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The transformative potential of artificial intelligence in dental education

El potencial transformador de la inteligencia artificial en la educación odontológica

O potencial transformador da inteligência artificial na educação odontológica

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Dear Editor,

We are writing to share our reflections on recent ChatGPT-4 update and its implications for dental education. This instrument is a disruptive technology that has the potential to revolutionize the learning experience. As healthcare professionals and academics, we believe it is essential to assess the advantages and disadvantages of this tool, as well as the opportunities and challenges it presents for both students and educators.

ChatGPT-4 offers content tailored to everyone's requirements, making it particularly advantageous for students with different learning styles, paces, and levels of knowledge (1). Additionally, individuals can access a vast amount of information, including scientific articles, clinical cases, and educational resources, empowering them to delve deeper into topics of interest and stay at the forefront of the latest advancements in dental sciences (1). Furthermore, the tool can simulate realistic clinical scenarios to practice clinical decision-making and patient communication in a safe and controlled environment, thereby enhancing students' skills and confidence to transition to real clinical practice with patients (2). Finally, this tool provides immediate feedback on learners' performance, identifying areas for improvement and reinforcing learned concepts, facilitating more effective and efficient learning (2).

However, excessive dependency on ChatGPT-4 may impede the development of students' critical thinking and analytical skills (1, 2). Thus, it is essential to balance the use of technological tools with the cultivation of cognitive abilities. Moreover, the open access to information through ChatGPT-4 exposes students to the risk of

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encountering inaccurate or outdated information (3). Additionally, as artificial intelligence (AI) models learn from extensive datasets that may contain inherent biases related to race, gender, socioeconomic status, or other factors, ChatGPT-4 could perpetuate these biases in its outcomes (2). Consequently, it is crucial to critically evaluate and verify the information provided by ChatGPT against reliable sources.

Having a comprehensive understanding of both the advantages and disadvantages of this tool allows us to explore the opportunities it presents for utilization throughout the teaching and learning process. ChatGPT-4 can be employed by educators to create interactive and engaging educational materials, such as simulations, games, and quizzes (1, 3). These activities can be integrated into classes to encourage active participation and keep student motivation. Furthermore, beyond the classroom, ChatGPT-4 can serve as a valuable tool for information retrieval, supporting further learning (3, 4).

Despite the advances and opportunities that this technology offers, certain challenges related to its use persist. Strategies must be implemented to integrate AI tools into dental curriculum, ensuring that their use complements and enriches the learning experience without entirely replacing traditional teaching methods (5). Additionally, educators need to be trained in using these tools to maximize their potential and minimize associated risks (6). Furthermore, ethical guidelines must be established for the use of AI tools in dental education, promoting integrity and ensuring appropriate use (6).

In conclusion, AI tools possess transformative potential for dental education, given their applicability in teaching and learning. However, it is crucial to acknowledge the drawbacks and challenges associated with this technology. We should harness this technology to its fullest potential, always with a strong emphasis on ethics and responsibility, ensuring that we equip dental professionals with the highest level of skills to address real-world challenges.

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