Chatting or Cheating

– Test of a First-Rate Intelligence?

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July 2024

Keywords

Generative AI, Higher Education, Academic Integrity, Learning Technologies

Abstract

The emergence of Large Language Models (LLMs) has significantly influenced the landscape of Higher Education, with their adoption by students and educators escalating rapidly since OpenAI introduced ChatGPT in November 2022. By means of a rapid literature review the authors examined the current state of generative artificial intelligence (GenAI) tools and their application in diverse learning and teaching settings within Higher Education. A comprehensive analysis was conducted, including peer-reviewed academic literature, conference calls, and insights from social media discussions. This investigation culminated in the development of the ENIGMA framework, comprising six key activities, namely Engage, Navigate, Individualise, Guide, Moderate, and Adapt. The study underscores the necessity for further research into the seamless integration of AI technologies by educators and students in educational settings.

Corresponding Author: Olivia Wilson, Oliviaw@stadio.ac.za. To quote this article: Wilson, O., Olivier, C. & Morkel, J. 2024. "Chatting or Cheating – The Test of a First-Rate Intelligence?", *Journal of Ethics in Higher Education* 4(2024): 61-89. DOI: 10.26034/fr.jehe.2024.5970

1. Introduction

"The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function."

F. Scott Fitzgerald, 1936

In recent years, the use of artificial intelligence (AI) has become increasingly prevalent in higher education (Dwivedi et al. 2023: 3; Kuleto et al. 2021: 1; Sullivan/Kelly/McLaughlan 2023: 2). One such example is the use of chatbots powered by Generative Pre-trained Transformer (GPT) models, such as ChatGPT (Kasneci et al. 2023: 2).

ChatGPT, an advanced natural language processing (NLP) model, is gaining notable traction in higher education for its potential to enhance educational experiences, improving learning outcomes and fostering heightened student engagement (Dwivedi et al. 2023; Kasneci et al. 2023; Kuleto et al. 2021; Sullivan et al. 2023). Its integration into various teaching and learning contexts reflects its ability to simulate natural language interactions effectively. ChatGPT leverages sophisticated NLP algorithms to deliver contextually relevant and informed responses, thereby facilitating a more interactive and engaging learning environment for both educators and students. This growing prominence is reported in recent scholarly works, including those by Haleem, Javaid, and Singh (2022), Kasneci et al. (2023), and Sullivan et al. (2023), which highlight its application and impact in the educational domain.

This rapid literature review aims to explore the use of generative AI tools, such as ChatGPT, by educators, and students, for learning and teaching in higher education settings.

2. Background

Artificial intelligence (AI) is rapidly transforming various industries, and higher education is no exception (Dwivedi et al. 2023; Kuleto et al. 2021). One of the most promising frontiers of AI lies in the domain of chatbots and generative AI. These technologies harness algorithms to create original

content, spanning from essays and quizzes to data analysis and predictive analytics (Kasneci et al. 2023; Kuleto et al. 2021). For educators, recognising the potential of these tools is essential, as they can profoundly inform teaching methodologies and student learning experiences. These advancements in generative AI have the potential to revolutionise teaching and learning by providing personalised, interactive, and engaging experiences for students. With the ability to generate content, chatbots and other generative AI tools can aid in delivering tailored educational materials, offering real-time feedback, and facilitating student engagement and learning (Dwivedi et al. 2023; Kuleto et al. 2021).

Embracing AI-powered chatbots like ChatGPT offers educators a promising avenue to address the prevailing challenges within higher education. These challenges include resource disparities and the need for personalised student support (Dwivedi et al. 2023; Kasneci et al. 2023; Kuleto et al. 2021). Educators can explore these innovative solutions to bridge gaps and enhance the educational experience for all students. In addition, the use of AI-powered chatbots, such as ChatGPT, could help to address this issue. Generative AI may offer a solution to some of these challenges by providing more efficient and effective ways of supporting education (Dwivedi et al. 2023; Haleem et al., 2022; Kasneci et al. 2023; Kuleto et al. 2021), for example, ChatGPT's unique ability to generate responses and deliver immediate feedback harnessed by educators to provide individualised support to students. This technology can play a pivotal role in helping students overcome challenges, clarify concepts, and access information and resources (Dwivedi et al. 2023; Haleem et al. 2022; Kasneci et al. 2023; Kuleto et al. 2021).

This capability of AI tools to generate content, raises legitimate concerns about the authenticity and integrity of students' work. Additionally, the detection and prevention of cheating or improper use of generative AI tools pose intricate challenges for educational institutions (Dwivedi et al. 2023; Haleem et al. 2022; Kasneci et al. 2023; Kuleto et al. 2021). Educators need support to navigate these opportunities and challenges thoughtfully and ethically, ensuring that the adoption of AI technologies enhances the learning environment without compromising its integrity (Cotton/Cotton/Shipway 2023).

Moreover, detecting and preventing cheating or misuse of generative AI tools can be challenging for institutions (Dwivedi et al. 2023; Haleem et al. 2022; Kasneci et al. 2023; Kuleto et al., 2021). Furthermore, there may be concerns about the readiness and capacity of educators and students to effectively use generative AI tools in their teaching and learning processes. Adequate training, support, and resources may be needed to enable educators and students to effectively integrate and use these tools in their educational practices (Dwivedi et al. 2023; Kuleto et al. 2021; Haleem et al. 2022; Sullivan et al. 2023).

By analysing the existing research, the review seeks to provide evidence-based insights into the use of generative AI tools (Dwivedi et al. 2023; Kuleto et al. 2021) for teaching and learning. The findings of this review will contribute to a deeper understanding of how educators use generative AI tools in higher education. The examination of opinions about ethical concerns, academic integrity, and the readiness of educators and students will shed light on the challenges and considerations associated with the use of generative AI in educational settings (Dwivedi et al. 2023; Haleem et al. 2022; Kasneci et al. 2023; Kuleto et al. 2021). Through the analysis of existing research, this review aims to provide evidence-based insights that can inform decision-making processes and guide the effective integration of generative AI tools in higher education practices. The findings will contribute to the advancement of knowledge in the field and provide valuable guidance for educators, policymakers, and stakeholders in higher education institutions.

3. Problem statement and research questions

As generative artificial intelligence (AI) tools, such as ChatGPT, gain prominence in higher education, questions arise about their impact on educators' acceptance and integration of these tools. Drawing on existing research (Amri/Hisan 2023; Chan/Lee 2023; Lo 2023; Qadir 2023; Su/ Yang 2023), it is conjectured that a positive relationship exists between educators' grasp of ChatGPT's functionality and their propensity to adopt and seamlessly embed these AI tools into their teaching methodologies.

Conducted as a rapid literature review, this investigation aims to review and synthesise insights from diverse sources, including social media content, scholarly discourse in peer-reviewed journals, and knowledge shared through conference and symposium deliveries. Through meticulous analysis, the review aims to unravel the extent to which educators' familiarity with the capabilities and operational intricacies of ChatGPT influences their inclination to embrace and proficiently infuse these AI tools within their instructional methodologies. Furthermore, this inquiry will delve into potential mediating variables that might influence this relationship, spanning considerations about academic integrity, ethical dimensions, and the readiness of educators and students to effectively engage with generative AI tools.

Within the evolving landscape of education, the ascendancy of generative AI tools, exemplified by ChatGPT, prompts a pivotal inquiry into educators' adoption and effective integration of these tools. Central to this exploration is the extent to which educators' comprehension of these tools' capabilities and functionalities shapes their integration into educational contexts.

The central focus of this study is to investigate the extent to which educators' comprehensive understanding of generative AI tools, particularly ChatGPT, influences their decision to adopt and seamlessly integrate these tools within various educational contexts. Therefore, we seek to review: how do educators' understanding of the capabilities and functionalities of generative AI tools influence their adoption and effective integration of these tools within educational contexts? To achieve this, we aim to investigate:

- How do educators' attitudes, perceptions, and concerns towards technology in education influence their adoption of generative AI tools such as ChatGPT?
- What strategies and approaches have educators found or developed to overcome barriers and challenges in effectively integrating ChatGPT into their teaching practices?

4. Rationale

This review centres on the pivotal role educators play in the integration of generative AI tools in education (O'Leary et al. 2017). By examining various dimensions, including educators' attitudes, perceptions of tool capabilities, contextual relevance, ethical considerations, and integration strategies (Mallik/Gangopadhyay 2023; Owoc/Sawicka/Weichbroth 2019; Qadir 2023; Salas-Pilco/Xiao/Hu 2022), this study aims to provide targeted insights for educators, institutions, and policymakers. The organised approach employed in this rapid review aims to furnish actionable insights amidst the complex landscape of AI integration in education.

By reviewing these multifaceted dynamics, this research is poised to supply prompt and targeted insights that hold the potential to guide educators, institutions, and policymakers through the intricacies of integrating AI tools into educational practices. Through a systematic presentation of findings, the rapid review contributes to a heightened comprehension of educators' role in leveraging AI tools, thus augmenting the educational experience for both instructors and learners alike. This rapid review's focused and organised approach aims to equip stakeholders with actionable insights that resonate across the complex landscape of AI integration in education.

5. Methodology

The methodology of our rapid literature review, as outlined by Grant and Booth (2009), is designed to efficiently capture the dynamism of AI in higher education. Rapid literature reviews focus on defining a clear and focused research question or aim that can be addressed within a brief period. This approach involves conducting a limited search of relevant sources, using predefined and explicit search terms and strategies. Once the data has been sourced, specific criteria or filters are applied to select studies that are most relevant and suitable for the research questions. These criteria may include factors like date range, language, publication type, and study design. We also employ a brief and standardised tool or checklist to appraise the quality and relevance of the selected studies.

Subsequently, we synthesise the main findings and implications of the selected studies using a narrative, descriptive, or tabular approach. Our aim is to provide a quick and concise overview of the evidence on educators' perspectives about the integration of generative AI tools, with a particular focus on ChatGPT, within higher education. This synthesis enables us to stay current and extract valuable insights from a vast body of research, all while considering the evolving nature of AI in education.

In this study, we conducted our rapid literature review covering articles and content published between November 2022 and August 2023. To comprehensively gather information, we used a range of sources including formal, semi-formal, and informal sources, assuring a comprehensive comprehension of the subject. Through a review of peer-reviewed literature, Conference and symposium information and social media, we covered formal, semi-formal and informal sources.

Peer-reviewed journals from respected journals and databases made up most formal sources. These resources provided reliable and thoroughly examined content, serving as the cornerstone of our literature study.

Materials from Webinars, Symposiums, and Conference Proceedings provided semi-formal sources. These sources have intellectual importance despite not all being peer-reviewed in the conventional sense since they frequently included new research, creative concepts, and preliminary conclusions. We used these resources to supplement the academic literature and obtain knowledge of changing opinions and trends in the industry.

To record the broader societal discussion surrounding our topic, we used social media posts, specifically LinkedIn, Instagram, and X (formerly known as Twitter). These sites provided access to current data on frequent debates, comments, and insights. Despite not being subject to the same level of academic examination, these sources offered insightful real-world perspectives, a variety of viewpoints, and up-to-date information.

The efficiency of our methodology allows us to summarise the current state of the field, and we have also incorporated software and applications such as Microsoft Word, BASE, Google Scholar, Refworks ProQuest, Cockatoo,

Lateral.io, and ChatGPT to expedite the review process. Importantly, these tools and techniques are employed without compromising the validity and reliability of our review findings. Because the review focuses on published research that is in the public domain no ethics approval was required.

Employing thematic analysis (Schick-Makaroff 2016), we analysed the literature to recognise recurring themes, emerging trends, inherent challenges, and promising opportunities. Key insights and findings from these analyses were meticulously synthesised from all the sources of information.

Peer-Reviewed Journal Articles

In our search for formal peer-reviewed journal articles offering insights into educators' perspectives on ChatGPT and AI integration in education, we conducted comprehensive searches across prominent academic databases, including widely recognised sources such as Google Scholar and EBSCOHost. We also used Elicit (2023), which employs machine learning to aid with research tasks, such as finding papers, extracting key claims, summarising information, and brainstorming ideas.

Our search was guided by a carefully selected set of keywords and search terms, such as "ChatGPT," "AI in education," and "educators' perspectives on AI," to ensure the relevance of the articles to our research focus. To ensure the most current insights, we applied stringent inclusion criteria to the search results, requiring articles to be published between November 2022 and August 2023. Consistency in language comprehension and analysis was supported by selecting articles written in English.

Additionally, we limited our selection to articles that concentrated on ChatGPT or similar AI technologies in educational contexts and included empirical research, case studies, reviews, or critical analyses to ensure a robust foundation of research-backed insights. Articles not meeting these criteria or unrelated to ChatGPT and AI integration in education were excluded from our consideration. Our review and selection process were meticulous, aiming to find articles that precisely aligned with our inclusion criteria.

Furthermore, it is important to note that peer-reviewed articles requiring payment or lacking unrestricted access were also excluded from our selection process. After this comprehensive and careful process, we selected a total of 12 peer-reviewed articles that specifically focused on educators' perspectives. These articles formed the core of our data for analysis and synthesis, offering valuable insights into how educators perceive and interact with ChatGPT and AI technologies within educational settings.

Webinars, Symposiums, and Conference Proceedings

This section discusses the method used to source and screen webinars, symposiums, conference papers, and related semi-formal materials:

The inclusion of webinars, symposiums, and conference papers in this review is based on their value despite ongoing debates. Scherer and Saldanha (2019) highlight that conference papers often precede full-length articles with promising findings. However, caution is exercised due to resource-intensive abstract retrieval, potential lack of comprehensive information, and abstract content reliability concerns. We chose to include them considering ChatGPT's rapid impact on Higher Education.

To source materials, we followed Booth and Grant's (2009) method. We used the Bielefeld Academic Search Engine (BASE) and Google Scholar. BASE aggregates scholarly resources from open-access and institutional repositories, while Google Scholar indexes academic works comprehensively.

Our criteria encompassed materials from November 2022 to August 2023, focusing on ChatGPT in Higher Education. Exclusions included non-English records, materials outside the specified scope, and those lacking full accessibility. In BASE, the search strategy involved keywords "ChatGPT Higher Education" and document type "Conference Object," yielding 35 results by August 10, 2023. In Google Scholar, the search term "ChatGPT Higher Education source: conference for the years 2022–2023" resulted in 29 records by the same date. For webinars, conferences, or symposia with video recordings only, YouTube video transcripts were processed, removing timestamps and filler words. Videos from repositories were converted into

text using the Cockatoo Transcription tool (Cockatoo 2023). Resulting PDF versions were considered data, adding three records.

RefWorks (2023) eased record management, with 67 records imported. After deduplication (n = 18) and removing non-English records (n = 7), records outside the review's scope (n = 11) were excluded. Following full screening (n = 31), 15 records were removed for scope misalignment and nine due to subscription access, leaving seven eligible records. These records were then uploaded to Lateral.io.

Lateral.io, powered by natural language processing and AI, was used to analyse the selected records, extracting key concepts, meaningful information, and interconnections. Searches within these records focused on attitudes towards Generative AI, strategies for overcoming barriers, and main conclusions and recommendations about generative AI in education. Summaries of each record were compiled for enhanced comprehension and exploration of complex textual content (Lateral, 2023).

This structured process allowed us to comprehensively capture the essence of each study (Pandey & Pandey, 2021). Simultaneously, a concise yet thorough quality assessment was carried out. This evaluation aimed to gauge the reliability and rigor of the selected articles. While emphasising concision, it ensured that the chosen studies met essential criteria for inclusion in our rapid literature review (Tricco et al., 2015).

Social Media Posts

Although not specifically referring to the link between the knowledge and adoption of AI in education, social media posts as a data source is regularly used in research to explore the use of educational technology. For example, Li et al. (2023) analysed X (formerly Twitter) posts to understand the use of ChatGPT in education. Insights from the content shared in, and the informal discussions conducted on social media platforms, specifically LinkedIn, Instagram, and X (formerly known as Twitter) were systematically examined. These sites provided access to current data on frequent debates, comments, and viewpoints, as well as links to websites, blogs, videos, and other media, shared in support of these views. Despite not being subject to the same level

of academic examination, these sources offered insightful real-world perspectives, a variety of viewpoints, and up-to-date information.

The social media data is based on X (formerly Twitter), Instagram and LinkedIn posts that one of the authors collected in the period from November 2022 to August 2023. These posts were collated in a WhatsApp chat dedicated to content related to AI in education and focusing on higher education. The same key words were used to thematically categorise the data.

Because of the potential biases of using social media posts for research, this data is considered in combination with the semi-formal data generated by the webinars, symposiums, and conference proceedings and the formal peer-reviewed journal articles.

6. Findings and Discussion

Engage: Scaffolding Critical Discourse Through AI-generated Content

A noteworthy outcome from the rapid literature review underscores the role of AI-generated content in stimulating critical engagement among students. The findings from Haleem et al. (2022) offer a futuristic perspective on ChatGPT, emphasising its transformative potential in diverse industries like customer service, online learning, and market research. The authors specifically highlight ChatGPT's success in generating diverse content, such as essays and stories, underlining its versatility. This aligns with the broader literature, particularly the insights from Kasneci et al. (2023) who examined the benefits and challenges of large language models in education. These discussions resonate with the emphasis on ChatGPT's potential to stimulate critical engagement by facilitating diverse learning materials and interactive experiences, as noted in forums like the Academy of Science of South Africa and the LearningLandscapes Symposium.

The implications of ChatGPT for assessment in higher education, as discussed in the 11th ASSAf Presidential Roundtable and the LearningLandscapes Symposium, align with the foundational role identified

in the rapid literature review. The literature underscores how AI tools, including ChatGPT, stimulate critical engagement among students by fostering discussions that encourage deep exploration of course material. These discussions go beyond theoretical implications and highlight the practical significance of AI-generated content in fostering engagement and critical discourse, particularly through innovative platforms for collaborative learning.

Qadir (2023) and Vargas-Murillo et al. (2023) emphasise the potential applications of ChatGPT in education. They explored ways in which ChatGPT can be leveraged by both educators and students to create and engage with course content, including presentations, coding exercises, quizzes, and scientific papers. This aligns with the foundational resource role identified in the rapid literature review and complements insights from the 11th ASSAf Presidential Roundtable, providing a understanding of the potential benefits and challenges associated with AI-generated content in stimulating critical engagement. However, challenges in occasional inaccuracies call for a critical examination of the extent to which educators can rely on AI-generated content. The need for harmony between inspiration and independent critical thinking is emphasised, ensuring that AI tools like ChatGPT serve as aids rather than replacements for creative thought.

The paper presented at the 2023 ACM Conference on Fairness, Accountability, and Transparency (FAccT) by Hacker et al. addressed the use of large generative AI models (LGAIMs) like ChatGPT in education. While focusing on regulatory approaches for LGAIMs, the paper indirectly underscored the potential impact of these models on educational content generation and learning experiences. The proposed layered regulatory approach aligns with the broader theme of responsible AI use and ethical considerations in education, contributing to the critical discussion surrounding the ethical integration of AI tools.

Smolansky et al. (2023) expand the discussion to address concerns about the potential exclusion of underrepresented individuals in AI-integrated education. Although not explicitly focusing on educators' attitudes, this paper introduces the critical theme of ensuring equity and inclusion in the

development and implementation of AI tools in education. It broadens the perspective on critical engagement by considering the diverse impacts and challenges associated with AI integration.

The Times Higher Education Campus webinar on Artificial Intelligence and Academic Integrity provides valuable insights into the ethical integration of generative AI tools, particularly ChatGPT, in academic settings. The panel discussion sheds light on the challenges and opportunities associated with AI in education, contributing to the ongoing dialogue on responsible AI use. The limited representation of student views in media discussions, as highlighted by research from Sullivan et al. (2023), emphasises the need for a more inclusive dialogue to foster critical engagement and a holistic understanding of the role of AI tools in education.

Murad et al. (2023) contributed by further highlighting the strengths of ChatGPT, emphasising its ability to generate credible and reasonable responses. The potential for learners to engage with ChatGPT for various purposes, from answering queries to essay writing, provides an opportunity to enhance educational experiences through interactive and intuitive interactions. Firat (2023) underscores the anticipation among educators and scholars regarding the transformative potential of AI technologies like ChatGPT in traditional learning methods. This anticipation aligns with the imperative to engage with AI as a wellspring of inspiration and scaffolding for original work. The encouragement for students and academics to leverage AI-generated content speaks to the potential for fostering creativity and deeper learning experiences. The danger of overshadowing students' independent thought, however, emphasises the need for educators to ensure that engagement with AI remains a catalyst for creativity rather than a substitute for genuine, original work.

The studies by Bin-Hady et al. (2023) and Kaplan-Rakowski et al. (2023) highlight the engagement aspect through AI-generated content, emphasising ChatGPT's potential in honing language skills and supporting language education. However, a critical viewpoint might delve into (one might ask) how this engagement aligns with critical discourse. Assessing whether AI-

generated content truly fosters critical thinking or merely offers surface-level engagement is imperative for a comprehensive understanding of its impact.

Navigate: Continuous Professional Development and Collaborative Learning Communities

Educators navigating the ever-evolving landscape of AI in education emphasised the importance of continuous professional development and collaboration within learning communities. The insights from Dwivedi et al. (2023) offered a multidisciplinary perspective on the opportunities and challenges of generative conversational AI, including ChatGPT. The article underscored the importance of continuous learning and collaboration across various domains, resonating with the Symposium on LearningLandscapes' emphasis on educators' need for continuous professional development. Additionally, the article suggests questions for further research, aligning with the Symposium's recognition of the evolving landscape and the importance of navigating challenges.

The need for continuous professional development, highlighted in various sources including Qadir (2023) and Smolansky et al. (2023), resonates with the Symposium on LearningLandscapes' AI for Research. Qadir (2023) emphasises educators' need to acquire new skills to integrate ChatGPT effectively, while Smolansky et al. highlight barriers in implementing AI solutions, emphasising the importance of training and collaboration. These findings complement the discussion on continuous learning, underscoring the evolving landscape of AI in education.

The Symposium on LearningLandscapes' AI for Research echoes the importance of continuous professional development and collaborative learning communities emphasised in the 11th ASSAf Presidential Roundtable (Academy of Science of South Africa, 2023; LearningLandscapes Symposium 2023). Both forums underscore the need for educators to continually evolve their skills and engage in collaborative platforms to effectively integrate AI tools into educational practices.

The IEEE Global EDUCON paper echoes the importance of continuous professional development, emphasising the need for educators to acquire new

skills to effectively incorporate ChatGPT into their teaching practices (Qadir, 2023). This aligns with the Symposium on LearningLandscapes' AI for Research, which underscores the significance of ongoing training programs and collaborative platforms for educators (LearningLandscapes Symposium 2023). Both sources highlight the evolving landscape of AI in education, emphasising the need for educators to navigate this dynamic environment through continuous learning and collaboration.

The ACM FAccT paper underscores the need for a regulatory shift and collaboration within the AI value chain to address potential risks associated with LGAIMs (Hacker et al. 2023). This aligns with the Symposium on LearningLandscapes' AI for Research, which emphasises continuous professional development and collaborative learning communities for educators (LearningLandscapes Symposium 2023). Both sources recognise the dynamic nature of AI technologies and the importance of adapting strategies to navigate potential challenges.

Smolansky et al. (2023) aligns with the Symposium on LearningLandscapes' AI for Research by emphasising the need to address barriers and challenges when implementing AI solutions in education. They recognise the disparities in technology access, potential biases in AI tools, and the importance of considering students with disabilities.

THE Campus (2023) addressed the challenge of contract cheating and the potential for AI, including ChatGPT, to create new flags for academic integrity violations, making investigations more complex. This aligns with the Symposium on LearningLandscapes' AI for Research, emphasising the importance of navigating ethical boundaries and addressing challenges associated with AI integration (LearningLandscapes Symposium 2023).

The webinar encourages conversations about the integration of AI in education, shifting from a fixation on success to a perspective (THE Campus, 2023). This aligns with the Symposium on LearningLandscapes' emphasis on engaging students in conversations about the effective and responsible use of AI tools (LearningLandscapes Symposium 2023).

The insights from Sullivan et al. (2023) contribute to the discussion on continuous professional development and collaborative learning communities. The media discourse, primarily centered around academic and institutional perspectives, emphasises the evolving landscape of AI technologies. This aligns with the Symposium on LearningLandscapes' AI for Research, which underscores the significance of ongoing training programs and collaborative platforms for educators (Sullivan et al. 2023). Both sources recognise the dynamic nature of AI technologies and the importance of adapting strategies to navigate potential challenges. The limited representation of student voices in media discussions also points to the need for inclusive collaboration that involves students in shaping the future of AI in education.

Rahman and Watanobe (2023) identify opportunities for educators to use ChatGPT in lesson planning, generating tailored resources, and providing learning support. These opportunities align with the theme of navigating technological advancements, suggesting that educators can leverage ChatGPT for efficient and personalised teaching experiences.

Grassini (2023) emphasises the need for educators to navigate the evolving AI landscape through continuous professional development. However, the critical discussion extends to the collaborative aspect. The collaborative nature of learning communities becomes paramount to share insights, strategies, and ethical considerations. Collaborations provide a platform for educators to collectively address challenges and ensure responsible AI implementation. The dialogue should extend beyond mere adaptation to active participation in shaping the ethical use of AI tools in education.

Grassini (2023) and Rahman and Watanobe (2023) advocate for continuous professional development and collaborative learning communities. Vargas-Murillo et al. (2023) accentuate the demand for ongoing training programs. The critical discussion extends to the collaborative nature of AI implementation, emphasising the collective responsibility of educators, institutions, and policymakers to shape the ethical use of AI in education.

The work of Iqbal et al. (2022) and Su and Yang (2023) touches upon educators' reservations and the need for ongoing training and collaboration.

A critical lens would scrutinise whether these studies effectively navigate the educational landscape's dynamism. Including how well they address the demand for continuous professional development and the creation of collaborative learning communities in the context of AI integration.

Individualise: Personalised Interactive Learning and Real-time Support

Generative AI, particularly ChatGPT, has emerged as a significant force in tailoring education to individual student needs, providing personalised, interactive learning experiences, and offering real-time support. This theme is underscored by various studies and discussions.

Kasneci et al. (2023) delve into the opportunities and challenges of large language models, emphasising the potential for personalised learning experiences. They focus on the competencies and literacies required for educators and learners, aligning with the Symposium on LearningLandscapes' theme of individualising education and addressing potential biases in AI tools. The transformative potential discussed by Sullivan et al. (2023) reinforces the need for AI tools to contribute to inclusivity and equity in education.

The insights from the 9th International Conference on Human Interaction and Emerging Technologies (IHIET-AI 2023) and Qadir (2023) emphasises AI's potential to provide personalised, interactive learning experiences and real-time support. Educators acknowledge AI's role in tailoring educational materials and offering immediate support to students in understanding complex concepts.

While the ACM FAccT paper primarily discusses regulatory frameworks, it indirectly touches on the individualisation of educational content through large generative AI models (lLGAIMs) (Hacker et al. 2023). The challenges highlighted, such as ensuring accurate, unbiased, and safe educational content, resonate with the emphasis on personalised interactive learning experiences from the rapid literature review and the 11th ASSAf Presidential Roundtable (Academy of Science of South Africa 2023).

Smolansky et al. (2023) introduces a workshop focused on equity, diversity, and inclusion in educational technology, emphasising the need for a framework to create and evaluate equitable and inclusive educational technology (Smolansky et al. 2023). This resonates with the individualisation theme, recognising the diverse needs of students and the importance of AI tools catering to various demographic and cognitive differences.

The transformative potential of AI in education is a recurring theme in the webinar (THE Campus, 2023). The panel discusses how AI, including ChatGPT, can facilitate individualised learning experiences. This aligns with the individualisation theme, emphasising the role of AI in tailoring education to individual student needs (Academy of Science of South Africa 2023).

Sullivan et al. (2023) adds a dimension to the theme by highlighting the lack of public discussion on ChatGPT's potential to enhance participation and success for students from disadvantaged backgrounds. The article emphasises that media discussions mainly focus on academic and institutional perspectives, overlooking the transformative potential of AI, including ChatGPT, in facilitating individualised learning experiences. This resonates with the Symposium on LearningLandscapes' emphasis on tailoring education to individual student needs. The findings underscore the importance of acknowledging and addressing the diverse needs of students, ensuring that AI tools contribute to inclusivity and equity in education.

Firat (2023) and Grassini (2023) both highlight the capabilities of AI in tracking individual student performance and providing personalised feedback. This supports the notion that AI can identify specific strengths and areas for improvement, aligning with the theme of individualisation. However, the distinction between individualised feedback and understanding the nuances of each student's individuality remains crucial.

Murad et al. (2023) emphasises ChatGPT's ability to provide personalised responses tailored to the context of the given prompt and user needs. This resonates with the theme of individualisation, highlighting how AI can cater to the specific needs of learners through tailored support.

Rahman and Watanobe's (2023) examination of AI's strength in personalised learning is a crucial aspect. The critical discussion centres on the potential unintended consequences of excessive personalisation. While AI tailors content, there is a risk of limiting students' exploration and independent learning. Educators face the challenge of leveraging AI's capabilities to enhance individual experiences without stifling the broader goals of holistic education. Vargas-Murillo et al. (2023) echo the sentiment, emphasising the need for educators to provide appropriate prompts, considering ChatGPT's limitations and opportunities. The critical discussion focuses on striking a balance, ensuring that AI's personalised learning enhances, rather than constrains, the broader goals of education.

The articles by Bin-Hady et al. (2023) and Su and Yang (2023) underline AI's potential for personalised learning experiences and real-time support. However, critically analysing the level of true individualisation that ChatGPT can offer in education and its impact on fostering a genuinely supportive learning environment would be valuable. The challenge lies in ensuring that AI's personalised learning strategies not only cater to individual needs but also foster independent thinking and exploration, preventing over-reliance on AI-driven content and feedback. This raises questions about the extent to which educators should rely on AI tools for tailoring education and how this impacts students' autonomy and critical thinking skills.

By examining the various perspectives presented in these studies, it becomes evident that personalised interactive learning and real-time support are not without challenges. The potential risks of over-personalisation, limitations in addressing individual nuances, and the need for a balanced approach should be carefully considered in the discourse on integrating AI into education. As educators navigate this terrain, it is crucial to strike a delicate balance between leveraging AI's capabilities for tailored educational experiences and preserving the broader goals of holistic education.

Guide: Assessments Driving Higher-order Thinking and Ethical Use

Assessments were identified as instrumental in guiding students towards higher-order thinking skills and responsible AI use. Educators emphasised the

need to integrate AI into assessments to foster critical thinking while instilling ethical considerations. The review highlighted the role of assessments in not only evaluating knowledge but also shaping responsible AI usage among students.

The ethical dimension of AI's role in assessments is underscored by Yeo-Teh and Tang (2023), who question the appropriateness of listing NLP systems like ChatGPT as authors. This prompts a critical examination of the human-centric nature of authorship, challenging traditional norms. Mhlanga (2023) extends this ethical discourse by emphasising the responsibilities associated with the ethical use of ChatGPT in education, positioning assessments as not just evaluative tools but as ethical gatekeepers.

Dwivedi et al. (2023) and Hacker et al. (2023) contribute regulatory perspectives, highlighting challenges in ethically integrating AI into assessments. They propose frameworks for responsible AI use, emphasising the need for structured approaches within educational contexts. This introduces a critical layer, as regulatory frameworks seek to balance innovation with ethical considerations, fostering a responsible AI integration environment.

The IEEE Global EDUCON paper aligns assessments with higher-order thinking and responsible AI use, presenting AI as a catalyst for cultivating critical thinking skills. This perspective accentuates assessments as not only evaluative measures but as tools shaping cognitive abilities. However, the critical discourse should delve into the potential unintended consequences and ethical considerations of using AI to drive critical thinking in assessments.

Considering diverse student needs, Smolansky et al. (2023) expands the ethical discussion. By exploring demographic factors and disabilities in AI-integrated educational tools, it broadens the scope of ethical integration. This inclusivity-driven lens highlights assessments as mechanisms to address diverse student needs ethically, recognising the importance of creating an inclusive educational environment.

Sullivan et al. (2023) bring insights from media discourse, emphasising concerns about academic integrity and AI tool limitations. This lens reflects the initial considerations often rooted in academic and institutional viewpoints, offering a critical perspective on the practical challenges educators face in maintaining academic integrity when deploying AI-driven assessments. Murad et al. (2023) contributes a critical perspective by focusing on the ethical use of AI in assessments. Their discourse emphasises the delicate relationship between the efficiency gains of AI-driven assessments and ethical considerations, addressing the challenge of ensuring responsible AI use among students.

Vargas-Murillo et al. (2023) raise concerns about potential plagiarism, adding an ethical layer to the discourse. Their insights underscore the necessity to guide AI-driven assessments to foster knowledge acquisition while simultaneously addressing challenges related to plagiarism and misuse. This highlights the delicate ethical considerations associated with using AI to assess students.

Su and Yang (2023) offer insights into AI-driven assessments and their role in guiding students toward higher-order thinking and ethical considerations. Their contributions guide the intersection of AI-driven assessments, critical thinking enhancement, and the ethical use of AI tools in educational evaluation.

Moderate: Balancing AI Tools with Traditional Pedagogy

Maintaining a balance between AI tools like ChatGPT and traditional pedagogical methods emerged as a critical consideration. Educators highlighted the importance of using AI as a complementary resource rather than a replacement for conventional teaching approaches. Reaching this balance is essential to ensure that AI augments, rather than supplants, the educational experience.

The ongoing dialogue surrounding the delicate interplay of AI tools and traditional pedagogy (Eke 2023; Haleem et al. 2022; Dwivedi et al. 2023) resonates with the vision of incorporating AI as a supplementary educational tool (Symposium on LearningLandscapes 2023). This accentuates the need

for a and calculated integration, where AI serves as an aid rather than a general replacement for conventional teaching methodologies.

In a convergence of perspectives, both the Symposium on LearningLandscapes' AI for Research and the 9th International Conference on Human Interaction and Emerging Technologies (IHIET-AI 2023) share the importance of treating AI as a complementary tool, rather than a direct substitute for traditional teaching methods. This alignment reinforces the theme of balancing AI tools within the broader educational landscape.

Examining the landscape of AI integration, the discussions within the ACM FAccT paper and Smolansky et al. (2023) contribute to the narrative of maintaining equilibrium between AI tools and traditional pedagogy. Emphasising systematic integration, they delve into the intricacies of addressing challenges and regulatory concerns, reinforcing the theme's core tenets. While the Symposium on LearningLandscapes places emphasis on AI as a supplementary resource, critical insights from Firat (2023) and Grassini (2023) introduce a layer of complexity. They draw attention to AI's potential impact on assessments, raising concerns about accuracy and biases in AI-generated content. These discussions advocate for a balanced approach wherein AI streamlines tasks, but human expertise remains pivotal for ensuring integrity and transparency in education.

Murad et al. (2023) contributes a critical perspective by highlighting weaknesses in ChatGPT, including biases and overreliance risks. This adds depth to the theme of moderation, emphasising the need for balanced integration. Their insights underscore the importance of human involvement to complement AI tools, fostering ethical and effective use in education.

Intriguingly, critical discussions initiated by Grassini (2023) and Crawford et al. (2023) detail the potential resistance educators may harbour towards AI integration. They emphasise the necessity of cultivating a collaborative relationship where AI enhances traditional teaching methods without overshadowing the unique contributions of human instructors.

The conversations prompted by Crawford et al. (2023) and Iqbal et al. (2022) encourage educators to critically assess the depth of understanding required

for balanced AI integration. This introspection prompts educators to reflect on effectively harnessing AI as a supplementary tool while preserving the essence of traditional teaching methodologies. The challenge lies not just in the technological integration but in the strategic and thoughtful synthesis of AI into the fabric of education.

Adapt: Shifting Assessments to a Dynamic Approach

The review identified the necessity to adapt assessments towards a more dynamic approach aligned with the capabilities of AI tools. Educators acknowledged the need to evolve assessment methods to reflect the changing educational landscape. This adaptation aims to harness AI's potential to create more dynamic assessment models, fostering deeper learning and evaluation.

Adapting assessments to the dynamic capabilities of AI tools (Haleem et al. 2022; Dwivedi et al. 2023; Sullivan et al. 2023), exposes a commendable emphasis on the evolving landscape of educational evaluation. However, implementing AI-driven assessments raises practical challenges across diverse educational settings, including differences in resources, infrastructure, and student demographics. Addressing these implementation challenges is crucial to ensure AI-driven assessments do not intensify existing educational inequalities.

Insights from the 11th ASSAf Presidential Roundtable, ICSTW, and the ACM FAccT paper highlight the call for assessments to evolve with AI capabilities. However, while regulatory frameworks are proposed, a critical examination of their feasibility and effectiveness in practice is needed. Enforcing regulations and balancing ethical use with adaptability require careful consideration beyond theoretical propositions.

Collaborative efforts emphasise the adaptability and relationship of AI in education amidst evolving technologies (Smolansky et al. 2023; Symposium on LearningLandscapes 2023; THE Campus 2023). However, critically evaluating the scalability and inclusivity of such initiatives is necessary. It is important to determine whether collaborative learning communities can effectively cater to diverse educational institutions and ensure equitable AI-driven assessment access. Grassini's (2023) suggestion to adapt assessment

practices by including multimedia elements aligns with the adaptation theme. However, understanding potential biases or accessibility challenges introduced by multimedia elements is crucial. An understanding is necessary to ensure AI-driven assessments enhance evaluation processes without introducing new sources of inequality.

Rahman and Watanobe (2023) highlight ChatGPT's potential in supporting research writing processes. However, critically evaluating the reliability of AI-generated content and addressing potential issues with misinformation is crucial. Engaging with the accuracy and validation of AI-generated content is essential beyond focusing solely on potential benefits.

Grassini (2023) emphasises that AI adapted assessment raise concerns about unintended consequences of increased AI use in assessments. A critical discussion is necessary to explore potential ethical dilemmas and challenges associated with AI-reliant holistic evaluations. Harmonising AI tools while maintaining authentic assessments that evaluate students' skills and comprehension should be approached with rigorous ethical considerations.

The studies by Murad et al. (2023), Vargas-Murillo et al. (2023), Kaplan-Rakowski et al. (2023), and Su and Yang (2023) stress the need to align assessments with AI capabilities. However, critically evaluating the effectiveness, potential biases, and ethical implications of AI-driven assessments across diverse educational contexts is essential. High-order engagement with fairness, transparency, and unintended consequences ensures AI-integrated assessments positively contribute to education.

7. Conclusion

For this rapid review of literature, our sources included traditional peer-reviewed articles, as well as less conventional formats for a literature review, such as webinars, symposiums, conference proceedings, and then unconventionally, social media to address the fast-moving nature of developments. To address the question of educators' perspectives reveals a complex interplay of attitudes, perceptions, and concerns, underscoring the need for a comprehensive approach to technology integration in education.

The themes that emerged, such as the necessity for a shift in assessment paradigms, the importance of balance between AI and human expertise, and the critical role of educators in guiding students through AI integration, provided valuable insights into the evolving landscape of education technology.

In the rapidly changing educational environment, the themes of navigation and engagement emerged as crucial, emphasising the need for educators to stay informed and actively engage with AI tools as catalysts for inspiration rather than replacements for human ingenuity. The theme of personalisation underscored the potential for AI to enhance individual learning experiences, but it also raises ethical considerations that need careful navigation.

The ongoing nature of this work highlights the dynamic nature of the intersection between education and AI. As we strive to answer not whether to adopt AI but how, the findings of this ongoing research aim to serve as a guide for educators, fostering an ethical and responsible integration of AI tools. Acknowledging the imperative for higher education institutions to adapt to this evolving landscape, this study contributes to the ongoing dialogue on the transformative role of AI in education.

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