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Impact of Research-Informed Teaching and Case-Based Teaching on Memory Retention and Recall in University Students

Authors : Durvi Yogesh Vagani

Abstract : This research paper explores the effectiveness of Research-informed teaching and Case-based teaching in enhancing the retention and recall of memory during discussions among university students. Additionally, it investigates the impact of using Artificial Intelligence (AI) tools on the quality of research conducted by students and its correlation with better recollection. The study hypothesizes that Case-based teaching will lead to greater recall and storage of information. The research gap in the use of AI in educational settings, particularly with actual participants, is addressed by leveraging a multi-method approach. The hypothesis is that the use of AI, such as ChatGPT and Bard, would lead to better retention and recall of information. Before commencing the study, participants' attention levels and IQ were assessed using the Digit Span Test and the Wechsler Adult Intelligence Scale, respectively, to ensure comparability among participants. Subsequently, participants were divided into four conditions, each group receiving identical information presented in different formats based on their assigned condition. Following this, participants engaged in a group discussion on the given topic. Their responses were then evaluated against a checklist. Finally, participants completed a brief test to measure their recall ability after the discussion. Preliminary findings suggest that students who utilize AI tools for learning demonstrate improved grasping of information and are more likely to integrate relevant information into discussions compared to providing extraneous details. Furthermore, Case-based teaching fosters greater attention and recall during discussions, while Research-informed teaching leads to greater knowledge for application. By addressing the research gap in AI application in education, this study contributes to a deeper understanding of effective teaching methodologies and the role of technology in student learning outcomes. The implication of the present research is to tailor teaching methods based on the subject matter. Case-based teaching facilitates application-based teaching, and research-based teaching can be beneficial for theory-heavy topics. Integrating AI in education. Combining AI with research-based teaching may optimize instructional strategies and deepen learning experiences. This research suggests tailoring teaching methods in psychology based on subject matter. Case-based teaching suits practical subjects, facilitating application, while research-based teaching aids understanding of theory-heavy topics. Integrating AI in education could enhance learning outcomes, offering detailed information tailored to students' needs.

Keywords : artificial intelligence, attention, case-based teaching, memory recall, memory retention, research-informed teaching
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