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Perception and Use of Large Language Models by Library and Information Science Students

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ABSTRACT

Large language models (LLMs) have ushered in transformative information retrieval, organisation, and dissemination possibilities. The study investigates the utilisation of LLMs by library and information science (LIS) students. A survey through a case study was done to unveil the evolving role of LLMs in LIS education and practice. Stratified and purposive sampling was used to select 59 students doing a degree in LIS at a public university in Zimbabwe. An online questionnaire was used to collect data which was analysed using content analysis. The findings showed that the students were aware of ChatGPT which they used for content generation. The major challenge was misinformation, bias, and the ethical considerations in using ChatGPT. The authors recommend the importance of training both students and educators on the ethical use of LLMs and the introduction of artificial intelligence literacy programmes. No study was done on the perception and use of LLMs by LIS students in Zimbabwe. The study contributes to a better understanding of how emerging technologies are reshaping the field and how students are at the forefront of navigating their opportunities and challenges. The results can inform curriculum development, training programs, and policy formulation for incorporating LLMs into library and information services.

Keywords: Large language models, ChatGPT, Academic libraries, Artificial intelligence, Generative AI, AI and Library and Information Science

INTRODUCTION

The emergence of large language models (LLMs) has taken the academic world by storm, and students are utilizing ChatGPT to do their research (De Angelis et al. 2023; Javaid et al. 2023; Rohman 2023; Teubner et al. 2023; UNESCO 2023). According to Sumakul et al. (2020), artificial intelligence (AI) may have an impact on the teaching and learning process and present new demands on both teachers and students. In recent years, the field of library and information science (LIS) has witnessed a significant transformation due to the emergence of these LLMs which have affected the way information is generated, accessed, processed, and disseminated (Cox and Tzoc 2023; Hadi et al. 2023; Harrington 2023; Lund and Wang 2023). Students and other researchers have been engaging with LLMs in their academic pursuits and professional endeavours. LLMs offer unprecedented opportunities for students to enhance their information retrieval and

management skills since they sift through vast volumes of textual data, aiding in research, cataloguing, and information organisation (De Angelis et al. 2023). Furthermore, they enable the development of innovative information services, chatbots, and virtual assistants, which are becoming increasingly important in information provision. However, there are concerns surrounding the use of LLMs such as data privacy, ethical usage, and the potential bias in algorithms (Farhud and Zokaei 2021; Naik et al. 2022; UNESCO 2023a).

Understanding how LIS students perceive and utilize LLMs can shed light on the potential impact of these models on the future of library and information services in Zimbabwe. In a learning environment, the way students perceive a technological innovation such as GenAI, their views, concerns, and experiences of the technology can have an impact on their willingness to utilise the tool (Chan and Hu 2023). Sumakul et al. (2020) argue that learners' perceptions could affect the learning activities' designs, teachers' classroom management, and how students see themselves as successful learners. It is against this background that this study aimed to explore the perceptions and usage of LLMs by LIS students in Zimbabwe, looking at the following objectives:

- To investigate the awareness of LIS students regarding large language models.
- To examine the perception of LIS students towards the impact of LLMs in the field of library and information science.
- To assess the extent to which LIS students utilize LLMs in their academic and professional activities.
- To identify potential areas where LLMs can enhance library and information services in Zimbabwe.

STATEMENT OF THE PROBLEM

The advent of LLMs such as ChatGPT has revolutionized various fields, including LIS since these models have the potential to enhance information retrieval, natural language processing, and text generation capabilities (Haleem et al. 2022; Ray 2023). However, the perception and utilisation of LLMs among LIS students in Zimbabwe remain largely unexplored. The problem is a lack of comprehensive understanding regarding how LIS students in Zimbabwe perceive and utilise LLMs in their academic and professional pursuits. This knowledge gap hinders the effective integration and utilisation of these models to improve information services, resource management, and overall efficiency within the LIS field in Zimbabwe. Understanding the perception and use of LLMs by LIS students in Zimbabwe will help gauge the level of awareness and knowledge of these emerging technologies among the student population. An assessment of the potential barriers and challenges faced by LIS students in utilizing LLMs effectively would be done, while insights into the specific areas within LIS education and practice that can be enhanced through the integration of LLMs would be provided. The study would provide actionable recommendations for stakeholders in the LIS community to harness the potential of LLMs in Zimbabwe.

LARGE LANGUAGE MODELS

LLMs are advanced artificial intelligence systems designed to process, understand, and generate human language (Hadi et al., 2023; Soule 2023). By training on massive amounts of text data, LLMs develop the ability to generate coherent and contextually appropriate responses to human queries or prompts (Soule 2023). Chatbots are frequently used in customer service applications, where they can respond to queries, offer assistance, and fix problems (Adamopoulou and Moussiades 2020). Chatbots and LLMs are often used together to create more sophisticated and engaging conversational experiences (Hadi et al. 2023). For example, a chatbot might use a LLM to generate text for its responses. Some of the popular chatbots include ChatGPT, Google Bard, and Microsoft Bing (Hadi et al. 2023).

KNOWLEDGE OF LLMs BY STUDENTS

Chan and Hu (2023) carried out a study that demonstrated a generally high level of familiarity with GenAI technologies. The participants showed a good understanding of the capabilities and limitations of GenAI technologies, and a positive attitude towards using these technologies in their learning, research, and future careers. A study by Chan and Zhou (2023) gathered data on students' familiarity, knowledge, perceived value, perceived costs, and intention regarding the use of GenAI technologies in teaching and learning. They found that the correlation analysis between students' knowledge of GenAI and their intention to use it revealed a statistically significant, albeit weak relationship. The findings suggest that while it is important to provide students with basic knowledge about GenAI, such as its definition, limitations, and benefits, this alone is not sufficient to foster their intention to use it.

UTILIZATION OF LLMs BY STUDENTS

One potential application of LLMs is in support of academic research (De Angelis et al. 2023; Samimi et al. 2021). The impact of ChatGPT has been huge for the public and the research community, with many authors using the chatbot to write parts of their articles and some papers even listing ChatGPT as an author (De Angelis et al. 2023). LLMs can be utilised to process and analyse vast amounts of scientific literature, contributing to literature reviews, identifying trends, and generating insights (Samimi et al. 2021). LLMs can assist in the development of critical thinking and problem-solving skills (Kasneci et al. 2023). ChatGPT could be a valuable tool for composing scientific articles and research projects and can produce a rough draft of the text that can be used as inspiration for research work (Cox and Tzoc 2023). ChatGPT has already been integrated into the research process, even before addressing ethical concerns and discussing common rules (De Angelis et al. 2023). Additionally, LLMs can also assist in the development of research skills by providing students with information and resources on a particular topic and hinting at unexplored aspects and current research topics, which can help them better understand and analyse the material (Kasneci, et al. 2023).

One area where AI is having a significant impact is in the realm of student assignments and exams (Hadi et al. 2023). Students can use ChatGPT to produce a report for their class or even to supply the answers to an exam. One of the main advantages of using ChatGPT and AI bots in

education is that they can help students complete their assignments more efficiently (Hadi et al. 2023). It can serve as a supplementary resource to answer students' questions, provide explanations, and offer additional learning opportunities tailored to students' needs (Yun et al. 2023). Given the above affordances and benefits, ChatGPT can potentially enhance educational access and resources and contribute to social justice (Yun et al. 2023).

LLMs can be used to facilitate group discussions and debates by providing a discussion structure, and real-time feedback, which can help improve student engagement and participation (Kasneci, et al. 2023). ChatGPT can support instructors and complement teacher–student interactions, especially for large classes where it is challenging for instructors to provide individualised attention and support to students (Hadi et al. 2023; Kasneci, et al. 2023; Yun et al. 2023). A study by Gallacher et al. (2018) revealed that students saw the independence of conversing with Cleverbot as being beneficial for their English study.

In collaborative writing activities, where multiple students work together to write a document or a project, large language models can assist by providing style and editing suggestions as well as other integrative co-writing features (Kasneci et al. 2023). Text-to-text AI generators can provide writing assistance to students, especially non-native English-speaking students (Chan and Lee 2023), and ChatGPT can also be used to suggest titles, write drafts, and help express complex concepts in fluent and grammatically correct scientific English. This can be useful for researchers who may not have a strong background in writing or who are not native English speakers (De Angelis et al. 2023). It might serve as the basis for class exercises or as a tool to help English language learners develop their fundamental writing abilities (Javaid et al. 2023).

For remote tutoring purposes, LLMs can be used to automatically generate questions and provide practice problems, explanations, and assessments that are tailored to the student's level of knowledge so that they can learn at their own pace (Kasneci et al. 2023). Large language models can be used to develop inclusive learning strategies with adequate support in tasks such as adaptive writing, translation, and highlighting of important content in various formats (Kasneci et al 2023). ChatGPT might be used in the classroom is to create outlines and provide lesson plans personalised to each student and suggestions for class projects. It might be used as a debate partner or an after-hours tutor (Javaid et al. 2023).

STUDENTS' PERCEPTION OF LLMs

Research into student perceptions of GenAI typically investigates students' attitudes, their experiences of AI, and factors influencing their perceptions (Chan and Hu 2023). Students found AI tools such as chatbots and Plot Generator useful for enhancing language acquisition (Bailey et al. 2021; Sumakul et al. 2020). A study of the use of chatbots in business education also reported favourable user feedback, with students citing positive learning experiences due to chatbots' responsiveness, interactivity, and confidential learning support (Chen et al. 2023). Chan and Hu (2023) found that students perceive GenAI technologies as beneficial for providing personalized learning support, as they expect learning resources tailored to their needs 24/7. In terms of writing and brainstorming support, students want feedback to improve writing skills, beyond just grammar checking and brainstorming (Atalas 2023). Haristiani (2019) found that learners are interested in using chatbots because they can use them anytime, anywhere. She also observed that the students were more confident in their learning activities when they used chatbots compared to when they

talked to human tutors. A study by Sumakul et al. (2020) found that the learners showed positive perceptions towards the use of AI technology in their writing classes. They reported that the AI could help them understand the theoretical concepts, assist them during the writing process, and help them learn the grammar and vocabulary items in their writing.

However, the study by Chan and Hu (2023) revealed that students perceive GenAI technologies negatively, with students expressing reservations about over-reliance on the technology, its potential impact on the value of university education, and issues related to accuracy, transparency, privacy, and ethics particularly plagiarism. These concerns were also raised in a study by Chan (2023), who explored students' perceptions of AI-giarism, an emergent form of academic dishonesty involving AI and plagiarism, within the higher education context. Students viewed the outright use of AI tools to generate and copy content as a significant instance of academic misconduct, thus extending their understanding of plagiarism to the use of AI. The findings underscore the need for clear and specific guidelines on the use of AI in academic work (Chan 2023).

CHALLENGES RELATED TO THE APPLICATION OF LLMs

Despite having a lot of potentials, LLMs have drawbacks and limitations (Soule 2023). Higher education is poised at the precipice of the changes and challenges brought about by ChatGPT (Yun et al. 2023). Students may rely too heavily on the model and one concern is that these technologies may lead to a loss of creativity, problem-solving, and critical thinking skills among students because information is generated effortlessly (Hadi et al. 2023; Kasneci et al. 2023). This is because the model simplifies the acquisition of answers or information, which can amplify laziness and counteract the learners' interest in conducting their investigations and coming to their conclusions or solutions (Kasneci et al., 2023).

Copyright issues, data privacy, and security are some of the concerns related to the use of LLMs. During the generation of a new prompt, the answer may contain a full sentence or even a paragraph seen in the training set, leading to copyright and plagiarism issues (Kasneci et al., 2023). Ethical dilemmas come into play when it comes to identifying authorship or monetizing the products of AI tool queries. Faculty say that students who turn in work from ChatGPT as their own are committing plagiarism (Cox and Tzoc 2023). The use of LLMs in education raises concerns about data privacy and security, as student data is often sensitive and personal. This can include concerns about data breaches, unauthorized access to student data, and the use of student data for purposes other than education (Kasneci et al., 2023).

Another concern is that the use of LLMs in education can perpetuate and amplify existing biases, inequalities, and unfairness in society, which can negatively impact teaching and learning processes and outcomes (Hadi et al. 2023; Hannan and Liu 2023; Kasneci et al. 2023). For example, if a model is trained on data that is biased toward certain groups of people, it may produce results that are inaccurate, unfair, harmful, or discriminatory toward those groups (Harrer 2023; Kasneci et al. 2023; Soule 2023). The mix of human biases and seemingly coherent language heightens the potential for automation bias, deliberate misuse, and the amplification of a hegemonic worldview (Bender et al. 2023). This was further discussed by Yun et al. (2023), who noted that while most of the research in LLMs is done for the English language, there is still a gap in research in this field for other languages. This can potentially make education for English-

speaking users easier and more efficient than for other users, causing unfair access to such education technologies for non-English-speaking users (Yun et al. 2023).

Hallucinations in LLMs are often the result of the model's attempt to fill in gaps in knowledge or context, with assumptions that are based on the patterns it has learned during training (Hadi et al. 2023). GPT-3 can generate text that is appropriate for a wide range of contexts, but unfortunately, it often expresses unintended behaviours such as making up facts, generating biased text, or simply not following user instructions (De Angelis et al. 2023). The ability of LLMs to generate texts like those composed by humans could be used to create fake news articles or other seemingly legitimate but fabricated or misleading content, without the reader realising that the text is produced by AI (De Angelis et al. 2023). GenAI tools are not able to assess the validity of content and determine whether the output they generate contains falsehoods or misinformation, thus, their use requires human oversight (Lubowitz 2023).

The maintenance of LLMs could be a financial burden for schools and educational institutions, especially those with limited budgets (Kasneci et al. 2023). The computational and resource requirements for training and deploying LLMs can be substantial. Training these models requires significant computational power, memory, and energy consumption (Soule 2023). There might be a lack of understanding and expertise where many educators may not have the knowledge or expertise to effectively integrate new technologies into their teaching (Redecker et al. 2017). As with any other technological innovation, integrating LLMs into effective teaching practice requires understanding their capabilities and limitations, as well as how to effectively use them to supplement or enhance specific learning processes.

Against the multifaceted and cumulative impacts of ChatGPT, students are positioned at the frontier of coping with changes and challenges (Yun et al. 2023). On the one hand, the student-driven nature of ChatGPT expects students to take a leading, autonomous role in actively managing their learning and inquiries with AI. On the other hand, students who lack the relevant competencies to manage their learning with AI are likely to be disempowered by the technology's adoption (Yun et al. 2023). Gallacher et al. (2018) found that students used a chatbot called Cleverbot and expressed concerns about its lack of emotion, visible cues, and inability to confirm understanding, which were reported to be some of the major drawbacks to its form of interaction. Therefore, educators should be skeptical of incorporating current AI technology in the classroom, as frustration from interaction might outweigh any benefits of its inclusion.

AREAS WHERE LLMs CAN ENHANCE LIS SERVICES

The application of LLMs is diverse and wide-ranging, with their potential being leveraged across various fields (Soule 2023). The use of LLMs in education has been identified as a potential area of interest due to their diverse applications (Kasneci et al. 2023). AI-based technologies in LIS have enabled advanced information retrieval techniques (Bassey and Owushi 2023). Intelligent search engines, chatbots, and recommendation systems leverage AI algorithms to provide users with personalized and contextually relevant information. These systems utilize machine learning and data mining techniques to analyze user preferences, behaviors, and interactions, facilitating more accurate and tailored search results (Bassey and Owushi 2023).

AI can automate the cataloging and classification process, making it more efficient and accurate (Bassey and Owushi 2023). Machine learning algorithms can analyze and extract

metadata from various types of documents, reducing the manual effort required for cataloging. AI also plays a crucial role in automated indexing and metadata generation, helping librarians organize and categorize vast amounts of information efficiently (Bassey and Owushi 2023). ChatGPT can also be used to spark ideas or simplify aspects of the research process. It can help brainstorm topics, generate keyword lists, and provide work summaries (Cox and Tzoc 2023). ChatGPT can be connected to library discovery tools, create a bibliography of relevant resources on your topic. In the future, AI tools may serve as research assistants, conducting virtual experiments, analyzing data, copywriting and editing text, and generating citations (Cox and Tzoc 2023).

Librarians can assist researchers by providing tips for asking the right questions to get the best results (Cox and Tzoc 2023). AI tools like ChatGPT and DALL-E will make information literacy and digital literacy more important than ever. Librarians can assist faculty in teaching students critical thinking skills to validate facts and evaluate the quality of the answers provided by ChatGPT (Cox and Tzoc 2023). ChatGPT can write emails, encouraging faculty members to use library's e-reserve service. It can generate a list of read-a-likes or books on topics for a thematic display. Drafts of marketing materials such as press releases and event posters can be created via AI queries (Cox and Tzoc 2023). AI tools can be biased based on the preconceptions of their creators or the accuracy of their data sources. Librarians can encourage students to be aware of biases that may appear in ChatGPT's answers (Cox and Tzoc 2023). Libraries also generate vast amounts of data, including circulation statistics, user behaviour, and resource usage. AI techniques can be applied to analyse this data and extract meaningful insights (Bassey and Owushi 2023).

RESEARCH METHODOLOGY

A survey was done through a case study of the National University of Science and Technology LIS students to gather data on awareness, perceptions, and utilization of LLMs. Stratified and purposive sampling were used to select the participants. The population was stratified according to the level of study, and final-year undergraduate students and master's students of Library and Information Science degrees were purposefully selected since they are involved in more research activities than any other level. The population consisted of 59 students, and 43 responded to the questionnaire as shown in Table 1.

Table 1: Participants of the study

Level of study	**Number of students**
MSc final-stage students	14
MSc 1st-stage students	17
Final-year undergraduate students	28
Total	**59**

Data was collected using an online questionnaire developed on Google Forms with open and closed-ended questions. Content analysis was used to analyse the data, and the findings were presented thematically, while quantitative data was presented using descriptive statistics, guided by the objectives of the study. Ethical clearance was sought from the university, and informed consent was obtained from all participants, ensuring the confidentiality and anonymity of their responses.

FINDINGS AND DISCUSSION

The findings were presented according to the questions that formed the questionnaire and grouped according to the objectives of the study. The 43 respondents who participated in the study consisted of 20 final-year undergraduate students and 23 master's students.

AWARENESS, USE, AND PERCEPTION OF LLMs BY LIS STUDENTS

The findings showed that all LIS students were familiar with ChatGPT, which had been used to generate content, especially during the process of writing assignments and preparing for examinations. They were not aware of the other LLMs. This supports what was pointed out by Chan and Hu (2023) and Chan and Zhou (2023) who said that students were aware of Gen AI technologies. All the students indicated that they had been using ChatGPT for research and information gathering, but none stated the use of the LLMs for language learning and practice, creative writing, or storytelling, a use which was pointed out by Chan and Lee (2023) and Gallacher et al. (2018). The uses of LLMs pointed out by LIS students were in line with what was stated by Cox and Tzoc (2023), De Angelis et al. (2023), Hadi et al. (2023), Kasneci et al. (2023), Yun et al. (2023), and Samimi et al. (2021). The findings showed that the LIS students perceived the use of LLMs as useful in their academic endeavours, mainly the use of chatbots that enhanced their learning experiences as stated by Chan and Hu (2023), Chen et al. (2023) and Sumakul et al. (2020).

It can be noted that LIS students were utilizing ChatGPT in various ways to enhance their learning experiences and academic pursuits. One respondent stated, *"I utilise ChatGPT to ask questions, seek explanations, and obtain relevant content on a wide range of topics, especially when I am looking for information that I do not understand*." Another one indicated that *"ChatGPT has been very useful in writing, especially when developing a research proposal, where it assisted me to generate ideas, and during examination preparations".* The other respondent stated that *"I have been seeking explanations of concepts to reinforce my understanding of the course materials*". This was supported by Cox and Tzoc (2023), De Angelis et al. (2023), Hadi et al. (2023), Kasneci et al. (2023), Samimi et al. (2021) and Yun et al. (2023) who pointed out several ways that students had been utilising LLMs. This showed that LIS students in Zimbabwe were aware of the existence of LLMs, mainly those that deal with content generation, and they perceived them from a user perspective instead of the technical side. As a result, they are not worried about the development of LLMs but are concerned about their usability.

BENEFITS AND CHALLENGES OF USING LLMs

In line with how the respondents were utilising LLMs, the students indicated that they use the models to access a vast amount of knowledge from the internet and that it had been assisting them with complex tasks, especially when they needed a general understanding of the topic at hand, as shown in figure 1. This was also noted by Sumakul et al. (2020) who stated that students enjoyed using chatbots as compared to human tutors.

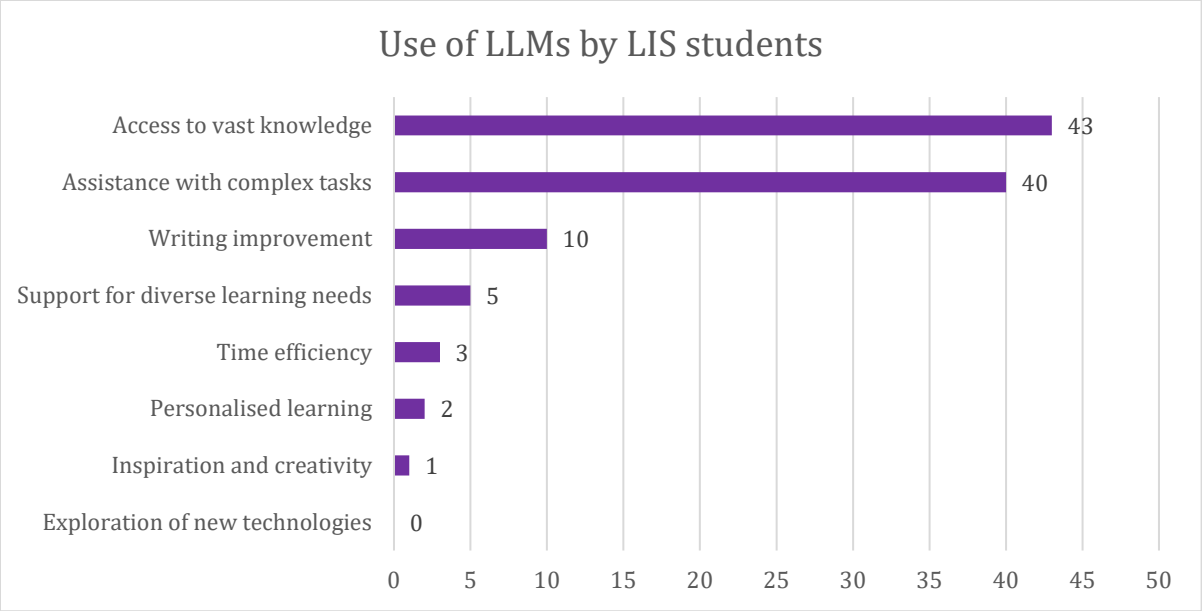

Figure 1. Use of large language models by LIS students at NUST

On the challenges of using LLMs, the respondents pointed out that they were worried about the ethical considerations, misinformation, and bias associated with the use of ChatGPT as shown in Figure 2. This was also supported by Cox and Tzoc (2023), De Angelis et al. (2023), Hadi et al. (2023), Hannan and Liu (2023), Harrer (2023), Kasneci et al. (2023) and Soule (2023). The findings showed that the LIS students understood the dangers of the unethical use of LLMs. This sentiment came from master's students who indicated that they had been teaching their patrons about academic integrity and the use of ChatGPT in institutions of higher learning. They realized the ethical concerns regarding data privacy and the potential misuse of the technology during research. One respondent stated that *"there is a potential for getting biased information, which leads to disseminating wrong information, and therefore, there is a need to verify information generated by LLMs from reliable sources and exercise critical thinking to discern accurate and unbiased content"*. This was also pointed out by Lubowitz (2023) who stated the need for evaluating the content that is generated by Gen AI tools.

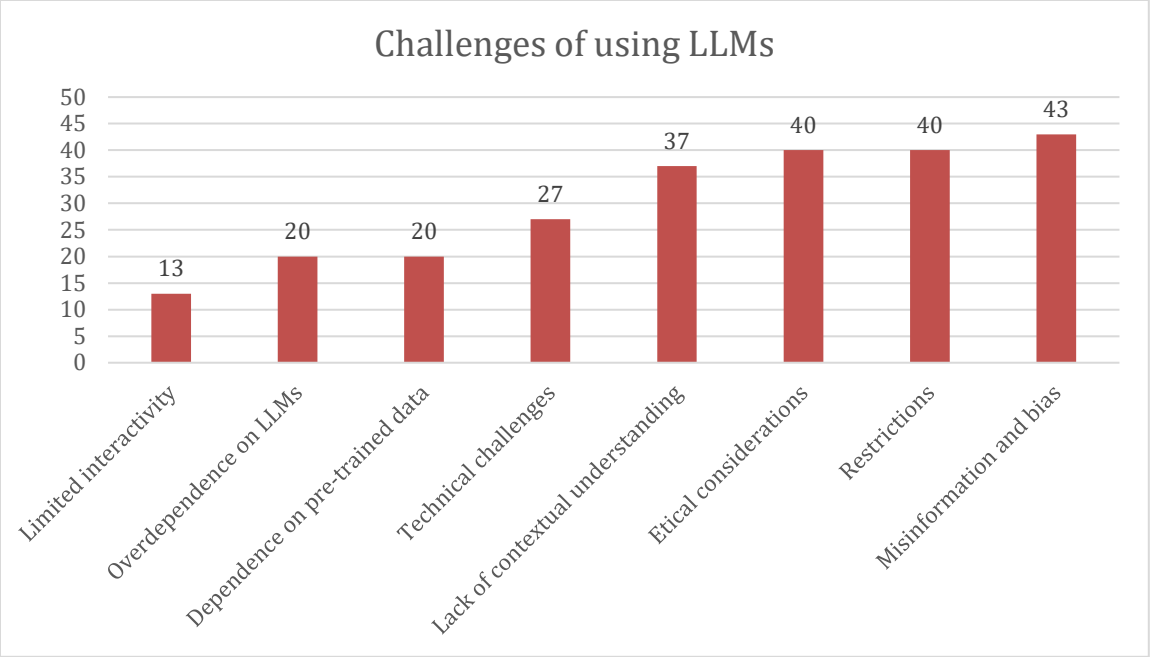

Figure 2. Challenges of using large language models by LIS students at NUST

Another respondent stated, "*I haven't used the ChatGPT because of the restrictions that are placed on its use in Zimbabwe. I have tried to create an account several times without success"*. This showed that there were some restrictions and technical challenges that were experienced by LIS students when using ChatGPT in Zimbabwe. Another respondent pointed out the use of a VPN when using ChatGPT to be able to access the application. The other respondent pointed out that *"there is a need to evaluate the information retrieved from ChatGPT since some of it is not correct and, in some cases, it might fail to understand your question or misinterpret it, leading to the retrieval of incorrect information"*, and this supported what was stated by Lubowitz (2023).

AREAS WHERE LLMs CAN ENHANCE LIS SERVICES

The findings showed that LIS students were willing to learn more about the LLMs to enhance their learning activities and their roles and responsibilities within their work environment. All the students indicated that workshops, webinars, and seminars were important in developing the skills and knowledge of LIS students and librarians in Zimbabwe. The respondents indicated that LLMs can enhance library and information services in several areas, as shown in Figure 3. This assertion was supported by Bassey and Owushi (2023) and Cox and Tzoc (2023) who pointed out the use of LLMs to analyse usage statistics, information and digital literacy teaching, virtual reference services, advanced information retrieval, and automated cataloguing and classification.

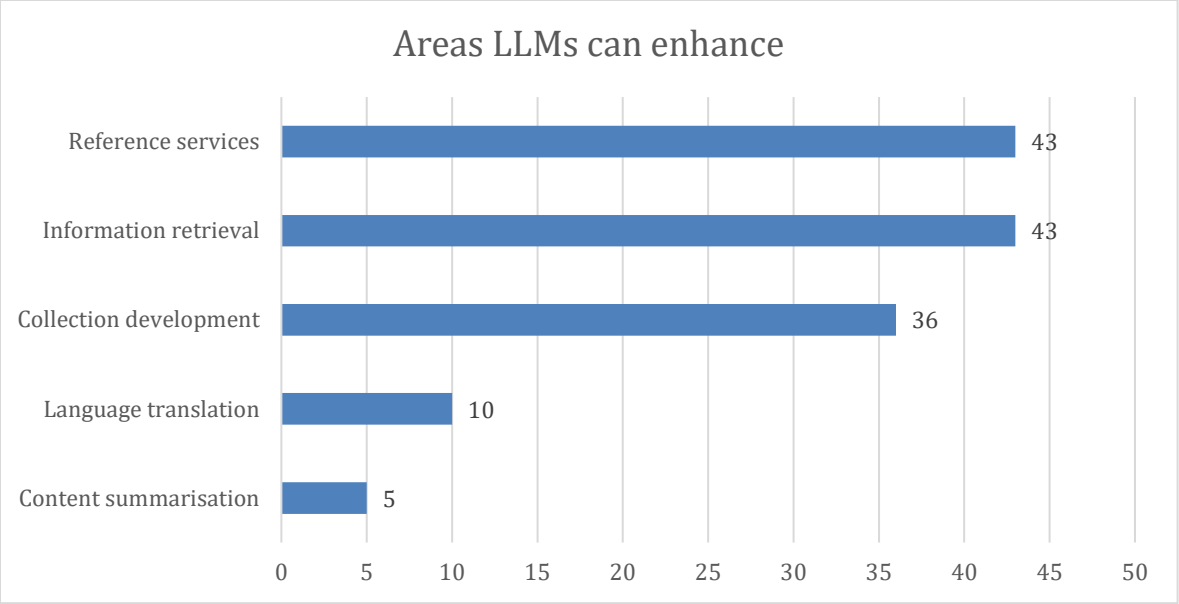

Figure 3. Library and information services that can be enhanced by LLMs.

The respondents pointed out that LLMs can be utilised in the following ways:

- LLMs can improve the efficiency and effectiveness of information retrieval systems in libraries if they are integrated into library databases. They can assist users in finding relevant resources by understanding their queries and providing more accurate search results.
- LLMs can augment traditional reference services by providing instant, on-demand assistance to users through answering questions and providing references to relevant sources. They can be used as virtual reference librarians to assist users in navigating complex information landscapes and guide them to the most reliable and up-to-date resources.
- It can aid in collection development activities by analysing user preferences, needs, and trends, and librarians can identify emerging topics, popular subjects, or gaps in the collection.

CONCLUSION AND RECOMMENDATIONS

The study showed that LIS students were aware of the LLMs, although the majority were familiar with ChatGPT only and did not understand other applications. However, they did not have an in-depth understanding of the technical aspects of the LLMs but were excited about the possibilities offered by the models and were interested in exploring their applications in LIS. They perceived the use of large language models as important in the library and information science fields and were eager to learn how they could incorporate these into LIS service provision. However, due to the technical issues surrounding the use of ChatGPT in Zimbabwe, the LIS students were utilising it to a lesser extent in their studies since some of them were not able to create accounts to use the application unless they were using VPN.

There is a need to train LIS students on other LLMs that can affect their work as librarians, and since the field of artificial intelligence is constantly changing, there is a need to continuously seek professional development to stay in the loop. Training should be done for both educators and students so that they are competent in the use of LLMs. This calls for a revision in the LIS curriculum in library schools to ensure that the modules being delivered are in line with the changes that are taking place in the information science field. There is also a need for collaboration between educators, researchers, and practitioners to ensure that the students receive the necessary knowledge and skills to navigate and utilise LLMs effectively and ethically in their future careers. In line with that, there is a need to develop policies that govern the use of LLMs in higher education institutions. It is also important to introduce artificial intelligence literacy to LIS students so that they can assist library patrons when they join the workforce. This would ensure the responsible use of LLMs, and the critical evaluation of information received as a way of developing critical thinking and independent research skills of students while utilising LLMs.

SIGNIFICANCE AND IMPLICATIONS

The study findings contribute to the existing body of knowledge on the perceptions and use of LLMs, particularly in the context of LIS education and practices in Zimbabwe. The results can inform curriculum development, training programs, and policy formulation for incorporating LLMs into library and information services. Information on how students are utilizing LLMs would assist librarians in enforcing the ethical use of such models while relying on the benefits and opportunities that are offered. The study will also help LIS professionals and policymakers understand the potential impact of LLMs on the future of libraries in Zimbabwe.

AREAS OF FURTHER RESEARCH

There is a need to study how LLMs are being used in Zimbabwean libraries to improve service provision and understand any artificial intelligence literacy programs being done to educate library patrons.

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