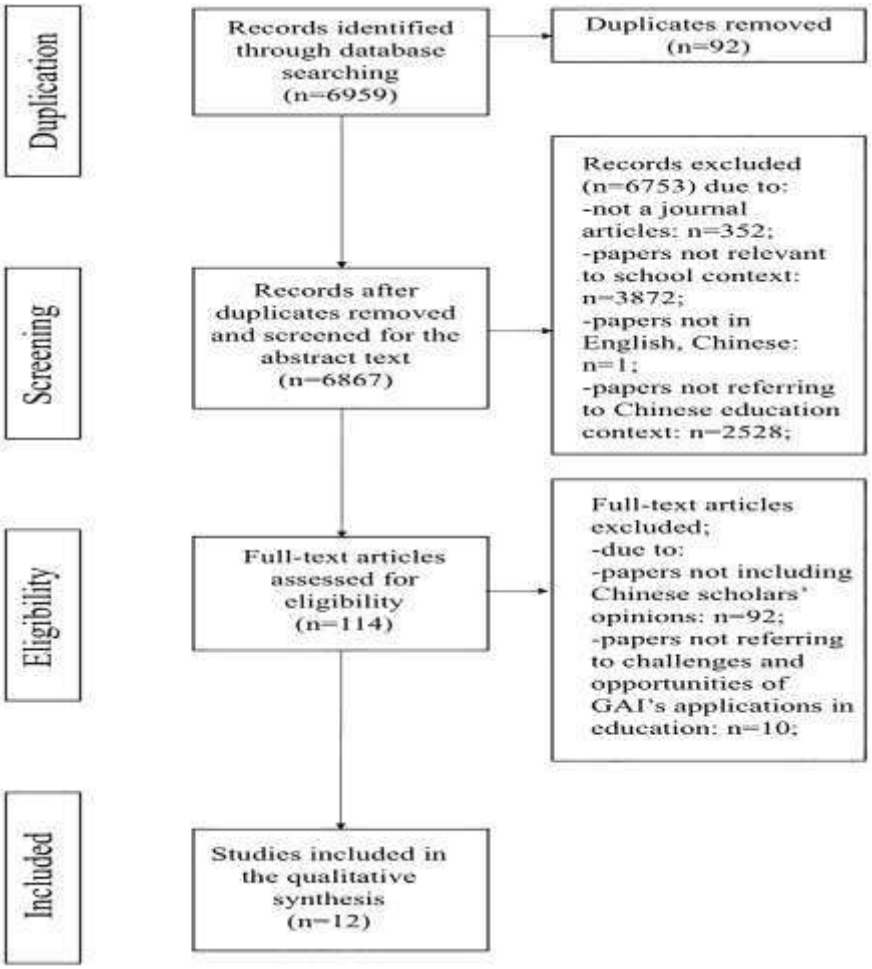
3.1 THE PRESENT RESEARCH METHODS

This study aims to conduct a review of Chinese experts' and scholars' attitudes toward the use of GAI in education. It involves the collection, summarization, management, and analysis of 12 CSSCI research articles as well as interviews with 16 prestigious scholars from Chinese universities and five experts from the industry.

Our data sources are mainly from CNKI, WANFANG DATA, and National Science and Technology Library. We used the keywords “ChatGPT in education,” “new generation AI,” and “generative AI” to search for relevant papers.

Several researchers have investigated the role of Generative AI in education using different research methods. Deng et al. (2025) conducted a systematic review and meta-analysis to examine the impact of ChatGPT on student learning. Alba Darin et al. (2024) used a systematic literature review to analyse empirical research on ChatGPT in education. Other researchers have explored the use of Generative AI in teaching through mixed-methods research, combining quantitative and qualitative approaches. Studies on Generative AI in school education have also used case studies, quasi-experimental designs, and surveys to understand its educational applications. These research methods help identify the potential benefits, limitations, and future implications of Generative AI for students and teachers.

Wang, Li, and Bonk (2024) used surveys and semi-structured interviews to study how students use ChatGPT for self-directed writing and learning. Bower et al. (2024) conducted a mixedmethods study using a survey of 318 educators to explore how Generative AI may change teaching and assessment.



3.2 THE RESEARCH GAP AND GOAL

Developing GenAI is emerging, interfering, and disruptive; as a result, opportunities to reform and advance our future higher education for the future workforce and learning are presented. The viewpoints of students are essential for making sense of the impact that GenAI will have on universities in the future with regard to learning, teaching, assessment, and administration.

As a consequence of this, the purpose of this qualitative study is to investigate, from the point of view of students, how GenAI impacts our higher education. In light of this, the question is.

In order to extract concepts from the data, this study makes use of a hybrid deductive and inductive thematic analysis. This analysis summarizes key features across datasets by highlighting differences and similarities between them. By identifying themes that are associated with the conceptual framework, it provides assistance to researchers in the development of new themes. Researchers are able to produce well-organized and understandable findings using this method of analysis

3.3 RESEARCH GAP AND GOAL

The data was collected after a 3-hour workshop on GenAI in education. Participants learned about AI tools like ChatGPT, Midjourney, and GitHub Copilot and discussed how these tools could improve learning and higher education.

An online questionnaire was used to collect their ideas and concerns. It included five main questions about using ChatGPT for learning, difficulties with AI, useful assignments, future career skills, and the future of universities.

Later, 12 focus group discussions were conducted and audio-recorded. Each group had four or five participants, and discussions lasted about 92 minutes on average. The project leader reviewed the questionnaire answers and asked additional questions to understand the participants' opinions about GenAI and its impact on learning.

4. IMPLICATIONS

This qualitative study intended to investigate how GenAI affects higher education from the perspective of students. These findings imply that students' perceptions of learning, pedagogies and assessment for future institutions have changed as a result of GenAI. Prior research on AI in education has the main view on the design and development of effectives learning environments, as well as the use of experimental and correlational research to comprehend the factors influencing student academic performance and motivations.

4.1 IMPLICATIONS FOR PRACTICES

New learning outcomes: future higher education institutions should better prepare for the future workforce. The findings propose new learning outcomes, and emphasize some existing learning

outcomes. The new outcomes include skills in learning and working with GenAI, and an interdisciplinary learning mentality First, GenAI is being integrated into workplace applications such as email providers, report generators, graphics creators and editors, 3D models, productivity tools, and coding programs. Future employees are bringing their AI skills to work as new hires, accelerating more utilization in the future. Furthermore, young employees are more inclined than them to use GenAI at work. As a result, it is critical to train students to use GenAI for lifelong learning and employment. Second, another new outcome that students should have been AI literacy. Students that understand AI can work with GenAI while knowing its capabilities and risks (e.g., ethical and moral issues). They become more responsible and responsible GenAI users and learners. Other than AI literacy, this study suggests that higher education institutions can improve students' digital and enable them deal with future difficulties and make decisions about the use of GenAI. The final new result is an interdisciplinary learning mentality. Traditionally, university courses are single-disciplinary in nature; nevertheless, students should be prepared to learn in an interdisciplinary domain in order to tackle complex real-life challenges using GenAI. Furthermore, in a GenAI-powered society, the other two existing learning outcomes that should be addressed are interpersonal communication skills and adaptability. they are frequently developed in whole university initiatives, making them less essential from student perspectives. Future institutions should make course or program learning outcomes more explicit.

4.2 CONCLUDING REMARKS, LESSONS, IMPLICATIONS, AND FUTURE DIRECTIONS

The rise of Generative AI may seem like a cause for panic, amid a slew of alarmist articles and the rapid bans by several educational bodies and institutions. However, due to multiple paradoxes that these tools create, we argue that Generative AI is not Ragnarök but rather a transformative resource that educators and students can draw on in teaching and learning. Raising awareness of these tools, using them together in class, and leading discussions with students about their pros and cons offer a more sustainable way forward than either banning these tools or making them central to entire curriculums.

As with governance of student data collection and usage, educational bodies and institutions need to be up to date on the latest AI developments and update their relevant policies and guidelines accordingly. Reiterating that using AI-generated verbatim texts to produce assignments clearly constitutes academic misconduct (i.e., plagiarism) and updating the

relevant policy accordingly should come hand-in-hand with examples of how students can use AI tools to brainstorm, develop initial ideas, and critique.

4.3 IMPLICATION FOR POLICY DEVELOPMENT

Assessment policy: the findings suggest that new dimensions and approaches to assessment will be required for future higher education (Themes 1 and 3). Currently, course grading, i.e., student performance assessment has traditionally relied mainly on final activities such as essays, projects, tests, or exams. Essays and projects could be completed with the assistance of GenAI, and cognitive learning as measured by exams or tests may become less relevant in the future workforce. Instead of making recommendations, institutions should develop guidelines and policies that highlight the competence required for the future workforce, and in-class and hands-on activities outlined in this study. To understand the impact of GenAI on assessment, AI and GenAI should be embedded in teacher professional development programmes in universities. In other words, AI literacy is suggested for both students and teachers. Moreover, students' competences for future jobs (21st century skills) are often measured by a questionnaire at the end of the term or year. Institutions should use objective measures to develop a competence assessment platform that allows students to test their competence at any time.

5. RESEARCH METHODOLGY

For this article, we referred to research papers, articles, and online sources related to Generative AI and education. we collected information about how AI helps students and teachers in the learning process. we also looked at the benefits and challenges of using AI in education. Based on the information collected, we discussed how Generative AI may change the education system in the future.

6.CONCEPTUAL BACKGROUND

Generative AI is a new technology that can create text, images, and other content based on user instructions. Nowadays, it is becoming popular in the education field because it helps students learn new topics and complete their academic work. Teachers can also use AI to prepare notes, questions, and learning materials. I believe Generative AI can make education easier and more interesting, but students should use it properly and not depend on it completely.

7. ANALYSIS AND DISUSSION

From our research, I found that Generative AI can be helpful for both students and teachers. It makes learning easier by providing quick answers and explanations for difficult topics. It can also help teachers prepare notes and other study materials. At the same time, students should not depend completely on AI because it may sometimes provide incorrect information. In my opinion, using AI along with regular learning can make education more effective in the future.

8. MAJOR FINDINGS

- Generative AI can improve students' academic performance and learning outcomes.
- AI tools can provide personalized learning support.
- ChatGPT can help students understand difficult concepts.
- Generative AI can improve student motivation and engagement.
- Overdependence on AI may affect critical thinking and independent learning.
- Privacy, accuracy, and academic honesty remain major concerns.
- Teachers need proper training to use AI effectively in education.

9. SUGGESTIONS / RECOMENDATIONS

- Personalized Learning: GenAI helps students learn according to their individual needs and learning speed.
- Easy Access to Knowledge: GenAI provides quick answers and simplifies difficult topics, making learning easier and more accessible.
- Future Career Skills: GenAI helps students develop digital knowledge, creativity, and problem-solving skills needed for future jobs.
- Changing Role of Teachers: GenAI supports teachers in preparing lessons, evaluating students, and providing personalized guidance.
- Responsible Use of AI: Excessive dependence on GenAI may reduce independent thinking and creativity, making responsible use essential.

10. CONCLUSION

It is essential to pay attention to the opinions of students in order to fill in the gaps left by the fact that most of the conversations pertaining to this topic take place between instructors or researchers. This study could be one of the first empirical studies to use student voice to suggest how GenAI transform higher education. Overall, the students are motivated by the prospect of future employment and desire to develop the skills required for GenAI-powered jobs. The findings give an overview of three areas: learning outcomes, pedagogy, and assessment. There are three key limitations to this study: First, this study was conducted in an eastern cultural region; students in the western region may view it differently. Future research should include comparative studies to better understand how GenAI affects higher education. Second, instructors are stakeholders and may have different views; therefore, future studies should collect instructors' views. Last, while GenAI is a new technology, not all participants have extensive experience learning and teaching with it. They may change their minds after GenAI is fully integrated into schools.

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