The effect of the interaction between two flipped classroom strategies (Problem Solving - Open Investigation) and mental capacity level (High - Low) on improving academic progress and reducing the cognitive load of educational technology students

The study aimed to reveal the interaction between the two strategies of the flipped classroom (problem solving / free investigation) and the level of mental capacity (high / low) among second-year educational technology students at the Faculty of Specific Education, Fayoum University and their impact on increasing academic achievement and reducing their cognitive load. To achieve this, both the descriptive approach and the experimental approach were applied. The study sample - after applying the classification tool - was divided into two groups, one of them: students with high mental capacity, and the second: students with low mental capacity, then applying the two strategies of the flipped class (free investigation). / and problem solving) on them through (educational videos) that students are provided with sufficient time before the official lecture, and making the lecture time for discussion, questions and interaction. Free) on increasing students' academic achievement and reducing their cognitive burden, as well as increasing their higher cognitive levels (analysis, application, synthesis, and evaluation), especially students with high mental capacity, while students with low mental capacity affected the level of cognitive achievement at two levels (remembering. and understanding), and it also had an impact on increasing the sense of reassurance and confidence in their abilities and abilities to implement and implement the required activities, as well as increasing the scientific and emotional participation in the working teams Different education, increasing self-confidence and independence in the individual work environment before the formal school class, here and in turn the current study recommends the importance of applying the strategies of the flipped class in university stages; Its effectiveness in increasing academic achievement, reducing the cognitive load, and developing higher-order thinking skills among students.