An E-Learning Environment Based on the Electronic Brainstorming Strategy Techniques (Parallel - Anonymous) and its Effect on Developing Achievement, Problem-Solving, Creative Thinking, and Emotional Stability among Students of Education Technology

This research aimed to reveal the effect of the two electronic brainstorming techniques (parallel - anonymous) within an e-learning environment on developing achievement, problem-solving skills, creative thinking, and emotional stability among education technology students. The primary research sample consisted of (70) first-year education technology students from the Faculty of Specific Education at Fayoum University during the academic year 2020/2021. They were randomly selected and assigned to two groups. To achieve this aim, the researchers designed an e-learning environment based on an electronic brainstorming strategy, utilizing two techniques of electronic brainstorming (parallel - anonymous); according to educational and technical design standards for developing e-learning environments and the electronic brainstorming strategy. Consequently, the researchers prepared measurement tools, verified their validity and reliability, and then applied them. These instruments included an achievement test on the topics of educational museums and exhibitions, a problem-solving scale, a creative thinking scale, and an emotional stability scale. The results confirmed that the e-learning environment based on the two electronic brainstorming techniques (parallel - anonymous) has a significant impact on developing problem-solving skills, creative thinking, emotional stability, and academic achievement among the students in the study sample. Furthermore, the students in the second experimental group, who studied using the electronic brainstorming technique (anonymous), demonstrated greater positivity and effectiveness compared to the students in the first experimental group, who studied using the electronic brainstorming technique (parallel), in the cognitive aspect and developing problem-solving and creative thinking skills. The students in the first experimental group, who studied using the electronic brainstorming technique (parallel), outperformed those

in the second experimental group, who studied using the electronic brainstorming technique (anonymous), in developing emotional stability. Based on the findings, a set of recommendations and suggestions were presented, including the expansion of conducting further research and studies related to electronic brainstorming. Additionally, the necessity of encouraging university faculty members to utilize the electronic brainstorming strategy in university teaching was emphasized, along with the importance of e-learning centers adopting the production of e-courses based on the electronic brainstorming strategy in its various techniques, while avoiding the production of courses that present content to learners without following modern educational methods.