Chapter 7

Perceiving Generative AI through Educators' Eyes: Benefits and Challenges

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Introduction

AI (Artificial intelligence) in education offers a wide range of benefits that can enhance the learning experience for students, streamline administrative processes, and support educators. AI refers to advanced computing systems that process the ability to perform tasks that traditionally require human intelligence. These systems can learn, adapt, correct, synthesis, and use large amounts of text to carry out complex tasks (Popenici & Kerr 2017:2). AI has opened new possibilities and encouraged challenges at all levels of education (Silander & Stigmar 2019:274). Its applications in education are on the rise and have recently received much attention. However, AI is not new and has a long history. The origin of AI can be traced to the 1950s, when John McCarthy arranged a two-month workshop at Dartmouth College in the USA. In the proposal for the workshop, McCarthy was the first person to use the term 'Artificial Intelligence' in 1956 (Kühl, Schemmer, Goutier, & Satzger 2022:2237). Gen-AI (Generative AI) refers to technology that uses DL (deep learning) models to generate human-like content, like images and text, based on

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complex and varied prompts, including languages, instructions, and questions (Lim, Gunasekara, Pallant, Pallant, & Pechenkina 2023:2 of 13). Currently, Gen-AI is at the forefront of leveraging DL models to mimic human-like content.

Since the release of Gen-AI models such as ChatGPT (chat generative pre-trained transformer), Copilot, and Meta AI in 2022, much has been written about their promises and challenges in education. However, most of the research involved literature reviews (e.g., Bozkurt 2023; Grassini 2023; Baidoo-Anu & Owusu Ansah 2023), while not much empirical research on how educators regard and use these tools has been published. For this reason, this chapter is based on empirical research by investigating the world of Gen-AI as seen through the lens of a specific group of educators. The chapter explores and reflects on Gen-AI in education from the perspectives of those at its heart – the educators. It not only presents their perspectives on the diverse benefits and challenges of Gen-AI but emphasises the necessity for a balanced, ethical, and informed approach to harnessing Gen-AI's capabilities. The aim is to pave the way for Gen-AI to complement educators and, in so doing, equally benefit educators and students.

Literature Review

Benefits Related to AI in Education

First, there are several benefits emanating from the use of AI. One of the main benefits is that it can analyse individual student performance and adapt learning materials to address the specific requirements of each student. This personalised approach helps students to learn independently, addressing their strengths and weaknesses. Some AI tools demonstrate the potential for enhancing teaching and learning. Examples include intelligent tutoring systems such as AutoTutor by the University of Memphis and AI Tutor Pro developed by Contact North. These systems can provide personalised feedback to students based on their individual learning styles and paces (Marouf, Al-Dahdooh, Ghali, Mahdi, Abunasser, & Abu-Naser 2024:10). Another technology including personalised learning systems is Pearson's AI learning

tools that can create personalised study plans and tailor educational content to individual student needs. The emergence of adaptive learning technologies has been a focal point in recent research, as these systems can analyse students' prior knowledge and learning preferences to create customised learning paths (e.g., Akgun & Greenhow 2022:431). AI simulation-based learning technologies are another example, such as IBM Watson in Education, which can develop personal assistants and interactive learning environments that simulate real-world scenarios, aiding in different subjects such as computer science. Real-life scenarios can be simulated, allowing skills practice in a safe environment (Dai & Ke 2022:7). These examples not only have the ability to enhance the learning experience by providing tailored educational pathways, but also prepare students for future challenges through adaptive and engaging learning environments.

Additionally, the provision of lesson content is a crucial aspect of education, where AI plays an important role in improving and supporting this process. AI systems can help to create educational content, including lesson plans, presentations, and learning materials that benefit educators (Cassidy 2023). This can save educators time and ensure that content is diverse, engaging, and aligned with curriculum standards (Garvey & Maskal 2020:291). Furthermore, AI applications can assist students in language learning by providing speech recognition, language translation, and grammar correction. This interactive language support can enhance language acquisition (McCombs & Valenzuela 2020:771; Ai, Hu, & Zhao 2024:1). AI can actively involve students and educators in learning through various interactive and participatory methods. Interactive learning platforms powered by AI engage students in dynamic and stimulating educational experiences. These platforms often include multimedia content, simulations, and interactive exercises encouraging active participation. AI can provide instant feedback on student responses with these platforms, helping them to understand concepts more effectively and correcting misunderstandings promptly. What also comes as an added advantage is that AI not only saves time for educators by automating routine tasks but also improves the accessibility of knowledge and information

for a diverse and global student population (Bozkurt 2023:266). Automated assessment systems that use AI to grade student work have been found to reinforce systemic bias and discrimination by favouring dominant ways of thought, knowledge, and language use (Cheuk 2021:831). However, it is important to note that along with the unexpected benefits, challenges cannot be overlooked. The next section discusses the limitations.

Challenges Related to AI in Education

Although the benefits of AI are quite exciting, there are several challenges. Some scholars argue that AI systems can inherit biases from the data on which they are trained. This can lead to discriminatory results, as a lack of diversity in the training data can result in skewed predictions that may disproportionately affect certain groups (Chen, Wu, & Wang 2023:5). Furthermore, it could privilege certain types of culture, knowledge, and perspectives above others (Bozkurt 2023:265). This leads to the conclusion that human touch and empathy may be lacking in purely automated interaction systems. Furthermore, AI lacks EI (emotional intelligence), making it difficult to understand or respond appropriately to human emotions. In certain contexts, human emotions play a crucial role that AI cannot fully replace (Kumar & Martin 2023:1 of 20). On the other hand, ethical concerns may arise if AI is used to manipulate or mislead people in translation services, which often struggle with context, idioms, and language nuances, leading to inaccurate translations (Anderson 2024:4).

The integration of advanced AI systems into education continues to gain momentum, with tools such as ChatGPT standing out for their transformative potential. These technologies use natural language processing to bridge gaps in communication and offer tailored support to both educators and students. Its ability to simulate human-like conversations has sparked interest across educational contexts, offering new pathways for interaction and engagement. In the following section we explore the potential uses, risks, misuses, and opportunities for ChatGPT. This serves as a guide to help educators critically assess the impact this tool may have on education.

An Overview of ChatGPT – its Benefits and Limitations in Education

This section focuses on ChatGPT, a noteworthy progression in NLP (natural language processing) and LLMs (large language models), which has extensive consequences in various aspects of our lives, including education. ChatGPT was launched in November 2022 by the research and development company OpenAI. It is a component of the GPT (generative pre-trained transformer) family of LLMs. Its creation involved a fine-tuning process that integrated both supervised learning and reinforcement learning methods (OpenAI 2024). ChatGPT is designed to possess advanced intelligence, a natural intuition, and the ability to address intrinsic inquiries in a manner that resembles human interaction (OpenAI 2024). Consistent with the explanation provided, ChatGPT is transforming our interactions with technology and setting the stage for a new era of intelligent conversational AI (Ray 2023:138; Rudolph, Tan, & Tan 2023:344: Sullivan *et al*. 2023:37). This advanced AI chatbot has been trained on a vast amount of online textual information and employs DL methods (Kung, Cheatham, Medenilla, Sillos, De Leon, Elepaño, Madriaga, Aggabao, Diaz-Candido, Maningo, & Tseng 2023; OpenAI 2024). As an advanced chatbot powered by an LLM, ChatGPT is capable of creating text that often closely resembles human writing. However, as Baidoo-Anu and Owusu Ansah (2023:58) argue, the use of ChatGPT in education is substantial but should not be regarded as a replacement for human educators. It should be used as a complementary tool to enhance the teaching and learning experience and provide additional support. An advantage is that ChatGPT can support students by generating ideas for research, analysis, assessments, and writing tasks, which could enhance their learning experiences.

Using ChatGPT and various other LLMs in HE (higher education) presents both advantages and challenges, as confirmed by Rasul, Nair, Kalendra, Robin, De Oliveira Santini, Ladeira, Sun, Day, Rather, & Heathcote (2023:45). It is important to recognise possible disadvantages, including the risks of academic dishonesty, bias, the spread of misinformation, and

poor assessment design, which can hamper the development of vital graduate skills and encourage shallow learning (Ray 2023:138; Rudolph *et al*. 2023:344; Sullivan, Kelly, & McLaughlan 2023:37). Nevertheless, it also presents new challenges and complexity, such as the risk of cheating and plagiarism, the ethical and social implications of the use of AI, and the need to adapt curriculum and assessment methods to the new technology (Tlili, Shehata, Adarkwah, Bozkurt, Hickey, Huang, & Agyemang 2023:10 of 24).

As a result, educators and students should be cautious and ensure that they use this technology ethically, dependably, and effectively in academic settings. Educators should recognise both the potential and limitations of ChatGPT and use it wisely and responsibly in their teaching. Additionally, the information provided by ChatGPT may seem credible and well-written but lacks insight and may not be necessarily accurate. Sometimes its credibility is questionable, and it is difficult to establish exactly which portions of the information are factually inaccurate. This can harm the learning experience and decision-making skills of students, as they will rely on it rather than contextualising it in their learning content.

Methodology

Design and Methods

Against the background presented in the literature review, this study aimed to determine how educators experienced the benefits of Gen-AI tools in their respective teaching contexts. Ultimately, the study aimed to provide information that could help educators to integrate Gen-AI tools effectively into their teaching practices, leading to improved learning outcomes. To achieve this, the study adopted an interpretative paradigm which aimed to understand the participants' perspectives and interpret the meaning they derived from their contexts (Kivunja & Kuyini 2017:33). An interpretative paradigm further seeks to understand real-world phenomena and the subjective world of human experiences, in this case, educators' perceptions of Gen-AI.

The participants involved in the study had a unique context, as all of them were educators who were actively teaching while simultaneously pursuing a structured Master of Education programme at an open distance learning university in South Africa. This unique combination of roles and circumstances called for an exploratory case study design, thoroughly examining various viewpoints and aspects within a specific context (Yin 2009:17). It is also intended to provide a foundation for further related research.

The research instrument was an online discussion forum for one of the four taught modules of the structured master programme. The forum was hosted in the university's learning management system, providing an interactive space for students to engage in academic discourse and exchange ideas with the educator and fellow students. Throughout this specific module, students were encouraged to actively participate in a discussion forum after every two study units. The discussion forums consisted of four questions that were specifically designed to test their understanding and application of the knowledge and theory learnt in the study units. Although the discussions were informal in nature, they played a crucial role in determining the year mark of the students. By engaging in these discussions, the students could apply their newfound knowledge to real-life scenarios, which helped them to understand the subject matter better.

During the discussions, students were expected to adhere to certain guidelines. These guidelines included, among others, always demonstrating respect to their educators and fellow students, even if they had different opinions. The students were also required to share their own opinions, avoid plagiarism, and keep their responses between 100 and 250 words. Moreover, students were required to post between eight and 12 responses in total to their educators and fellow students for the four questions over a two-week period.

As part of a study unit on AI in HE, students who were practising educators at the time of the research had to answer related questions. The two questions posted in the discussion forum were the following:

1. Do you use Gen-AI tools in your teaching/training?
2. Share the most important benefits and challenges of using AI tools in your context.

The discussion forum was set up to hide the posts of other students until the first response was received. Data analysis was carried out using a thematic data analysis approach, which typically involves six phases (Braun & Clarke 2012:60-69). The first step is to become familiar with the data and generate initial codes that highlight important aspects. The second step involves systematically coding this data. It is essential to break the data down into meaningful chunks and label them with codes that capture significant features. The third phase involves searching for themes that were then reviewed and refined in the fourth phase to ensure accuracy and coherence. The fifth step, according to Braun and Clarke (2012:68), involves identifying and naming the themes to provide a clear and concise representation of the findings. The last step requires producing a report that reflects the insights we gained from the analysis. De Vos, Delport, Fouché, and Strydom (2011:334) suggest that it is possible that existing literature can be used to compare the data with existing knowledge. In this chapter, we followed this approach and used the available literature to draw meaningful insights from our collected data. During the data analysis, as authors and researchers we first identified the codes and themes separately. Thereafter, we discussed similarities and differences to reach a consensus before collaboratively writing up our findings. The process was conducted manually without the use of AI or other technology tools.

Ethical Considerations

Research ethics is a crucial aspect of any research study as it protects the rights and interests of every individual involved in the research process. It is essential to obtain all the necessary permissions and ensure that no harm is caused to any participant. According to De Vos *et al.* (2011:56), research ethics are moral standards that provide guidance on appropriate conduct towards all participants. In this research study, ethical clearance and permission were obtained from the institution where the study was conducted. Additionally, all participants were asked

for permission to use their data for research purposes, while they were informed that their names and data would be kept confidential. All participants gave their consent, which was essential in maintaining ethical standards throughout the study.

Trustworthiness

Trustworthiness in qualitative research relates to a set of principles that ensure quality, underpinning both rigour in the research process and confidence in the findings (Lincoln & Guba 1985:289). It is not necessary to accomplish this through rigid standards and procedures; rather, it can be done by implementing strategies that enhance the reader's confidence that the results truly reflect the perspectives of the study participants rather than those of the researchers (Lietz, Langer, & Furman 2006:443). It is imperative for researchers to adopt a trustworthy approach to qualitative research to ensure the validity of the findings. Measures of trustworthiness as described by Lincoln and Guba (1985:289), namely credibility, transferability, dependability, and confirmability, were considered to ensure the trustworthiness of the study. Credibility was established through member checking, while a detailed description of the context and participants ensured transferability. Dependability was maintained by providing a clear account of the research process, and the use of verbatim quotes from participants supported the findings, addressing confirmability.

Findings and Discussion

Context and Participant Information

At the time of the research, all participants were registered in a structured master's in education. This programme consisted of four instructional modules and required the completion of a dissertation of limited scope. The specific module used for the purpose of this research was dedicated to exploring the integration of technology in open distance learning. 14 students were enrolled in this module. However, one student did not participate in this specific discussion. In addition to this, three students responded

negatively to the initial question that asked: *Do you use Gen-AI tools in your teaching/training?* As our research aimed to determine the responses of participants who actively used AI tools in their instructional activities, the responses of these three students were excluded from our analysis.

To avoid influencing their responses, participants were not made aware of the purpose of the study until after their discussions. They were mature part-time students and practising educators at different levels of education. Because of the diversity of the group, it was found ideal to get an indication of how educators on different levels use AI in their teaching contexts. Interestingly, there was no significant difference between the different levels or genders. Information about the participants is given in Table 7.1.

Table 7.1: Participant Information

Participants	Gender	Teaching role
E1	F	Primary school teacher
E2	F	Educator in public HE
E3	F	Primary school teacher
E4	M	Educator in public HE
E5	M	Trainer in the public sector
E6	M	Educator in the technical and vocational education and training sector
E7	F	Educator in private HE
E8	F	Educator in private HE
E9	F	Educator in public HE
E10	F	Educator in public HE

Themes and Sub-Themes

From the findings, themes and subthemes emerged. These are presented in Table 7.2, followed by a discussion.

Table 7.2: Themes and Sub-themes

Themes	Sub-themes
Benefits	Individualised 24/7 guidance and support. Provision of lesson content. Simplification of language. Active involvement. Immediate feedback. Time-saving. Accessibility of knowledge and information.
Challenges	Bias. Decrease in human interaction and the lack of EI. Inaccurate information. Overuse of AI. Plagiarism. Data privacy and security.
Possible solutions	Development of AI policies. AI literacy training. Guidelines for responsible AI use. Reduce overreliance on AI. Awareness of AI limitations and biases. Collaboration and peer review.

Benefits

In their responses on the discussion forum, participants shared insightful feedback on various ways in which AI technology has benefitted or could benefit them in their respective teaching contexts. Their responses highlight the numerous benefits and advantages that AI tools can offer educators.

The first sub-theme refers to the fact that AI tools could offer both educators and their students *personalised support on a constant level*, which was regarded as one of the major benefits. One participant (E1) stated:

> *AI can offer individualised guidance by adjusting to each student's particular learning preferences and speed. Students can get assistance and resources outside of usual lecture hours thanks to the 24/7 availability of AI technologies. Chatbots can instantly provide feedback on tasks and queries, assisting my students in quickly correcting their errors.*

This comment highlights the potential advantage of individualised support that is always available to students. This personalised assistance can significantly reduce the burden on educators, allowing them to concentrate on other crucial aspects, such as teaching and social interaction, while simultaneously enhancing the learning outcomes of students (Grassini 2023:6 of 13). The literature also confirms this benefit, which can transform how students acquire knowledge and skills (cf. Akgun & Greenhow 2022; Bozkurt 2023:261). In this regard, participant E2 added:

> *AI tools are available round the clock, offering students the flexibility to seek help or clarification at any time, which is especially beneficial for those with busy schedules or work commitments outside of class. ChatGPT tailors responses to individual student queries. This adaptability allows students to receive guidance that meets their specific needs, fostering a more student-centred learning environment.*

Because Gen-AI tools focus on individual needs rather than following a one-size-fits-all approach, it moves the focus away from the educator to the student. It therefore has the potential to help create a learning experience that is more engaging and relevant. Such an approach can empower students to take more control over their learning. However, with these benefits, it is important to use the tool complementary to traditional teaching and not to replace it (Baidoo-Anu & Owusu Ansah 2023:58), as these tools are not always accurate in their responses. Furthermore, as Bozkurt (2023:267) cautions, educators should always promote the ethical, responsible, and thoughtful use of these Gen-AI tools.

The second sub-theme refers to the potential of Gen-AI tools to provide *lesson content*. These tools can help to brainstorm ideas for lesson topics, activities, and grade levels (Van den Berg & Du Plessis 2023:8). They have the potential to gather information on a wide range of topics and customise worksheets, activities, and assessment tasks to the specific needs of a class or individual students (Saunders 2023).

In this research, the comments focused on the ability of Gen-AI tools to address students' individual needs. As examples, the following responses were provided:

> *Lessons can be designed according to the learners' individual needs whilst providing feedback and guidance in their lessons* (E4).

> *AI systems like ChatGPT can be trained to comprehend each student's unique learning style and preferences, resulting in lesson plans and learning opportunities that are suited to each student's requirements* (E6).

These responses highlight an important and emerging trend in education: The use of Gen-AI tools like ChatGPT, for customisation and enhancing lesson plans. This can be regarded as a significant advancement, making lessons more relevant and engaging for students and transforming the way in which educators teach and students learn (Karpouzis, Pantazatos, Taouki, & Meli 2024:2 of 10).

Although mentioned by only one participant (E2), the third sub-theme is significant because of its transformational potential. Furthermore, literature has mentioned language related AI support to students, such as speech recognition, language translation, and grammar correction (e.g., McCombs & Valenzuela 2020). The simplification of language is a crucial aspect of education in various contexts, such as cases where students are taught in another language than their home language and where students have language challenges. The potential of Gen-AI tools to simplify language is a promising development and may greatly impact students' comprehension and, ultimately, their outcomes. In the response, participant E2 stated:

> *Gen-AI tools can make complex concepts more accessible to students, particularly those who may struggle with language comprehension or have diverse linguistic backgrounds. This accessibility can level the playing field and ensure that all students can effectively engage with the course content. I*

> *often ask my students to use ChatGPT to simplify content if they struggle.*

Participants raised the fact that Gen-AI tools have the potential for *active involvement* as another benefit, which led to the fourth sub-theme. The interactive nature between humans and machines with regard to Gen-AI tools has been mentioned by various authors (e.g., Bozkurt 2023:264; Grassini 2023:6 of 13). It holds huge potential and has already started to reshape the educational landscape as it can provide, among others, personalised responses, immediate access to information, and tutoring, which can lead to a more equitable education system that better meets the needs of all students. Participant E9 stated:

> *AI serves as an interactive tool due to the speed with which it provides solutions to questions or problems presented to it.*

Participant E4 mentioned the motivational nature of the active involvement of Gen-AI tools:

> *Learners can also be actively involved in their learning by asking questions to AI and be kept motivated to learn.*

This comment confirms that the interactive nature of Gen-AI tools can boost motivation because it makes learning more accessible, engaging, and aligned to the specific needs and interests of students.

The fifth sub-theme was related to the potential of Gen-AI tools to save time. This emerged as a strong sub-theme as it was mentioned by most of the participants. Because of its potential to provide responses within seconds, the benefit has been raised by several authors (e.g., Baidoo-Anu & Owusu Ansah 2023:54; Van den Berg & Du Plessis 2023:5). Participants shared the following:

> *It saves time and effort when I prepare tasks to be administered to learners because ChatGPT has information on different topics and disciplines* (E3).

> *ChatGPT helps me improve my teaching and save time. ChatGPT helps me create content, be creative, and solve problems* (E5).
>
> *I think that benefits in my context include saving time by using AI tools to create general writing pieces, such as supportive text for teaching, support for students, test questions and quizzes, rubrics, tips, and suggestions* (E8).

The responses highlight the significant impact of Gen-AI tools such as ChatGPT in educational settings. The consistent mention of time-saving by the participants indicates a broad recognition of this benefit. Beyond saving time, they mentioned improvements in teaching quality, as it assists them in creating content and fostering creativity and problem-solving. The use of AI tools to generate a wide variety of materials, such as quizzes, rubrics, and tips, shows that these tools are not limited to answering questions but can indeed contribute to various aspects of teaching and learning. Some tasks can be allocated to Gen-AI tools, allowing them to focus on tasks that these tools cannot perform.

The final sub-theme was about the capability of Gen-AI tools to provide access to knowledge and information. Although aspects of this sub-theme have been mentioned earlier, it was emphasised by most participants and is therefore discussed here. Participants shared the following:

> *Easy access to information. I do not have to consult many resources or read textbooks with many pages to get the necessary information* (E3).
>
> *This ChatGPT bot is very intelligent. It can handle multiple requests at once. I love the fact that it can write out codes and analyse data* (E7).
>
> *The benefits of using AI tools in my context are that they can serve as an information searching tool. It can provide a basis for facilitators and students to conduct further research on any subject. While it is widely acknowledged that simply copying and pasting information from AI tools is unacceptable, the information it provides can be used as a springing board that directs one to possible helpful sources and to other ideas*

> *provoked by what AI tools would have picked on the subject in question* (E10).

These responses highlight the ability of Gen-AI tools to sift numerous resources, enabling educators to quickly obtain relevant information from one source. This can be particularly beneficial in educational settings where time and access to information are crucial. Furthermore, ChatGPT's ability to handle multiple requests simultaneously, including writing codes and analysing data, illustrates how versatile and powerful Gen-AI tools are. However, as participant E10 mentioned, content created by such tools should not be used as a sole source of information. Nevertheless, it can serve as an initial guide and can direct users to more detailed sources and information. Similarly, Bozkurt (2023:267, 268) highlights the potential of Gen-AI as an advanced educational technology that holds promise for creating knowledge and content, and therefore transforming education. However, he cautions that there may be risks and limitations that require careful analysis and evaluation.

The second theme dealt with challenges when using Gen-AI tools, as indicated by the participants of this study.

Challenges

In responding to the discussion forum question about sharing the most important benefits and challenges of using AI tools in one's context, several challenges were raised. This theme led to several sub-themes, as discussed below.

The first sub-theme related to the responses from participants that Gen-AI tools can provide biased information. This drawback has been emphasised in the literature (Ray 2023; Bozkurt 2023:263; Van den Berg & Du Plessis 2023; Tlili *et al.* 2023:10 of 24), cautioning that information needs to be approached with thoughtfulness and cross-checked with other sources. Below are examples of participants' responses:

> *ChatGPT is an example of an AI model that might inherit biases from the data it is trained on, thereby propagating discrimination and preconceptions* (E1).

> *I am aware of ethical concerns regarding the use of AI, including potential biases in the training data that can lead to biased or discriminatory responses* (E3).

In this regard, Grassini (2023:3 of 13) confirms that Gen-AI tools use vast amounts of data to learn and generate content. These data may not always be objective, and if the training data include any biases, it can affect the accuracy and fairness of the generated content. Therefore, ensuring that the data used to train AI models are as unbiased and diverse as possible, is crucial.

The second sub-theme was based on the responses related to the challenge of a decrease in human interaction and the lack of EI. In this regard, Baidoo-Anu and Owusu Ansah (2023:56) confirm that Gen-AI models cannot replicate the same level of human interaction as a real educator, which can disadvantage students, especially those needing a personal connection with an educator. Participants' responses were as follows:

> *The main concern for using ChatGPT relates to the fact that learners may have a decreased level of engagement and motivation when they interact with the machine as opposed to when they interact with their teachers* (E4).

> *A heavy dependence on AI in the classroom can result in less human interaction, which is crucial for social and emotional growth. Also, AI lacks emotions and empathy, which are critical for offering pupils emotional assistance* (E1).

According to Bozkurt (2023:267), the current Gen-AI tools are lacking EI, which can negatively affect their ability to provide personalised support. This gap in EI needs to be addressed as these technologies should not only provide information but should be supportive and empathetic. Therefore, we must work towards bridging this gap to ensure effective interaction of these technologies with students and provide them with the necessary support.

The third sub-theme referred to the provision of inaccurate information**.** False and inaccurate information is a reality, according to ChatGPT itself. When asked about its possibility

of producing false information, it indicated that because of reasons such as training data limitations, a lack of real-time data, misinterpretation of queries, the complexity and ambiguity of language, and its generative nature, it could produce false information (OpenAI 2024). However, Grassini (2023:5 of 13) predicts that false information will probably be mitigated in future as, according to the author, ChatGPT 4 already shows fewer errors compared to the previous version. However, using Gen-AI tools such as ChatGPT critically is important and supplement their responses with verification from reliable sources. In this regard participants stated:

> *AI-generated responses may not always be accurate or contextually appropriate. Inaccurate information or guidance could mislead students, leading to misunderstandings or incorrect application of concepts* (E2).

> *So far, I've discovered that if you don't know your material or subject, ChatGPT can mislead the facilitator* (E5).

> *One should also check that there is not an overreliance on the tool to create assessments. If you ask ChatGPT to create questions on a certain level of Bloom's taxonomy and an NQF*[1] *level, it does so, but you still have to check for accuracy and correctness* (E8).

According to the findings of Ray (2023:138) and Sullivan *et al.* (2023:37), it is important to recognise the possible adverse effects, including the dissemination of false information, which may obstruct the cultivation of vital graduate skills and encourage superficial learning. Therefore, it is crucial to take proactive measures to mitigate such risks and ensure that the information provided is accurate.

The fourth sub-theme referred to the overuse of Gen-AI tools. Interestingly, from the 10 participants, eight indicated

1 NQF (National Qualifications Framework) levels refer to levels of complexity in learning and qualifications. Each NQF level is designed to reflect the relative difficulty, depth, and sophistication of the knowledge, skills, and competencies that a student is expected to demonstrate for a specific qualification.

that an overreliance on technology is a significant challenge in their respective contexts, making it the most crucial challenge in the findings. In addition, Grassini (2023:3 of 13) highlights the potential risk of students becoming overly dependent on Gen-AI tools. However, instead of prohibiting or suppressing the growth of Gen-AI, as some institutions do, Grassini suggests that educators accept and integrate it wisely and effectively in their teaching. Nevertheless, this may require a well-planned, strategic, and balanced approach that prioritises teaching students independence rather than being dependent on these technologies. The following examples serve as participants' responses:

> *Overuse of AI tools may make students dependent on technology for learning, impacting their capacity for critical thought and problem-solving. There's a risk that students may use these tools as a crutch rather than developing independent learning abilities. Some end up being too lazy to search for information* (E1).

> *Significant concerns revolve around the fact that students may simply ask AI tools to complete assessment tasks and submit them for grading without doing meaningful research and work themselves. This then means that they will not learn anything but that AI tools will generate responses for them to the questions that the facilitators would have posed. Linked to the aforementioned is the concern that AI tools may cause students to be passive thinkers who just take information as it is given to them without critically processing it* (E10).

The risk of plagiarism when using AI tools in education, as raised by participants, led to the fifth sub-theme. In this regard, authors such as Tlili *et al*. (2023:10 of 24) confirm that it is easy to copy and paste information provided by Gen-AI tools without referencing the technology, which leads to plagiarism and may breed laziness among students. Grassini (2023:5 of 13) adds that plagiarism has become a significant worry because of the extensive use of digital tools. Using someone else's work without proper acknowledgement indeed raises serious questions about the academic integrity of the educational system. What makes

the situation even more complicated is that, in some cases, AI detection tools struggle to identify cases of plagiarism (Grassini 2023:5). Adding to the complexity of plagiarism, was a comment from participant E3, as a school teacher:

> *Plagiarism is a challenge, as I fear that my learners might be using AI tools for copying since they are allowed to bring phones to school. There is no mechanism put in place to check plagiarism on written content.*

The above concern implies that students might copy information provided by Gen-AI tools on their mobile phones and write it down as their own. Participant E8 implied that most educators are aware of this challenge:

> *I think my concern is the same as everyone else's concerns, of which the most important one is plagiarism.*

The last sub-theme relates to ethics and revolves around the critical issue of data privacy and security. Although only participant E6 raised the challenge, the seriousness of this challenge needed a separate sub-theme and thus a discussion. When ChatGPT was questioned about the origin of the data it provides, it revealed that it extracts data from various sources, including websites, open books, and other educational resources that form its pre-existing knowledge base. Additionally, it uses real-time data, such as the weather or sports events and incorporates texts it has been trained on, along with information provided by users during ChatGPT conversations (OpenAI 2024). This means that in an educational context, educator and student data are at risk of being used for misuse of data, noneducational purposes, and without acknowledgement. This calls for an urgent need to address data privacy and security concerns. Confirming this, participant E6 stated:

> *The usage of AI chatbots raises serious ethical concerns since it may lead to the gathering and use of student data without the students' knowledge or consent.*

Although this was not part of the question, some participants offered possible solutions to these concerns, and this led to the third theme in this study.

Possible Solutions to some of the Concerns

The first solution provided, relates to relevant policies as well as the need for AI literacy training:

> *Academic institutions must be proactive in their use of AI tools for both facilitators and students. Institutions must harmonise their policies and address AI. First, it needs to be clear whether AI tools are permitted or not. Also, if they are not permitted, it should be communicated to students what will happen if a student is discovered using it, and if it is permitted, what exactly is permissible. Training facilitators and students is imperative on how to utilise AI tools and discussing the benefits and drawbacks of employing AI tools* (E5).

The next two possible solutions provided, indicated that both these participants were using ChatGPT and encouraged their students to also use it. Both participants implied that they provided guidelines on how their students should use Gen-AI tools in their classes:

> *Practically, I advise my students that I am one of the first in our institution to use and publish on ChatGPT so they should learn from it and not copy information from it verbatim for me. That puts them on their toes* (E9).

> *I believe we can somewhat prevent overreliance on AI. Various teaching techniques could be employed, including brainstorming sessions, group discussions, and problem-solving activities. This strategy can aid in developing students' critical thinking and decision-making skills. I like to raise awareness of the biases, mistakes, and restrictions that AI technologies may have. Students are also encouraged to collaborate with each other, participate in peer reviews, and offer criticism. This will foster a sense of connection and engagement that AI systems cannot imitate. This will clarify*

to students the significance of utilising AI technologies as a supplement, not a replacement (E8).

Conclusion

The purpose of this chapter was to report on educators' perceptions of the benefits and challenges of Gen-AI tools in their respective educational contexts. Based on an interpretative paradigm, we used an exploratory case study design to analyse the responses to questions on the discussion forum of a master's module in education. The study provides valuable insights from educators who actively engage with Gen-AI tools. The most prominent benefits identified were that these digital tools can provide individualised, 24/7 guidance and support and lesson content. They also shared that these tools can assist with simplifying language, a unique benefit that could not be found in previous studies. Furthermore, Gen-AI tools provide opportunities for active involvement. They save time and make information and knowledge accessible. The participants' main challenges were that the technologies could provide biased information, lead to decreased human interaction and lack EI. Additionally, it could provide inaccurate information and has a risk that students can over-rely on these tools. They further identified the risks of plagiarism and data privacy and security as challenges. Lastly, some participants provided guidelines on how these technologies could be approached and how the risks could be mitigated. These guidelines focused on the need for policies and AI literacy training, setting an example and providing guidelines to students in the use of Gen-AI. An additional important point raised was that Gen-AI tools should complement, and not replace, the human elements of teaching and learning, ensuring a wholistic and inclusive educational approach.

While the study provides important insights, it comes with limitations that must be considered. The main limitation of this study is the small number of participants and specific context in which they were studied. It is possible that if a different sample had been used, the findings could have been different. Additionally, the study relied on a single instrument and self-

reported data, which may not have provided a comprehensive understanding of the responses. As a result, more empirical research with the same and different groups and different instruments could lead to a deeper understanding of how Gen-AI tools can be used to benefit all its users equally, ultimately leading to improved learning outcomes.

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