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Health Sciences Students and Educators Experience with Using ChatGPT

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***Abstract*—This study investigates the experiences, challenges, and opportunities presented by ChatGPT AI in health sciences education, focusing on self-directed learning among students and educators at the University of Sharjah, UAE. Utilizing a descriptive qualitative research design, the study engaged participants through semi-structured interviews to explore diverse perspectives on ChatGPT's application in health sciences education. Results indicate mixed reactions: while users appreciate ChatGPT for its efficiency in academic tasks, concerns were raised about its offline functionality, linguistic inclusivity, ethical considerations, and potential impact on learning integrity and skill acquisition. Non-users expressed apprehension towards dependency on AI, diminished learning engagement, and academic dishonesty. The study concludes that while ChatGPT offers significant benefits in terms of resourcefulness and efficiency, its integration into educational settings necessitates careful consideration of accessibility, ethical standards, and the maintenance of academic integrity. These findings underline the need for a balanced approach to adopting AI technologies in education, highlighting the importance of addressing both the opportunities and challenges they present to foster an enriching learning environment.**

Keywords—Artificial Intelligence, ChatGPT, Health Sciences Education, Technology Acceptance.

I. Introduction

Artificial intelligence (AI) encompasses a multidisciplinary approach, combining computer science and linguistics to develop machines capable of tasks requiring human intelligence, including learning, adaptation, reasoning, and understanding abstract concepts [1]. Among such advancements, ChatGPT, launched in November 2022, stands out as a large language model trained on extensive text datasets across multiple languages. It exhibits an exceptional ability to generate human-like responses, owing to its foundation in the generative pre-trained transformer (GPT) architecture [2,3].

In health sciences education, AI tools like ChatGPT serve various roles. They assist in preparing assignments, analyzing students' work, creating case studies, and generating scenarios for practical learning experiences. Furthermore, ChatGPT's capabilities extend to providing virtual tutoring, immediate access to medical information, and support in research activities, including generating bibliographies and outlines [4-7].

Despite its benefits, ChatGPT's application in scientific academia sparks debate over its potential risks, such as plagiarism and the accuracy of its generated content. Concerns also include the privacy of user interactions [8-10]. Nonetheless, the efficiency and personalization offered by ChatGPT in customer service highlight its advantages, including time-saving and the reduction of operational costs [6, 8, 11].

While technology acceptance models indicate a positive attitude towards tools like ChatGPT, especially in technologically advanced Western contexts, the global spread of education necessitates cross-cultural validation [3,12,13]. The unique educational landscape of the United Arab Emirates, with its diverse cultural milieu, underscores the need for further research on chatbot integration [14].

Existing literature predominantly features commentaries and quantitative analyses, with a gap in qualitative or mixed-methods research on chatbots' impact across different cultures. This study aims to bridge this gap by exploring the experiences, challenges, and opportunities associated with ChatGPT among health sciences educators and students for self-directed learning.

II. Aim and Objectives

The aim of this study is to explore the experiences, challenges, and opportunities faced by health sciences educators and students when using ChatGPT AI for self-directed learning. The study is guided by the following research objective:

- To identify students' and educators perspectives on the potential challenges and opportunities of using chatbot technology.

III. Methods

A. Study Design

Considering the novel application of these technologies within Arab culture, a descriptive qualitative research design was employed. This approach facilitates a deep understanding of both educators' and students' experiences with chatbot technology in health sciences education.

B. Study Participants and Settings

Participants included health sciences students across all four levels and academic educators from the University of Sharjah, UAE. Both ChatGPT users and non-users were interviewed face-to-face to understand their acceptance of and experiences with this technology. Data collection occurred during the fall semester of the academic year 2023/2024, with interviews lasting between 20 to 45 minutes on average.

C. Instruments

Semi-structured interviews were conducted to allow participants the freedom to share extensive information. The goal was to uncover insights not accessible via questionnaires,

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thereby gaining a deeper understanding of the subject matter. Participants who completed the questionnaire were invited for an interview at their convenience, enhancing the data with detailed narratives. Questions included:

- What kinds of inquiries do you present to ChatGPT and why?
- Could you share your experiences with using technologies like ChatGPT?
- What challenges have you encountered while using this application, and how might they be addressed in the future?

D. Data Collection

Eligible students and educators interested in participating were scheduled for interviews with the principal investigator at their convenience. All interviews were conducted face-to-face and recorded for accuracy

E. Data Analysis

Content analysis was utilized to evaluate responses from the semi-structured interviews. Relevant statements were coded to distill their essence, with patterns identified across transcripts. These codes were then organized into themes using a tree diagram, facilitating a structured interpretation of the data. This process involved multiple discussions to reach a consensus on the thematic structure of the findings.

F. Ethical considerations

Ethical approval was obtained from the Research Ethics Committee of the University of Sharjah (Reference no.: REC-23-08-05-01-F). The students and educators who were available and voluntarily willing to be involved in the study were signed a consent claiming whether they agreed to participate. The informed consent included a brief description and aim of the study, information about the confidentiality and anonymity of the results obtained from the study, and the annotation that all of the results used only for scientific purposes. The collected data remained confidential and anonymous and only available to the researchers involved in this study.

IV. RESULTS AND DISCUSSION

The exploration of nursing students' and educators' experiences with ChatGPT AI for self-directed learning unveiled a spectrum of perspectives, highlighting the tool's potential benefits alongside significant concerns. This study's findings reveal a nuanced understanding of ChatGPT's role in health sciences education, reflecting both the opportunities it presents and the challenges it poses.

A. Efficiency and Accessibility

ChatGPT was praised for its ability to enhance academic productivity. Student (8)'s comment, "It is amazing, [I] used it in writing my CV and preparing my presentations, it saves my [user] time and efforts," underscores the value of ChatGPT in facilitating tasks that are both time-consuming and critical for students' professional development. However, limitations related to offline functionality and language inclusivity, as noted by Student (6), "Despite its several functions, but it doesn't work offline, and Arabic language is not introduced yet in this technology sector," highlight significant barriers to the tool's accessibility and utility, particularly in linguistically diverse educational settings.

B. Ethical and Educational Concerns

Ethical considerations emerged as a prominent theme, especially among educators. Educator (2)'s reflections on the ethical use of ChatGPT, "Despite its functionality in finding out the latest guidelines, [I] always concern on the ethical considerations…[I] ask repetitively, is it ethical?, is it safe,…etc," signal the need for ongoing dialogue about the responsible integration of AI in educational contexts. This concern resonates with the broader academic community's apprehension towards maintaining integrity and ethical standards in the face of rapidly advancing technologies.

The skepticism expressed by non-users, particularly regarding ChatGPT's impact on learning and skill acquisition, further complicates the narrative. Student (11) and Educator (5) voiced concerns about the potential for ChatGPT to diminish attention spans and impede the development of critical higher-order thinking skills necessary in health sciences. These perspectives underscore a fear that reliance on AI might lead to a degradation of essential academic and professional competencies.

C. Academic Integrity

The issue of academic integrity was a critical concern, especially highlighted by Student (4)'s apprehension about plagiarism, "I tried to use it [ChatGPT], however, I stopped….I am concerned about plagiarism and losing marks." This reflects a broader worry about how AI tools might inadvertently foster academic dishonesty, underscoring the importance of developing robust guidelines and educational strategies to mitigate such risks.

V. CONCLUSION

This study illuminates the complex landscape of perceptions towards the use of ChatGPT in health sciences education. While the tool offers significant advantages in terms of efficiency and resourcefulness, its full potential is curtailed by concerns over accessibility, ethical implications, and the impact on learning processes. The findings advocate for a balanced approach to integrating AI technologies in educational settings, emphasizing the need for careful consideration of both their transformative potential and the challenges they introduce. Future research should aim at addressing these concerns, particularly through the development of strategies to enhance linguistic accessibility, uphold ethical standards, and ensure the integrity of the learning experience.

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