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Research Article

Exploring Learner Perceptions of AI-Driven Chatbots in a Zimbabwean Higher Education Context

Fungai Mushonga[1], **Andrew Mangena**[1]

[1]Department of Science, Mathematics and Technology Education, National University of Science and Technology, Bulawayo, Zimbabwe

Abstract
Artificial intelligence (AI) has found its way into higher education institutions through rapid advancements in technology. Zimbabwe's Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development (MHTESITD) adopted Heritage-based Education 5.0 for the digitalisation of operations and curricula in Higher Education (HE). This has put pressure on institutions to adapt and seek ways of accelerating the AI-driven digitalisation of curricula and activities. Currently, there are ongoing dialogues and debates on the ethical and societal implications of adding AI into the curriculum. The purpose of the study was to investigate the perceptions of learners and intentions to adopt and use AI-chatbots in a higher education institution (HEI). The learner's preferences were explored using a qualitative research approach within an interpretivist paradigm. Semi-structured interviews were conducted in the pilot study to test the validity of the questions, and an online open-ended questionnaire was used to collect primary data that was thematically analysed. Ethical considerations such as privacy, consent, credibility, and trustworthiness were ensured in the study. Analysis of results revealed that participants would comfortably increase their use of AI-chatbots on condition that the HE institutions align plagiarism regulations with ethics, ensure data privacy, accuracy, and security in learning and teaching. The relevance of this study shows how learners have adopted AI technologies while leaving the HE institutions behind in the digitalisation of operations and curricula. These findings can be used in active participation in policy debates and considerations for inclusive, effective, and ethical adoption of AI-chatbots in HE.

Keywords: Artificial Intelligence, Chatbot, Higher Education, Learner Perception

✉ Correspondence
Andrew Mangena
andrew.mangena@nust.ac.zw

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1. INTRODUCTION

As institutions of HE attempt to adjust to the increasing change in technology and AI tools, it becomes a necessity to explore the various implications of AI chatbots in higher learning (Dempere et al., 2023). The development of ChatGPT in 2022 brought new ways of student assessments and research, although it raised issues of privacy, academic integrity, and ethical concerns (Chukwuere, 2024). There is a research gap in peer-reviewed pedagogical literature on learners' perceptions of the usage of chatbots in HE. Education is the core area for AI applications, but there are few studies that determine the usage of chatbots by learners in HE, particularly in the Bulawayo Province of Zimbabwe. Henceforth, it is vital to consider the opinions of the learners and their assessment of the capabilities of AI chatbots for pedagogy, as well as their inclination to use the chatbots, because it will help to determine how these technologies can be adopted in higher education institutions.

The emergence of AI has resulted in the need to develop new corresponding policies to govern its use. The Global AI Law and Policy Tracker provides a very general overview. A number of Privacy Enforcement Authorities (PEAs) provide guidelines in using AI, particularly in Canada, the US, and the UK, which include plans of action, compliance issues, and guidelines (IAPP AI Governance Centre, 2024).

Lakshmi and Majid (2022) state that Educational Technologies have found their way into schools and higher education institutions through Information and Communication Technology (ICT), enabling the education systems worldwide to adapt to changes. AI technologies in the form of chatbots present new possibilities for education and ultimately enhance learners' performance.

According to Cheng and Wang (2023), the United States of America, the United Kingdom, and China established national AI strategies and policies to project the future of AI development within education and its important role in national development. However, despite strong policy advocacy and the mobilization of public resources, educational institutions continue to encounter both internal and external barriers that impede the effective adoption of AI (Wang & Cheng, 2021). Prior research has made efforts to address issues related to effective technological development and integration.

In the United States, numerous studies have examined the application of AI technologies in higher education (Chauncey & McKenna, 2023), while others have concentrated on developing theoretical frameworks to effectively guide the integration of personalized chatbots in classroom settings, thereby supporting educators and researchers in advancing educational practices (Lin & Chang, 2023). In the United Kingdom, the majority of existing studies have primarily focused on investigating the effects of adopting AI-based educational technologies on university students' course satisfaction (Rodway & Schepman, 2023), reviewing different methods and tools devoted to the design of chatbots, use, and challenges in the education field (Aleedy et al., 2022). In Switzerland, Sonderegger and Seufert (2022) considered the pedagogical implementation of chatbots in education. According to Aktay et al. (2023), there are many studies on the use of AI-based chatbots in education (Kim & Park, 2017; Shin & Shin, 2020; Kim & Han, 2021). However, there are few studies reporting specifically on learners' perceptions and satisfaction with chatbots at tertiary institutions.

According to UNESCO (2021), a general observance of AI governance in Africa showed increased AI policy initiatives, primarily national AI strategies. In 2024, the African Union (AU) set up the African Union (AU) Continental AI strategy, with the intention of reaching technology optimization. For countries without existing AI regulations, the African Union AI-Policy established an AI framework to ensure consistency in Africa. According to Davis et al. (2023), Uganda became the first country in East Africa to develop a national strategy on AI, while Rwanda became the first to adopt a national policy. However, despite this framework, in 2021, only six countries (Algeria, Benin, Egypt, Mauritius, Rwanda, and Senegal) developed stand-alone, clear AI strategies (African Union, 2024).

In Kenya, Bii et al. (2018) investigated teachers' attitudes toward the use of chatbot technology for instructional and learning purposes, whereas Onyalo (2022) sought to develop a chatbot that handled student queries. In Lesotho, Ayanwale and Molefi (2024) explored the factors influencing undergraduate learners' inclination to embrace chatbots for educational purposes. Studies in South Africa focused on the use of ChatGPT in Higher Education (Tarisayi, 2024), understanding the impact of ChatGPT on plagiarism and scholarly writing (Singh M., 2023). Very little is known about learners' perceptions and satisfaction with chatbots.

Zimbabwe started implementing a number of initiatives to promote the use of ICT in education in the late 1990s (Methembe & Beach, 2022). Later, the country engaged in many projects such as the School's Computerization Programme launched in 2000, the first National ICT Policy in 2005, the Presidential e-Learning Programme of 2011, Zimbabwe's Education Sector Strategic Plan of 2016-20, and the Electronic Ministry Application Platform introduced in 2016 (Nhema & Zinyama, 2016; Dondofema & Shumba, 2018). In 2016, the government published the 2016 Zimbabwe National Policy for Information and Communications Technology (ICT) as well as the Education Sector Strategic Plan that reiterated the government's desire to provide access to high-quality and relevant education to all children (Nhema & Zinyama, 2016). In 2021, the government approved the National e-Learning Strategy for schools that complemented traditional learning forms and advocated education on the use of Information Communication. Mangena et al. (2025) also highlighted the important role of AI in education by emphasising it as a necessary microcredential needed to upskill individuals who need AI-related skills. The following sub-research questions guided the study:

1. Which Hardware and Software resources are used in AI-Enhanced Chatbots
2. What are the experiences and perceptions of learners in using Chatbots

3. What are the Challenges of learners regarding the use of Chatbots?
4. How do ethics, policy, and regulations guide the use of Chatbots in higher education?

1.1. Literature Review

Chatbots have become widespread due to the extensive use of instant messaging programs and the app-based models (Carayannopoulos, 2018). Thus, AI chatbots are becoming popular and very common in messaging apps on smartphones. As technology continues to evolve, leveraging advanced hardware and software resources will be necessary for developing more sophisticated and responsive conversational agents capable of meeting the growing demands of end-users. In relation to institutions in higher education, various software requirements need to be taken into consideration in order to ensure that the chatbots are effective, user-friendly, and secure (Khalid & Alharbi, 2022). As HE institutions continue to embrace digital transformation, leveraging AI-chatbots is critical to enhancing student engagement and streamlining administrative processes.

Chatbots are increasingly being adopted to enhance student interaction in today's technology-driven environment, where communication and many activities are highly dependent on online platforms (Okonkwo & Ade-Ibijola, 2021). Students utilize these systems to pose questions, obtain responses, and receive personalized academic support (Hiremath et al., 2018). Thus, chatbots are used to help maximise student learning abilities, achievement, and quick access to educational information (Wu et al., 2020). According to Garcia Brustenga et al. (2018), chatbots surfaced in the 1960s by simulating a patient and psychoanalyst having a discussion.

Due to advancements in technology, the creation of modern Chatbots followed, such as SmarterChild (Molnar & Szuts, 2018), Amazon Alexia, Apple Siri, IBM Watson, Google Assistant, and Microsoft Cortana (Reis et al., 2018). Since 2016, chatbot development has expanded rapidly, leading to the emergence of diverse AI-based chatbot systems designed for industrial applications (Okonkwo & Ade-Ibijola, 2021). Hence, AI chatbots are everyday applications used in helping and providing solutions in different areas of application. According to Chodhury et al. (2022), the impact of chatbots in higher education is in enhancing student engagement, improving administrative efficiency, and personalizing learning experiences, in addition to providing valuable data insights. Chowdhury et al. (2022) indicate that institutions employing chatbots have seen increased student satisfaction and retention rates.

Most importantly, AI-chatbots have offered the possibilities of assisting students with disabilities by providing alternative ways to access information (Meyer & Smith, 2022). This inclusivity ensures that all students feel supported as well as valued in the educational community. The traditional education system faces various problems, such as overcrowding in classrooms, a lack of individualized attention, and the challenge of keeping up with the rapid advancements in information technology (Sakunde & Kiradat, 2024). Chatbots are becoming alternative options or solutions to address some of these issues in an effective manner.

The incorporation of artificial intelligence (AI) chatbots into educational settings has enabled institutions to transform the ways students learn and engage with information (Chingwaro & Muchowe, 2024). The most important characteristic of a chatbot is its availability for learners on their mobile devices. AI-powered chatbots can deliver instant assistance by responding to questions, offering explanations, and supplying supplementary learning resources (Labadze et al., 2023). Consequently, chatbots hold considerable potential to improve learning outcomes by facilitating timely support, rapid information retrieval, and enhanced student motivation (Okonkwo & Ade-Ibijola, 2021). Furthermore, an exploratory study by Tlili et al. (2023) revealed that students favored the use of conversational agents in learning activities because they provided a more engaging and interactive learning experience. Hence, chatbots help in increasing student involvement in educational activities.

In addition, AI-chatbots assist students with homework and research questions, offer step-by-step solutions, fostering problem-solving abilities as well as guiding students through complex problems (Lo, 2023). Thus, a chatbot is useful in a manner that it mentors the student and offers them help within and away from school. AI-enhanced chatbots are also used in improving research, creating new educational

opportunities, and time-saving with regard to administrative support for teachers (Al Ka'bi, 2023). Thus, chatbots can help teachers and learners overcome educational hurdles.

While AI chatbots offer numerous benefits, there are identifiable challenges in their adoption. These may include users' attitude, programming and technological factors, insufficient evaluation, ethical concerns, and data integration issues (Chatterjee & Bhattacharjee, 2020). Despite the worries about AI accessibility, current policies are due to the absence of clear standards. Therefore, AI utilisation may surpass the capacity for effective governance, potentially resulting in abuse.

Some students are enthusiastic about their use, while teachers are sceptical. Some educational institutions are recognizing their relevance, while others are more cautious towards adopting them in modern educational settings (Labadze et al., 2023). Ethical concerns on AI, including bias, discrimination, reinforcing inequalities, and the possibility of misuse. Thus, implementation depends on how users perceive and adapt to the use of chatbots. If users find tools complex or difficult to navigate and utilise, it could result in reluctance or scepticism towards engaging with the tool (Cherniak, 2024).

2. METHODS

The study adopted an interpretivist research paradigm to explore learner perceptions of AI-Enhanced Chatbots in a HEI in Bulawayo. Junjie and Yingxin (2022) assert that interpretivist research aims to explore how particular social groups or individuals construct multiple realities and assign meaning to them, as well as to demonstrate how these interpretive frameworks help explain their behaviour. The researcher focused more on the experiences and opinions articulated by the learners under study. The researchers employed a qualitative methodology. Qualitative research prioritises human experiences, encapsulating these with their contextual frameworks (Ugwu & Eze, 2023). This methodology aimed to comprehend the phenomena within its contextual setting, allowing the researcher to connect profoundly with participants (Eyisi, 2016). The study concentrated on occurrences that necessitated the adaptability of qualitative research to identify emerging themes.

2.1. Research Design

A case study was employed to effectively explore individuals' views and knowledge on the AI Chatbots through seeking reasons leading to their usage (Hunter, McCallum, & Howes, 2019). The Technology Acceptance Model (TAM) and the Innovation Diffusion Theory were used for the identification of aspects influencing the adoption and use of AI-chatbots in Bulawayo, Zimbabwe.

2.2. Participants

The study focused on first-year and second-year honours undergraduate students enrolled in a computer science education program at a tertiary institution. The study involved 60 students (participants) as the case and population. Participants were purposively selected, 12 participants from the program. The reason for the choice of the population was based on two different reasons. The program included a lot of technological learning for the students, both with coding and the implementation of software. Furthermore, due to the program's IT content, there was hope that the students were more open to education technology than students from non-IT programs. The participants made up a sample that included a mix of first-year and second-year students, with 2 participants in their first year and 10 participants in their second-year of the computer science programme. Two participants (16.7%) were first-year students in their second semester, five participants (41.7%) were second-year students in their first semester, and five participants (41.7%) were second-year students in their second semester. Creswell and Poth (2018) noted the importance of selecting the right sample to ensure the research questions were adequately answered. Despite considerations for gender sensitivity, 4 male students (33.3%) and eight female students (66.7%) participated in the study. The age range of the participants constituted one participant aged between 23 and 25 years old, and eleven participants were aged 29 years old and above. The participants who were chosen shared some common characteristics so that their interaction would happen to an optimum level and avoid situations where a participant withdraws or fails to complete an open-ended questionnaire. According to

Sandelowski (2000), purposeful sampling is the most suitable approach for descriptive qualitative research, as it enables researchers to recruit participants who are capable of providing information that directly addresses the objectives of the study.

2.3. Research Instruments

A pilot study was utilised by the researchers to enrich the trustworthiness of the research that was conducted by assessing the appropriateness of the instruments (interviews and focus groups), as well as the recruitment strategy and participant involvement. The initial phase also assisted in estimating the needed duration and calling attention to ethical implications associated with the research structure. Based on four different categories, the interview schedule included 14 questions: perceived value (four questions), perceived usefulness (three questions), perceived ease of use (three questions), and intention to adopt (four questions). Each of the six individual interviews took place on separate days, each lasting from 30 minutes to 40 minutes, totaling approximately four hours of interview time. Another focus group session consisted of six participants and lasted up to 40 minutes. The focus group instrument included 11 questions, organized into seven categories, such as performance expectancy (two questions), effort expectancy (two questions), social influence (two questions), perceived risk (one question), motivation (two questions), price value (one question), and behavioral intention (one question). Primary data were gathered through an online open-ended questionnaire through Google Forms for the primary study. This was a questionnaire consisting of 14 items divided into eight categories: student characteristics (two items), perceived usefulness (two items), perceived ease of use (one item), performance expectancy (two items), perceived risk (two items), motivation (three items), behavioral intention (one item), and intention to adopt (one item).

2.4. Procedures

As part of the initial study, which consisted of 12 students from the study group, half of the students took part in semi-structured individual interviews, and the remaining six participants took part in a focus group interview. Participants agreed to work within the time and location of the interviews with the researchers. They also prepared the requisite parts beforehand, like a writing pad, a pen, and a voice recorder. All interviewees consented to recording the interviews. These recordings were used subsequently to transcribe the interviews and to analyze the data collected with reference to the research aims. All the interviews were transcribed word for word. To confirm further details among some participants, and to provide more details on the inadequacies of any explanations or to add as much information as possible about the phenomenon, follow-up interviews were conducted after reviewing the recordings. As facilitator and moderator, the researchers asked open-ended questions according to a defined group conversation frame, providing room for the participants to interject with each other in order to respond to their own statements as they noted down and audio taped the discussions. The facilitator listened and took notes, while the moderator was mindful to steer the discussion to what was relevant. All 12 participants completed an online open-ended questionnaire (Google Forms) in the primary study. This questionnaire was completed in 30 to 40 minutes after completing the instructions for each student. After completing their responses, they returned their forms to the researchers. The researchers also remained patient when waiting for answers; they had to take into account potential issues arising from connectivity to the Internet.

2.5. Data Analysis

Following Braun and Clarke's (2006) framework for thematic analysis, the study explored the richness and complexity of the dataset to gain a complete picture of the underlying factors. As Terry and Hayfield (2021) emphasize, thematic analysis (TA) is a powerful qualitative approach, enabling researchers to identify themes or patterns of meaning within the data based on their interpretation of the data. TA on open-ended questionnaire responses was used to assess data accuracy in retrospect. This required cleaning and deleting extraneous content, correcting errors, and performing member verification for consistency and integrity (Bryman, 2016). During the familiarisation stage, close examination of the material is required, such as reading and re-reading the participants' responses, note-taking, and capturing first impressions (Bailey, 2008). Using Atlas.ti, the author then detected frequently used keywords and systematically coded

the data, and this structure of information led to insight into the participants' priorities and to the structure of the dataset for further analysis. Thematic frameworks were subsequently vetted using multiple rounds of review and external validation and further developed for contextual relevance. Amendments were performed with the help of Excel transcripts, with written sections identified for their significance and grouped using a hierarchy of codes to determine the relations between the codes. The process enabled the emergence of subthemes as themes of broader significance that were semantically linked to the data. They also grouped codes to identify preliminary themes, which were refined through subsequent use of the data. This process was complemented by discussions with peers and a supervisor to help guard against single-coder bias. Hence, subsequent additions and recomposition of themes established that the themes accurately represented the dataset. Finally, the overarching themes were formulated through subthemes, creating thematic structures that addressed research questions in full.

3. RESULTS

The results are organised into the following themes: learner experiences, perceived usefulness, perceived ease of use, performance expectancy, perceived risk, motivation for adoption and usage, perceived benefit, and intention to adopt.

3.1. Learner experiences

The learners were questioned about their background on the use of AI-chatbots to establish the ways the students are utilising the AI-chatbots and their initial thoughts towards AI-chatbots. This was essential in order to determine individual differences or similarities, and their attitude towards AI-chatbots. Most participants (P) highlighted that they have used AI chatbots before for completing assignments and other educational tasks. The following were the responses to that effect:

P2 – *"I have used it at university in my undergraduate programs."*

P3 – *"Via WhatsApp for teaching purposes."*

P4 – *"When researching for an assignment or topic presentation."*

P6 – *"During lectures and for writing assignments."*

P10 – *"Writing assignments."*

P11 – *"Assignment researching."*

Participants were also asked how frequently they made use of AI-chatbots in their studies. All the participants appeared to be regular users as they stated that they used the AI chatbots often. Their responses were as follows:

P1 – *"Often, Literature search."*

P3 – *"Very frequent, to research for assignments and to gain insights on a course."*

P6 – *"I use it almost all the time, even before conducting presentations during lectures, I use it very often."*

P8 – *"Use it always in my research and assignments."*

P12 – *"Regularly, 1-4 times a week."*

3.2. Perceived Usefulness

Participants were asked about their first impressions and thoughts on the usefulness of AI-chatbots. Although some participants stated weaknesses in the usefulness of AI-chatbots, the majority of the participants' responses were inclined towards AI-chatbots being helpful, reliable, and efficient.

P1 – *"They are good literature search applications."*

P2 – *"I thought it was an innovative technology that would enable me to be resourceful in my studies. I found it to be really helpful in giving me a guide to exploring topics and answering assignment questions."*

P3 – *"They are very helpful in giving immediate feedback. However, not all answers provided are correct."*

P4 *– "It was frustrating as I had less knowledge on how to structure questions to get the response I required."*

P6 *– "Very efficient, especially if one is writing an assignment or when one doesn't understand a certain topic, and it is helpful when one requires a quick response."*

P11 – *"AI is quite helpful, though it promotes laziness."*

Participants were further probed for their perception of the usefulness of AI-chatbots in comparison to traditional education resources, and most participants found chatbots to be useful. Noted as follows:

P2 – *"Chatbots are very useful, with a personalized experience, endless probing options, unlimited response generation, and more focused and direct responses being provided compared to the traditional resources that are mostly provided in a teacher-centred environment that limits the acquisition of 21st century skills like innovation, creativity, analytical and research skills, and problem solving."*

P3 – *"Chatbots enable easy access to resources 24/7. They provide instant feedback and make learning easier."*

P6 – *"Because of too much information today, it becomes difficult to read almost everything, but because of chatbots, the information is usually brief and straight to the point in a way that it is easier to understand. Traditional educational resources today are slowly being replaced by AI due to relevance and the need for quick information."*

P9 – *"It is very useful because traditional educational resources take a long time to be updated or replaced."*

P11 – *"AI is better as it provides tutors who are ever ready to help students to study anytime, anywhere, as compared to physical teachers who sometimes get tired or unavailable."*

P12 – *"AI chatbots can provide more interactive and engaging learning experiences compared to traditional textbooks and lectures."*

3.3. Perceived Ease of Use

Participants were probed on their specific use cases of AI-chatbots and what outcomes they had in order to gain insights on how easily they made use of the AI-chatbot to accomplish a task.

P2 – *"I have used it to answer an assignment, and the challenges I faced were a lack of context in the responses it provided. It generalized the responses, which made me use different questioning techniques on the same concept to get the information I required. I had to also make use of electronic documents to assist me in answering the question."*

P3 – *"To research for an assignment, and it really helped clarify what I needed to do, giving examples."*

P4 – *"I need information on the five levels of item difficulty for my group presentation. The results were good as they were relevant to what I wanted with sound and concrete examples that were easy to relate to and describe."*

P8 – *"During a mass lecture, where everyone was supposed to contribute, and I got everything I had asked for."*

P10 – *"I used it in crafting a presentation, and it came out with more than what I expected, well-crafted."*

P12 – *"Assignment writing, the chatbot struggled to comprehend complex queries."*

3.4. Performance Expectancy

Participants were questioned on the functionalities they would expect in AI-chatbots. Other participants pointed out project development, contextualisation, and customisation of responses, among other functionalities.

P2 – *"The Chatbot should have the ability to contextualize its responses as well as provide examples that are relevant with up-to-date information. It should also have the ability to provide an option for references."*

P3 – *"They should be able to give authentic references and more detailed explanations."*

P9 – *"Be able to provide audios."*

P11 – *"An AI that can answer Shona questions."*

Participants were questioned on the performance of chatbots compared to other tools in performing similar tasks. Most participants perceived chatbots to be efficient, offering responses quickly.

P3 – *"It is cheaper to use. It is also not complicated."*

P5 – *"Chatbots provide requested information."*

P6 – *"AI chatbots are quick and offer conversations that easily take place through prompts, but there isn't much difference compared to other tools and resources."*

P10 – *"Its performance is superior to other tools as I interact with it."*

P12 – *"AI chatbots offer more personalized and adaptive support compared to static online resources."*

Furthermore, participants were asked about their views on the impact of chatbots on their performance, outcomes, and learning experiences since using AI-chatbots. Most participants stated that they have noticed changes in their performance, ranging from timely completion and submission of assignments, improved analytical skills, research skills, enhanced comprehension, and understanding of concepts.

P1 – *"Yes, meeting assignments submission deadline."*

P2 – *"Yes, there have been more changes. I am now more analytical of the information I acquire, and I have improved the way I clarify information and explain concepts. I have a better understanding of the topics in my courses. I have improved my techniques in answering questions and presenting information."*

P3 *– "Yes, my responses have clearer and more accurate information. This has enabled me to score better marks than before."*

P6 – *"Yes, I have noticed changes because when comparing my learning experiences now to learning previously without the use of AI chatbots, there is a big difference. The changes are that I understand difficult concepts better since I am able to use chatbots to understand these difficult concepts, and it is no longer challenging for me to understand."*

P7 – *"No, I still get lower grades in my assignments than expected."*

P10 – *"I have noticed major changes as I can now comprehend some of the most difficult concepts that even my educators taught and I did not comprehend."*

3.5. Perceived Risk

Participants were questioned on their perceived concerns when using AI-chatbots. Some participants stated privacy and security issues, misinformation, biases in data, and concerns about how data is collected.

P2 – *"The first time I used it, I was sceptical in that I thought it was collecting my personal details. That somehow the information I am seeking would be recorded by the creator of the AI-chatbot. I also thought I would be vulnerable to hackers, as they might use it to gain access to my devices and accounts."*

P6 – *"I am concerned about my privacy because I do not understand how the data information is collected."*

P12 – *"That chatbots may not always provide the desired answer or solution."*

3.6. Motivation for Adoption and Usage

Participants were questioned on their views regarding current methods teachers are using to provide information in the courses compared to the use of AI-chatbots. This was necessary to uncover underlying factors that influenced participants to adopt and use AI-chatbots. The participants responded as follows:

> ***P2 –*** *"It's a boring experience, especially when the lessons are too long because it involves theoretically explaining a concept that you might not even know its practical application. There is limited assistance as probing for more information and understanding of a concept might be taken as nagging or a challenge for the facilitator in how best they can demonstrate their understanding. There is a lack of connectives to real-world applications."*
>
> ***P5 –*** *"Teachers just tell you what they think is important, as for AI, if you keep on probing, you get more in-depth knowledge."*
>
> ***P8 –*** *"AI information is up to date, and is available 24/7, rather than the teacher, who is sometimes not available to help."*
>
> ***P9 –*** *"Teachers are being less resourceful than AI."*
>
> ***P10 –*** *"AI goes in-depth whereas teachers scratch on the surface."*
>
> ***P12 –*** *"Teachers can adapt their teaching methods to individual students' needs and learning styles, which AI cannot."*

Participants were also asked about how they evaluate the responses provided by an AI-chatbot. Some participants had positive comments towards the quality of the responses, while other participants had negative views about the reliability and accuracy of the responses provided by an AI-chatbot.

> ***P2 –*** *"I would say the responses are really good and helpful, depending on the information sought. In some contextual circumstances, I believe they are not that good because of the outdated information that it provides that has been overtaken by current events. Otherwise, for general concepts, it is a good tool."*
>
> ***P4 –*** *"I often use different AI chatbots to get the general idea and the similarities in response to validate a claim."*
>
> ***P5 –*** *"It depends on the chatbot that you are using; some are reliable."*
>
> ***P8 –*** *"They are okay if you ask correctly, some information may not be appropriate depending on how you ask it."*
>
> ***P10 –*** *"It is not exhaustive as it depends on the data that was fed; it needs to be constantly upgraded to go with current trends."*
>
> ***P11 –*** *"They are great as long as you provide them with well-crafted questions."*

3.7. Perceived Benefit

Participants were asked about what they believed to be the benefits and implications of using AI chatbots in higher education in order to capture their views and attitudes, as well as their satisfaction with the use of AI chatbots in their education experiences. The participants highlighted quite a number of benefits, and they are as follows:

> ***P1 –*** *"Improved quick access to information and data."*
>
> ***P3 –*** *"Helps extend learning outside the classroom. Encourage individual learning and research."*
>
> ***P6 –*** *"I believe it is transforming the way we learn and understand what we learn, especially for higher education. It is beneficial so as to keep up to date with technology advances happening in the world so as to compete globally."*
>
> ***P8 –*** *"Benefits are that it helps in research, information is available 24/7, although implications are over-dependency syndrome, learners may fail if they don't read after getting information from AI."*

P10 – *"Personalized learning, bridging the information gap, catching up or learning at your pace."*

P11 – *"AI is quite helpful as it provides online tutoring, which in turn helps students to study at their own time."*

Participants were also questioned on whether AI-chatbots have the potential to transform higher education. All the participants stated that AI chatbots have the potential to transform higher education.

P1 – *"Yes, through high-quality assignments and higher assignment scores for students."*

P2 – *"Yes, by bringing in creativity and innovation. As a support tool readily available to provide a personalized experience to students and staff members to use to enhance their methods of delivering courses and content. It can be a resourceful tool that will expand the capabilities of students in problem-solving skills, collaboration, and improved engagement with course content, delivery of services, and completion of projects well in time."*

P5 – *"It has the potential because nowadays learners are always glued to their gadgets, therefore learning using them will make them keen to learn."*

P10 – *"It has a greater potential as it goes with current trends and is super-fast, learning will now be click and go, solving the problem of individual differences."*

P11 – *"Yes, through the provision of collaborative learning platforms that are essential in higher education."*

P12 – *"Yes, by enhancing student engagement and motivation."*

3.8. Intention to Adopt

Participants were also questioned on their perceptions of whether AI-chatbots should be allowed or banned in higher education. This was necessary to enable the researcher to ascertain their intentions and attitudes towards the adoption of AI-chatbots. All the participants stated that chatbots should be allowed in higher education and that there should be restrictions on their usage upon implementation.

P1 – *"Allowed, there must be ethical boundaries on its use."*

P2 – *"It should be permitted. As a support tool that students can use in their pieces of work or projects. Institutions should have their recognized and evaluated chatbots (among the AI tools on the internet available to students) that they can allow students to use and cite in their pieces of work."*

P3 – *"It should be allowed to a greater extent. However, measures should be in place to enable learners to research and not simply forward AI answers."*

P6 – *"I think they should be allowed because of their usefulness and benefits, especially for students, since it makes learning easier and understanding different concepts or topics faster. It should be allowed to a Greater extent so that as students we are able to learn easily."*

The study provided valuable insights into students' perceptions and usage of AI-chatbots, shedding light on their experiences, motivations, and concerns regarding the potential ethical repercussions of their use. Primarily, the survey indicated that students in higher education are using AI chatbots more frequently to enhance their learning outcomes. The two key motivators are the effectiveness of these tools and students' confidence in their abilities. While students raised concerns about the over-reliance on AI chatbots, some argued that these technologies are not a universally applicable solution. Yet, most students were happy with AI chatbots, complimenting them on their ability to generate responses that were easily accessible.

The study also drew attention to other ethical issues, like data security and hacker vulnerability. These results provided a strong starting point for investigating further into the effects of AI chatbots within higher education, together with the ways in which educational institutions might utilize this technology to improve student-learning outcomes. Students have the determination to continue using AI chatbots in the

classroom. This is in spite of noting reservations and the call for regulations to prevent abuse and encourage responsible participation.

4. DISCUSSION

The main research question influenced the study's findings, focusing on perceptions of university students towards using AI chatbots in their learning. Taking into account the participants' experiences and barriers, the research drew attention to the significance of fostering ethical implementation of AI in HE and fostering sustainable practices aligned with the Sustainable Development Goals (SDG4 on quality education and SDG9 on innovation). Learners had also reported their use of AI-chatbots in enhancing their educational experiences (Albayati, 2024). They saw these tools as encouraging companions that assisted them in exploring subject matter across disciplines. Learners utilized chatbots for literature reviews, knowledge consolidation, preparation of assignments, and to enhance involvement and interaction. These results reflect OpenAI's (2023) view, which focused on the usefulness of chatbots for literature search and assignment support, and Rahman et al. (2023), who found chatbots encourage exploration and engagement. According to this research, AI chatbots promote interactive learning as they are available and user-friendly. In general, students felt that the tools were easy to use and helpful (Albayati, 2024). Furthermore, chatbots were considered able to provide personalized guidance, which is essential for learning 21st century skills. This finding is consistent with previous investigations (Chiu, 2024; Kong et al., 2023). Analytical thinking and understanding-building around complex topics improved among many of the learners, which in turn led to better academic performance. Mahapatra (2024) similarly reported enhanced student learning experiences, attributing this to tailored explanations suited to an individual's learning level. The results additionally indicated that chatbots offered adaptable and scalable learning opportunities. This means students can conduct independent research outside of formal classroom environments. Such round-the-clock assistance resonates with Chen et al. (2023), who argued that chatbots can expand accessibility, transform support services, and create improved learning environments. On the whole, not all their opinions were to be felt favorably. A few students were unhappy with this; for example, many said that chatbots have no flexibility and depth like human instructors. Sometimes this frustration can result in poor academic performance, indicating that if anything, chatbots might be incapable of fulfilling any given contextual requirement (Sleiman et al., 2022). Concerns had also been raised regarding the accuracy and reliability of chatbot-generated knowledge (Muchowe & Fodouop, 2024). Learners pointed out that effective use is based a great deal on the quality of the question posed, and over-dependence on AI could detract from the critical engagement with knowledge. Mistakes in these tools can hinder them and put limits in terms of accuracy and how reliable they are, and the complete benefit of all users cannot be achieved if they are not trained in navigating these tools. There were also ethical issues raised. Students were concerned with privacy, authenticity, and transparency related to data, which echoes Schonberger (2023). For the research question, data management staff reported on privacy issues and issues that students concerned themselves with. Many were concerned their personal information might be made available to hackers, and they also had no guidance for how to go about reporting a hacking incident to authorities in the event of a data breach. Further complicating this issue, there are no clear institutional policies on data protection in Zimbabwe currently (Maguraushe et al., 2024). Potraz (2023) reports that distrust is driven by both world trends and local cases of data misuse that erode trust in universities' capability to preserve data. Such moral dilemmas, Eken (2023) cautioned, may ultimately undermine essential educational tenets. Nevertheless, students did not push for a ban on chatbots. They did not oppose them; however, they said they would continue to use them, claiming their advantages and Zimbabwe's recent Cyber and Data Protection Act (Adept Solutions, 2025; Afriwise, 2025). Adoption and the development of policy at many institutions are quite nascent (Hlongwane et al., 2024). Broadly speaking, learners showed a strong acceptance towards AI integration, similar to the findings of Fosner (2024) and Sedlbauer et al. (2024), who found that positive student attitudes drive support toward AI in education, given that clarity in guidelines is created.

5. CONCLUSION

The research concluded that the use of AI-chatbots in a Bulawayo higher education institution was determined by both personal-level factors, such as learners' perceptions of AI, the experiences of using the AI platforms, and their attitudes towards the concept, and institutional-related factors, such as academic

integrity, policy frameworks, and ethics. This supports the Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT) but incorporates the dimension of institutional responsibility and ethics as the primary drivers of adoption. The top drivers of chatbot use were effectiveness and self-efficacy among students. This illustrates the crucial role of self-efficacy in enabling adoption. Barriers to diffusion were identified as important contextual factors (e.g., access to the internet, different styles of learning, limited infrastructure, and pedagogical methods) in developing countries like Zimbabwe. The findings underlined the need for social inclusion in order for new ideas to reach all learners in higher education. Students' reflections had ethical undercurrents tied to privacy, integrity, and responsible use at the center. Weak institutional data protection measures were associated with lower levels of trust and skepticism about adoption, the study found. It stressed that ethics-led initiatives in organizations and good governance structures are necessary to build a positive perception towards AI. Students demanded that regulations be put in place to curtail misuse and encourage responsible usage and said that governance mechanisms are the very basis for continuing integration. Educators and curriculum designers should be trained to support students with responsible chatbot use in order to maximise learning achievements. Curriculum developers need to investigate how chatbots can promote critical thinking, creativity, and other skills, including information synthesizing and literature review. It was encouraged for faculty to be responsive, to keep academic integrity as a higher priority, and to define acceptable limits of chatbot use by institutions. FPS should also offer students assistance for orientations, retraining, and awareness of AI literacy, as well as training and education for students. It was recommended that policy-makers establish clear legislation that combines innovation and ethical measures to mitigate risks of innovation and ensure AI improves education, while safeguards of integrity and creativity are maintained. Lastly, the research suggested the inclusion of a greater range of diverse participants across institutions, genders, and fields for future research in the study to facilitate generalization. Longitudinal studies were also proposed in order to gain insight into the longer term impact of AI-chatbots in higher education.

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