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RESEARCH ARTICLE

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Exploring Challenges and Benefits of AI in Higher Education- A Samoan case

¹Dr Rasela Tufue; ²Dr Saili Aukuso**Abstract:** The rapid integration of technology in classrooms globally is unmistakable. However, this raises a crucial question: Can a machine truly replace a teacher? How can technology instill essential human values needed to thrive in society, let alone the critical skills graduates require to succeed in the workplace and beyond? This qualitative study aimed to explore views of practicing teachers and teacher trainers on the benefits and challenges of AI in higher education and assess AI's potential to replace or supplement human teachers. Data was gathered via email, through open-ended questionnaires from nine (9) practicing teachers and nine (9) teacher trainers. The findings revealed that AI offers substantial benefits, such as improved access to information, immediate feedback, personalised learning experiences, and support for educational resources, but it also presents challenges. These include emotional deficits, potential misinformation, and limitations in fostering critical and creative thinking about AI. Similarly, learners' over-reliance on AI-generated information can lead to cognitive deficits. Thus, the findings advocate for a complementary approach where AI enhances, but does not replace, human teaching. This balance ensures a holistic educational experience.**Keywords:** AI-generated, artificial intelligence, challenges, benefits, higher education teacher, role**1.1 Introduction**

The rapid integration of technology in classrooms globally is unmistakable, especially in artificial intelligence (AI). Artificial intelligence is the future element of technology, designed to make the lives of individuals easier. This rapidly growing field can potentially transform every facet of our social interactions. AI has already started introducing innovative teaching and learning solutions in education- the latter are currently being tested and refined in various contexts (Bostrum, 2017). Although AI seems to be a promising technological educational tool, it raises crucial questions: What are the challenges and benefits of AI in education, especially in higher institutions like universities? Can AI genuinely replace a teacher? How can technology instill essential human values needed to thrive in society, let alone the critical skills graduates require to succeed in the workplace and beyond? These are questions this paper



aims to discuss based on empirical data.

1.2 Study context

At the National University of Samoa, where we work as teacher trainers, the first time we ever heard of the GPT Chatbots concept was in early 2024, when our university introduced the concept to facilitate the teaching and learning process. However, preliminary observations suggest that few educators within our teacher training institution are familiar with or knowledgeable about AI. For example, whenever the AI concept would crop up in conversations amongst our colleagues, more than half of our colleagues seemed to have limited knowledge of this phenomenon. On the contrary, students we work with seem to have a much better idea of AI chatbots, given their frequent usage of their technological devices to access information. Although lecturers can applaud this technological support, it raises some concerns about plagiarism. For instance, the question that challenges educators is: How much of the work students submit for their assessments is their own, and how much is AI generated? It has been noted that some students' work is not consistent with their in-class performance. Hence, although AI seems beneficial, it also raises many challenges. In Samoa, limited research has been conducted on the significance and challenges of AI in education, hence the aim of this paper.

The paper explores the views of practicing teachers and teacher trainers regarding the benefits and challenges of using AI (particularly chatbots) in education for both students and educators. Additionally, it seeks to determine the role of AI in the classroom and whether AI can fully replace the teacher. By understanding these perspectives, we can gain insights into how AI can be effectively integrated into the educational landscape, addressing its potential and limitations.

2.1 Literature Review

Historical Context

The development and evolution of AI in education have been significant over the past few decades. Initially, AI applications focused on computer-assisted instruction, providing essential educational tools and resources. In recent years, advancements in AI have led to the creation of intelligent tutoring systems, adaptive learning platforms, and AI-driven educational tools that enhance the learning experience (Luckin et al., 2016). These technologies have transformed how students interact with educational content, offering more personalised and engaging learning experiences.

AI and AI Chatbots defined

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems, encompassing learning, reasoning, and self-correction (Holmes et al., 2019). AI chatbots are software programs that mimic human conversation through text or voice interactions. Artificial intelligence technologies, such as natural language processing (NLP) and machine learning, are chatbots that comprehend and respond to user inputs in a human-like manner (Holmes et al., 2019). They are versatile tools capable of handling various tasks, including answering queries, offering technical support, engaging in casual dialogue, and providing personalised recommendations. AI chatbots are widely used across different industries, including customer service, healthcare, and education, to enhance user experiences and boost efficiency (Wang et al., 2022).

AI in education

AI technologies, such as chatbots, learning analytics, and adaptive learning systems, are increasingly integrated into higher education to enhance teaching and learning processes (Holmes et al., 2019). Universities use AI to provide personalised learning experiences, support administrative tasks, and improve student performance. For instance, AI-



driven platforms can analyse student data to identify learning gaps and provide tailored feedback, improving academic performance. AI seems to offer some significant benefits to the teaching and learning process.

Benefits of AI in education

Research has identified several benefits of AI in education, and one of the benefits relates to personalised learning. AI can customise experiences to meet individual students' needs, helping bridge learning gaps and promote deeper understanding (VanLehn, 2011). Personalised learning is seen as one of the most significant advantages of AI, as it allows students to learn at their own pace and style. Similarly, AI is beneficial for administrative efficiency. For instance, AI can automate routine administrative tasks such as grading, scheduling, and tracking student progress, freeing up time for educators to focus on instruction and student interaction (Luckin et al., 2016). This increased efficiency can lead to more effective classroom management and better student outcomes. The literature also indicated the critical role AI plays in enhancing engagements. For example, AI technologies, including virtual reality (VR) and augmented reality (AR), can create immersive and engaging learning environments (Bacca et al., 2014). These tools can make learning more interactive and enjoyable, increasing students' motivation and participation. In addition to these benefits, AI have been found to have the ability to provide support within the inclusive education environment. For example, AI can provide assistive technologies for students with disabilities, making education more accessible and inclusive (Holmes et al., 2019). An example of this is noted in AI tools' support for students with special needs. For instance, AI can offer speech recognition for deaf students or text-to-speech for visually impaired students, ensuring all learners have equal educational opportunities.

Challenges of AI in higher education

Despite its benefits, the integration of AI in education presents several challenges. For example, one of the issues is about ethical consideration. AI raises ethical concerns, such as data privacy, algorithm bias, and potential misuse of students' information (Williamson, 2017). Hence, ensuring that AI systems are transparent and fair in addressing these ethical challenges is crucial. An additional challenge concerns data privacy. For instance, according to Slade and Prinsloo (2013), protecting the privacy and security of student data is a significant consent as AI systems often rely on large amounts of personal information. Hence, schools and educational institutions must have robust data protection measures to safeguard students' information.

Researchers Zhai, Wibowo, and Li (2024) also highlight the implications of students' overreliance on AI dialogue systems, mainly those embedded with generative models within educational research contexts. Although beneficial, there is concern over the potential erosion of critical cognitive skills due to ethical challenges such as misinformation, algorithmic biases, plagiarism, privacy breaches and transparency issues. Similarly, Gao et al. (2022) also noted a concerning trend where users over-rely on AI dialogue systems and accept their generated outputs and hallucination without validation. This over-reliance is intensified by cognitive biases where judgments deviate from rationality and heuristics or the use of mental shortcuts, leading to uncritical acceptance of AI-generated information. Xie et al. (2021) found that relying too heavily on unverified AI outputs can lead to errors in classification and interpretation.

Another challenge concerns the notion of equity. For instance, there is a risk that AI could exacerbate existing inequities in education if not implemented thoughtfully. For example, students in under-resourced schools may not have the same access to advanced AI technologies as well-funded students (Holmes et al., 2019). Addressing these disparities is essential to ensuring that AI benefits all students equally. Moreover, the issue is related to change resistance, a common challenge within the literature on change. This can occur when individuals resist using AI as a new, unfamiliar concept. For example, educators and institutions may resist adopting AI technologies due to a lack of understanding or fear of job displacement (Zawacki-Richter et al., 2019). Therefore, implementing AI is impossible without adequate training and support for educators to help mitigate these concerns and facilitate the effective



integration of AI in education.

Comparing AI and classroom teachers

Now that we have highlighted some benefits and challenges of AI, we will look at some of the literature that focuses on the role of AI compared to the human classroom teacher. One of the questions asked at the outset of this paper was whether AI can be a substitute for the classroom teacher. The common findings in the literature point to the complementary roles AI and teachers bring to the teaching and learning process. For example, Wang et al., (2022) conducted a systematic review of 74 empirical studies on AI in science education. The review highlighted AI's pedagogical benefits but concluded that AI tools are generally complementary to human teachers rather than replacements. Additionally, Holmes et al. (2019) examined how six science teachers used an AI-enabled inquiry intelligent tutoring system (Inq-ITS) and their perceptions of AI integration. The study found that teachers recognised AI's potential benefits but encountered various challenges. Teachers viewed AI as a supportive tool that enhanced traditional teaching methods rather than a replacement for human educators. Williamson and Eynon (2020) provide an overview of research on teachers' use of AI applications and machine learning methods. They highlighted AI's opportunities for improved planning, implementation, and assessment of teaching but also discussed significant challenges, including ethical considerations and data privacy concerns. They concluded that while AI holds promise for supporting teachers, it is not considered a replacement for the unique qualities and skills that human teachers bring to the educational process. Overall, the literature underscores the complementary roles that AI and the human teacher play in teaching and learning.

Gaps in the literature

While there is growing research on AI in education, there are still significant gaps, particularly in small island developing states like Samoa. This study aims to fill this gap by investigating perceptions of educators and students in Samoa regarding the use of AI in higher education. Understanding their views and experiences can provide valuable insights into the unique challenges and opportunities of implementing AI in diverse educational settings.

The following research questions guided the study:

- What type of AI Chatbots are you well familiar with
- How do you utilise AI Chatbot as a student or learner?
- How do you utilise AI chatbots as a trainer?
- What are the benefits of AI Chatbots for educational purposes?
- What do you view as limitations of AI Chabots for educational purposes?
- What are your views concerning AI Chatbots replacing the teacher in the classroom?

3.1 Methodology

This study employed a qualitative case study approach to gain detailed insights into participants' views and experiences concerning AI in education. Neuman (2014) noted that qualitative research is about depth rather than breadth. Researchers draw upon qualitative methods to develop a deep understanding of a phenomenon experienced in a particular setting rather than draw broad conclusions about a particular aspect of human behaviour.

Purposive sampling selected respondents are likely to yield appropriate and helpful information (Kelly, 2010). Rai and Thapa (2015) describe purposeful sampling as a non-probability method where researchers choose participants based on specific criteria, including specialised knowledge of the research topic. The participants for this study were specifically selected based on their presumed learning and teaching experience using AI. The sample was selected



from nine (9) teacher practitioners involved in their postgraduate studies within the faculty of education at the time of the research. They were selected based on their presumed knowledge of and utilisation of AIs in their studies as learners. It should be noted that given their dual role as both a classroom teacher and a learner, a number of these participants responded from both a teacher's and a learner's perspective. In addition to teacher practitioners, nine (9) teacher trainers were purposively selected for their perceptions of AI. Learning the trainers' views about the phenomenon being studied is important. For this study and in the presentation of findings, teacher practitioners are coded as teacher learners (TL) while teacher trainers are given the code (TR)

Five open-ended questions in a questionnaire document were used to collect the data. In this manner, the participant's voice can be heard and coordinated with descriptive data (Denzin & Lincoln, 2011). According to Hyman and Sierra (2016), questionnaires should be designed in a format that participants can easily understand and respond to. Open-ended questions offer respondents an opportunity to provide a wide range of answers. One set of questionnaires was developed and distributed to the participants.

We used the thematic analysis approach by Miles and Huberman (1994) to analyse data. The following steps were followed: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes and defining themes. The themes were derived from analysing participants' responses to the research questions concerning the predetermined categories that guided the analysis. Data was analysed according to the benefits and challenges of AI for teacher learners and teacher trainers and the comparable roles of AI and the teacher. The following section will present these findings in Tables 1, 2, and 3.

4.1 Findings

We present the findings under the following headings: AI benefits, AI challenges, and complementary roles of AI and teachers in education.

In Table 1, we will present findings about the benefits of AI in education

Table 1. Benefits of AI in Higher Educational Settings

Themes	Subcategories	Definitions
Benefits for the teacher learner	Accessibility /availability	<i>Easy access to information</i>
	Immediate feedback / Perpetual preparedness	<i>AIs instantaneous response Readied support at all times</i>
	Language development	<i>Writing and language skills</i>
	Flexibility	<i>Ability to learn despite the location, time and learner's pace</i>
	Improved learning	<i>Simplification of concepts</i>
Benefits for the teacher trainer	Accessibility	<i>Easy information access</i>
	Innovating ideas	<i>Development of new ideas</i>
	Improve English writing skills.	<i>Academic writing enhancement</i>
	Training resources	<i>Online resources availability</i>
	Differentiated instructions	<i>Tech-enabled instruction</i>

AI benefits for teacher-learner

Accessibility

Findings (Table 1) indicated one of the benefits of AI relating to ease of access to information as noted by these teacher learners:

As a learner, I believe that AI can only help feed us ideas on specific topics and break them down into more straightforward language (TL2).

Students of a younger generation benefit from AI Chatbots in terms of accessibility to different types of writings, which they can apply in assessments /assignments (TR7)

Immediate feedback/ perpetually prepared

Participants also highlight another benefit of AI in connection to the swift and timely nature of the response provided by AI:

The advantages and benefits of AI chatbots are that they can immediately answer any questions or queries I have... (TL2)

AI systems are available around the clock, providing tailored assistance with assignments such as essays, clarifying challenging ideas, and responding to inquiries. This constant availability allows students to learn at their preferred speed and alleviates the already scarce time of teachers. In addition, AI aids students find answers to unspoken questions and assist them in a variety of ways, such as by asking for assistance with paper preparation or developing a tailored learning plan(TL5)

In addition to AI's ability to provide instant feedback, almost all participants applauded AI's readiness to provide the support learners needed at any time.

As a learner, I think one of the advantages of AI chatbots is their availability. AI chatbots are available 24/7 when a learner needs assistance with an assignment. A learner will get an immediate answer to questions, access resources, and clarify thoughts outside of school hours(TL4)

Language development

AI was also noted for its ability to assist in the development of a learner's language as noted here:

As a student, I use Grammarly to assist with writing, spell checks and grammatical errors. This is an excellent tool in this way because at the end of an assignment, I learn new things, and it comes helpful for the next assignment(TL3)

I believe that AI chatbots are a good tool that can be used to learn and aid learning. For instance, AI can be used to help the student learn the correct sentence structure and grammar as English is not our first language(TL2)

Flexibility

The flexible manner in which AI can be used by the student to access information and to learn regardless of time and location was also noted:

AI offers numerous advantages and benefits for students. One such benefit I have observed is its ability to give students continuous support whenever required and from any location. (TL5)

An advantage of AI chatbots for teachers is that they can create or collect information for a certain topic and give it to students to study. A teacher can also use AI chatbots to create assignments and tasks for students that connect to a topic or unit they are teaching. (TL4)

Improved learning

This trainer shared what she perceived to be the benefits of AI for the learner, which in turn helps the trainer herself. For example, extra support learners receive from AI can help ease the work for the trainer herself:

Even though I am not familiar with its use but one of my friends shared with me some advantages this Chabot has on educational purposes, such as, it helps students get some sense of information about any research topics or issues, it gives a simplify background of what a students needs, it helps inform students of some information. (TR1)

The use of AI was also applauded for improving students' academic learning:

Information from AI will provide the students with ideas on how to create their reflections on issues. It will also confirm to the students information they are doubt with, and will also help create some sense of confidence with the students to paraphrase and use own ideas to create essays and response to issues and research (TL9)

AI benefits for educators

Accessibility

One of the most significant advantages of AI to educators lies in its easy-to-access element, as noted by the following comments:

Fast way to get information and help you arrange thought to explain a particular topic to a short notice circumstance (TR4)

AI is easy to access and saves me time. For example, AI chatbots are available anytime, which is helpful when I have enough data or internet access. It also saves the teachers' time by assisting them with grading, planning, etc. However, teachers need to review their responses to ensure alignment with our cultural context and beliefs (TR8)

The most significant advantage of AI for me is the ability to provide me with the information instantaneously and whether that information is reliable is another story, It is the easiest and fastest way to access information and whatever information I require I search for it in Copilot a type of chapbot that is on our university PC's (TR6)

My understanding is based on the definition of an AI chatbot, and it has given me the confidence to think critically about its usefulness as a tool to use in research based on a particular topic. Based on what I found from my search on AI chatbots, I get views from different research scholars using AI. (TR7)

Reduce teacher load

Moreover, several trainers viewed AI as helpful in checking students' English grammar. This is seen as a huge help for most trainers, given that a number of students have problems organising ideas in English:

These AI tools can correct grammar, syntax, and semantic issues in the English language, as well as check for plagiarism in students' assessments (TR8)

Provision of training resources



The importance of AI as a means to provide trainers with training resources was also a notable benefit:

Google search is what I mostly use to search information and data for my work, especially when I need to clarify or ask for simple information about a topic in maths that can be used to make sure my student teachers can understand a particular concept in our maths curriculum **TR9**

Speaking from her teaching perspective, this teacher indicated AI's value in supporting her teaching. When planning activities for students, AI provides her with a quick response to students' queries.

As a teacher, AI chatbots are pretty helpful for quick activities for advanced students in class to maintain classroom management. Sometimes, when a child asks a question you may not have been ready for, AI chatbots can provide you with a quick answer to respond to the child rather than leaving the questions hanging **(TL6)**.

The adaptive features of the programme are another benefit that can be evolved from Google search. The affordability feature can be another benefit. We can become an expert with the information we can get from it, i.e we can improve our teaching service when we search for simple information, and the student's response also improved a lot **(TR9)**

Table 2. Challenges of AI in Higher Educational Settings

Themes	Sub-categories	Definitions
Challenges for the teacher-learner	Intellectual inhibition	<i>Limits thinking capacity Development of passive/lazy learners, dependent mindset, overreliance on AI,</i>
	Unreliable information	<i>AI can be misleading</i>
	Social isolation	<i>AI limits social skills.</i>
	Inspirational deficit	<i>AI lacks emotions to inspire learners.</i>
Challenges for the teacher trainer	Data privacy	<i>Lack of data protection</i>
	Authenticity verification Cheating / Plagiarism	<i>Student cheating</i>
	Unreliable information and Historical unawareness	<i>Misleading information, Limited knowledge of historical ideas</i>
	Limited knowledge/understanding of AI	<i>Lack of inspiration for personal development</i>
	Resistant to change	<i>Educators lack the desire to learn new tech.</i>

AI challenges for teacher-learner

Findings about AI (Table 2) reveal several challenges connected to learners and trainers.

Intellectual inhibition

Most teacher-learners see AI as a mental inhibitor. That is, it can diminish the learners' capacity to use their cognitive skills given their reliance on the machine to think for them:

As learners, AI chatbots limit our ability to think for ourselves. It only makes us lazy learners who do not want to study and research specific topics. Once we learners rely on AI, it can incapacitate our brains limiting our thinking ability (TL1)

This teacher adds her concern over learners' overdependence on machines to provide all the answers, which deprives them of the opportunity to develop intellectually.

One of the significant disadvantages or limitations of AI that I have observed relates to students' increased



reliance on technology. In saying this, most students turn to AI to complete assessments without using critical thinking. Additionally, it might hinder the cultivation of critical thinking and problem-solving abilities in students, as they could become reliant on AI systems to provide them with answers and solutions (TL5)

Another teacher shared her frustration on students who rely on the machine to think for them, leading to cognitive deficit:

A significant disadvantage of AI is that it makes the human brain lazy and relies on a machine to think for it. As a teacher, I have experienced the irritation of receiving AI-generated work. Sadly, the students using this tool do not produce ideas identical to those of their submitted work. Some do not know how to pronounce the words used in their work because they are AI-generated. This creates a gap between work submitted and what they know... they let AI create and write their work for them, which does not help because they have no understanding when asked about their work submitted (TL3).

A disadvantage of AI chatbots for learners will be over-reliance. Students rely heavily on AI chatbots to provide them with answers to their questions without making the effort to face people, read books, research, and get out of their comfort zones to interview, survey, etc, to find answers to their questions (TL4)

Some trainers also share their sentiments concerning the challenges of AI as they pertain to learners:

...it will encourage students to be dependable on these sites for educational research and studies...It will also limit the cognitive skills of students; it will provide students with the same ideas shared by the site regarding an issue being researched. Another disadvantage is that it only makes students lazy, for students will not use one of God's important gifts, the mind! (TR1)

Another trainer also raised a similar view about individuals' laziness in using their God-given brains.

From a trainer's perspective of the challenges for AI, it will develop an 'AI dependency syndrome' for students and any individual. That is, students and individuals will depend totally on AI to do the learning for them, hence may inhibit mental capacity that God provided (TR6)

Unreliable information

Several participants also highlighted the issue related to the unreliability of information provided by AI:

For one, it is untrustworthy as some information it provides may be inaccurate or repetitive. AI chatbots are primarily general in their information i.e., a simple question may result in a complex response. Also, AI chatbots have limited information that may not be able to assist in eras or years prior to its set date of information stored (TL6)

AI sometimes provides incorrect or biased answers. I recall asking a question I already knew the answer to, only to receive an incorrect response (TL7)

Misleading information can become a norm if not well researched and carefully maneuvered(TR9)

Social isolation

Another challenge of AI, according to some teachers, was connected to the issue of social isolation. For example, the more time learners spend learning from a machine can impact their social skills:

Students will lose the opportunity to interact with real people, which will help develop their social skills to communicate with people directly. So, they go to AI chatbots as their comfort zone to ask questions and find

solutions to their problems. The machine provides them with answers that can not solve the problems they are facing in real life(**TL 4**).

Inspirational deficit

Some teachers also indicated that AI do not have genuine feelings and cannot inspire and motivate the learners as real teacher does:

As a teacher, a disadvantage of AI Chatbots would be the lack of motivation to boost students to learn and be inspired. A teacher's enthusiasm, humor or encouragement can spark interest and motivation in students. AI chatbots may be reliable and efficient, but they lack genuine emotions to inspire learners when they feel like giving up and want to quit or stop learning(**TL4**)

AI cannot understand feelings or connect with students as a teacher does. There is also a lack of emotional connection - AI cannot understand feelings or connect with students as a teacher does(**TR8**)

Data privacy

One of the concerns regarding AI-generated work relates to how safe one's data is from prying eyes:

Data leakage can become a disadvantage, i.e. confidentiality of sensible information might be breached and wrongly interpreted (**TR9**)

AI challenges for trainers

There have also been challenges according to trainers which include the following.

Authenticity verification

According to educators, one significant challenge is verifying the integrity of students' work, as noted by these comments.

The disadvantages are when people copy and paste the whole idea from AI Chatbots and use it as their own, ... (**TR4**)

Plagiarism is when the educator does not know how much a student has contributed to their assessments. Our university has yet to have a reliable system to track plagiarism (**TR6**)

I heard that AI can write essays for students, and that can be a disadvantage; now we cannot tell whether the work is the actual work of the students or the AI (**TR2**)

Unreliable information

Another notable challenge related to AI is the issue of reliability. About half of the participants indicated that not all information provided by AI is accurate or reliable:

I experienced a couple of times that not all information produced by AI is correct.

For example, at one time, I tested it by asking it to provide information on a research that I am well familiar with, and I was shocked when it came up with the wrong information. I decided there and then that one need not rely on information provided by AI and that one has to go back to the original research or article for evidence (**TR6**)

AI Limited knowledge

Some teachers and trainers also indicated the limited knowledge AI has. That is, AI does not provide every information that is required:



AI is limited to what is uploaded to its digital brain; it cannot sum up the knowledge and intelligence of the human brain or work or information that has not been entered or uploaded (TL3).

Limited Context Understanding - AI struggles to grasp cultural or personal details about specific topics or individuals (TR8)

AI cannot provide any contextualised information or data about where I am from, e.g. for the faa Samoa culture (TL2)

Resistance to Change

One of the issues that emerged from a couple of trainers in connection to AI and technology relates to learning complications. That is, for these trainers, trying to grasp an understanding of how to utilise new technology can be very complicated and off-putting leading to frustration as noted by this trainer:

...I am so sorry, but I am not a computer technology person.. I am not very interested in IT due to all the hassle. I only know the basics, even the Moodle. I am not very good at it (TR5)

Table 3: Comparative Capacities of AI and Human Teachers in Higher Education

Theme	Subcategory	Capacity of AI	Capacity of Human Teachers
Preference and Emotional Support	Authentic Interaction	Limited	High
	Emotional Support	Limited	High
	Role Models	None	High
	Emotional Deficit	High	Low
	Human Experience and God given Intelligence	Limited	High
Cultural and Contextual Sensitivity	Cultural Sensitivity	Limited	High
	Behavioral Management	Limited	High
Critical Skills and Personal Development	Critical Thinking	Limited	High
	Creative Development	Limited	High
	Holistic Development	Limited	High
Technological Assistance and Limitations	Information Interpretation	High	Limited
	Supportive Role	High	Limited
	Programmed Responses	High	None
	Inflexibility	High	Low
	Supplementary Tool	High	Limited
	Classroom Management	Limited	High
	Individualised Teaching	Limited	High

Findings (Table 3) regarding AI's capacity to replace teachers in the classroom revealed four significant themes, each assessed as either high or low based on data analysis. These themes include preferences, emotional support, cultural

and contextual sensitivity, critical skills and personal development, and technological assistance and limitations. Each theme was evaluated to determine how well AI could perform compared to human teachers, highlighting areas where AI excels and falls short.

Preferences and emotional support

This theme shows a strong preference for human teachers over AI in educational settings, highlighting the unique and irreplaceable qualities that AI lacks and that human teachers bring to the classroom, such as authentic interactions and genuine care and emotions from human teachers, as noted by these comments:

A teacher is human and can understand human feelings and emotions, but men make AI to help improve living conditions, and health and safety initiatives. A Human brain is a God given gift for any human being. This makes us unique from other things that God created. Even though AI is presumed intelligent, a human brain is the most advanced technology that God created for men to rule, make their own decisions and decide their fate (**TR 9**)

As a teacher, I know what I bring to the table that an AI chatbot cannot. I can relate to the children, as I was once a child, I can relate to them as students, I once was a student, I can relate to them as a mother, care for them, sympathise with them, take care of them when they are unwell, make decisions for the safety of the child based on what I see and feel. Would an AI chatbot be able to do that? Can AI apply a band-aid on a cut when a child is hurt, or put a wet cloth on their forehead when they have a fever or feel unwell? (**TL3**)

As a learner, I highly disagree with AI replacing teachers. I prefer face-to-face teachers or realistic teachers to learn from. AI is programmed; therefore, it only works as it was programmed. Real teachers, on the other hand, give authentic senses that help learners to effectively learn in terms of knowing that teachers do care about them (**TL1**)

This trainer added:

There is no way AI can replace a human person with a God-given brain to operate. AI does not have actual human emotions like a real person. They cannot teach significant moral values that are required by a human being to operate in a society and to make society a better place to live (**TR6**)

The other vital quality about teachers is role modelling, which AI lacks:

These Chatbots cannot compare to the role of a teacher. A teacher is more than a source of knowledge. Teachers are guides and motivators; most of the time, they are role models for the students they teach (**TL4**).

I do not think AI Chatbots can replace the role of a teacher, given the fact that the teacher can go on explaining just about anything and make various and relatable examples in order for the students to learn and understand(**TL2**)

No, ... teaching should stay traditional because AI Chatbots are not compassionate towards students; AI chatbots cannot stop a class so that the students gain concertation. AI chatbots do not know how to translate into Samoan when a student needs the Samoan explanation (**TL8**)

Cultural and Contextual Sensitivity

This theme addresses the challenges AI faces in adapting to diverse cultural needs and the importance of human teachers in managing these aspects:

For Samoa, a country with strong cultural values and beliefs, I do not see AI teaching me about these values. As a learner, I would not want AI Chatbots to be my teacher. Because AI Chatbots are just machines that



humans have created to assist learners with resources that they need as they are learning (TL4)

Teaching is viewed as a sacred calling, and the teacher's responsibility is to nurture the child's mind:

As a teacher, I would not want AI Chatbots to replace my responsibility and calling as a teacher or educator. Being a teacher is a very sacred calling because it deals with what is in the minds of the students (TL4)

The theme also emphasises the crucial roles of the teacher to manage students' behavior due to trusting relationship between the teachers and students:

We not only teach them to achieve academically, but most of the time, we deal with their behaviors and problems that others cannot see and know. Most students trust their teachers more than their parents. They will open up to us with their problems and fears and share things happening in their families. So, AI Chatbots can never replace our responsibilities because students can never share their feelings with technology (TL4)

I would not prefer students under my care nor the children of Samoa to limit their capabilities to technological applications. The laziness of the child stems from the performance of the teacher (TL6)

Critical skills and personal development

I would disagree with AI chatbots teaching my child. Why? An AI Chatbot is a machine; although it is so called intelligent, it does not have feelings. I want my child to feel bonded to her teacher, learn to trust, show her emotions, and interact in her social circle and classroom. An AI Chatbot cannot do that (TL3)

AI chatbots cannot replace teachers. While they help answer questions, simplify information, provide ideas and correct/check information, AIs lack the human qualities teachers bring to the classroom. Teachers connect with students emotionally, understand their learning needs, and inspire them to grow. Teachers also teach critical thinking, creativity, and social skills, which AI cannot do. They guide students morally and emotionally, helping them become well-rounded individuals. AI chatbot tools only work within their programming and often fail to adapt to cultural or personal situations (TR8)

While AI can assist teachers with tasks like grading or planning, it cannot replace the relationships, trust, and mentorship that teachers provide. Teachers are essential for both academic and personal development in ways AI can never achieve (TR8)

Although AI can help with some aspects of teaching and learning, I believe it cannot completely replace the role of a teacher. I would highly prefer having a teacher instead of AI for these reasons: While AI can supply knowledge and track progress, it cannot fully provide emotional support, which can significantly improve a student's learning experience in the classroom. Teachers also play an important role in developing critical thinking, creativity, and problem-solving abilities (TL5).

Technological Assistance and Limitations

While AI is a valuable tool in the educational landscape, its role remains that of an assistant rather than a replacement. This theme highlights the supportive functions of AI and its dependence on programming

AI never listens to the user's instruction to perform...it can never replace the classroom teacher. AI can provide support for teaching and learning (TR3)

AI cannot replace the teacher physically, e.g., some information that the AI will provide will always need the teacher to explain and interpret (TL9)

My understanding of AI is that it is a computer-designed tool that can assist students and teachers. However, it should not remove the teacher from their place as a facilitator. For Samoa, AI can never replace the teacher



(TR2)

Additionally, AI is limited in assessing and addressing individual students' needs:

I do not think that AI can replace the teacher in the classroom. For example, all students have different needs; they need the teacher to facilitate their learning. AI chatbots do not provide particular types of assessments to assess students' strengths and weaknesses (TR7)

Overall findings in this theme indicate that AI can never replace the value of the classroom teacher but can supplement teachers by providing support such as the teachers' classroom instructions. Findings also highlighted that more than fifty percent of teacher trainers in this study have insufficient knowledge of AI Chabot's, as revealed by this participant:

I know little about AI and am unfamiliar with utilising it in any educational program. As an educator, it is a new phenomenon, and more research is needed on this topic (TR 7)

Types of AI chatbots participants utilise

One of the questions deals with the type of chatbots that participants are familiar with and the manner of utilisation. Findings revealed that only a few trainers compared to more teacher learners have some AI knowledge, and they use the following AI:

The only AI chatbot I am familiar with is Generative AI. When I am having trouble starting an essay or any other writing, Generative AI often provides insights to assist me. However, I have never used Generative AI for essays because I have observed that it does not help with critical thinking (TL5).

I am only aware of one, which is Chat GPT. It is a valuable tool in class as it allows me to generate activities based on the students' learning needs. The language of the Samoan curriculum is too complex, so I often used Chat GPT to simplify its context so that I could know exactly how to prepare for a lesson. As stated before, this AI chatbot may be helpful but often generates inaccurate information. Not only do I seek help from it, but I also have to go through it again to check whether the information and vocabulary used are suitable for the child based on their reading and comprehension skills (TL6)

These trainers indicated using some of these chatbots:

I am familiar with AI tools such as Google Bard, Duolingo, Proofreader, and Plagiarism Checker. I use them to edit/check lesson ideas, assessments, quizzes, simplify complex topics, etc. They also provide quick feedback and extra learning resources for students. For instance, I ask them for feedback on student work, and they respond with numerous suggestions for improvement. (TR8)

I used the copilot that is installed on my office PC (TR6)

The findings reveal a balanced perspective on integrating AI in education, highlighting its benefits and challenges. AI provides notable advantages, such as improved accessibility to information, immediate feedback, and supplementary support in administrative and instructional tasks, enhancing the overall learning experience. However, it also presents significant challenges, including emotional deficits, inflexibility, and potentially disseminating unreliable information, which limit its effectiveness in dynamic classroom environments. When comparing AI to human teachers, the study underscores that while AI can significantly aid educational processes, it cannot replace the essential roles of human teachers. Human educators excel in providing authentic interactions, emotional support, and cultural sensitivity and fostering critical and creative thinking skills, which are crucial for holistic student development. Thus the findings advocate for a complementary approach where AI enhances but does not replace human teaching.



4.1 Discussion

The study aimed at exploring teachers' and teacher trainers' views about the benefits and challenges of AI in higher educational settings and to find out whether AI could replace the human teacher. This section provides a discussion of the findings.

The findings highlight both the opportunities and challenges presented by the integration of AI in education. On the positive side, AI offers substantial benefits for learners by providing easy access to information, immediate feedback, and the ability to personalise learning experiences (Holmes et al., 2019). This flexibility allows students to learn at their own pace, regardless of time or location, and supports the development of language and writing skills (Williamson & Eynon, 2020). Additionally, AI simplifies complex concepts, making them more accessible and improving overall learning outcomes (Wang et al., 2022). AI provides valuable support for teachers by streamlining access to educational resources, fostering the development of innovative teaching strategies, and enhancing writing skills (Holmes et al., 2019). It also offers tools for differentiated instructions, allowing educators to tailor their teaching to the diverse needs of their students. Furthermore, AI is a valuable supplementary tool, aiding in information interpretation and providing continual support to teachers and learners (Williamson & Eynon, 2020).

However, the study also identifies significant challenges associated with AI in education. One primary concern is the potential for AI to limit critical thinking and promote dependency among students, leading to a passive learning mindset (Holmes et al., 2019). In the same vein, Zhai, Wibowo and Li (2024) argue that although AI is beneficial, there is a challenge concerning the erosion of critical cognitive skills due to ethical challenges such as misinformation, algorithmic biases, plagiarism, privacy breaches and transparency issues. Floridi and Cowls (2019) also highlight the challenge concerning the reliability of information provided by AI, as there is a risk of disseminating misleading or inaccurate data. Moreover, the emotional and social aspects of education, such as developing social skills and inspiring and motivating students, are areas where AI falls short (Williamson & Eynon, 2020). Data privacy is a critical concern, with the need for robust protections to safeguard student information (Slade & Prinsloo, 2013). Teachers also face challenges in verifying the authenticity of student work and combatting academic dishonesty facilitated by AI tools (Gao et al., 2022). Additionally, there is a resistance to change among some educators, who may lack the desire or ability to integrate new technologies into their teaching practice (Holmes et al., 2019).

Findings concerning whether AI can replace teachers reveal a strong preference for human teachers over AI in providing authentic interaction and emotional support. Human teachers excel at building meaningful relationships with students, serving as role models, and offering emotional support that AI cannot replicate. This is supported by literature emphasising the importance of teacher-student relationships for effective learning (Holmes et al., 2019). However, the study also highlights several limitations of AI, including its emotional deficit. AI's programmed responses lack the spontaneity and adaptability of human teachers, making it less effective in dynamic classroom environments. These limitations are consistent with concerns raised in previous research about the constraints of AI in replicating the nuanced roles of human educators (Wang et al., 2022).

Despite these limitations, AI is recognised as a valuable supplementary tool in education. It can assist with information interpretation and support various administrative and instructional tasks. However, AI cannot fully replace human teachers, especially in areas requiring emotional and cultural sensitivity. These findings align with studies that advocate for the integration of AI to enhance rather than replace human teaching (Williamson & Eynon, 2020).

These findings underscore the need for a balanced approach to AI in education, where the strengths of AI are utilised to enhance, rather than replace, the essential human elements of teaching and learning. By addressing these challenges, educators can better harness AI's potential to create a more effective and engaging educational environment.



5.1 Conclusion

This study explores the perceptions of practicing teachers and teacher trainers concerning the benefits and challenges of using AI in educational settings. The findings underscore the significant benefits of AI in improving learners' writing skills and learning as a whole. Additionally, the support for trainers in terms of work overload reduction, such as grading and marking students' assessments and resource production. These benefits notwithstanding, some concerns were highlighted concerning inhibiting cognitive skills, which resulted from learners' overreliance on AI-generated information. Findings also highlighted that AI should not be fully trusted to provide reliable information as it cannot consistently supply reliable information. Findings also strongly emphasised that AI can never fully replace the classroom teacher but can only play a supplementary role.

Limitations

Some limitations of the study are worth noting. First, the limited sample of eighteen participants is inadequate to fully understand the studied phenomenon. Additionally, the focus of the study was on AI in higher institutions; hence, a more inclusive approach considering various educational levels would be a consideration in the future to provide a more robust and comprehensive analysis of AI-generating systems.

Recommendations

Policymakers need to establish robust data privacy guidelines to protect student information. Institutions like our university should use AI systems that are transparent and explainable. This will help educators and students understand how data is used and ensure trust in the technology. Educators should be trained to use AI tools and interpret AI-generated data effectively. This training should include understanding the ethical implications and limitations of AI. There is also a need to establish mechanisms to monitor and evaluate the impact of AI on education continuously. This includes ranking students' progress and addressing any adverse outcomes promptly.

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