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THE EFFECTS OF PROBLEM-BASED LEARNING VERSUS STRUCTURED TUTORIALS ON STUDENT ACHIEVEMENT IN A RELATIONAL DATABASE DESIGN ACTIVITY DURING ONLINE CONCEPT LEARNING (142 pp.)

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The purpose of this study was to compare the effectiveness of two modes of instruction when teaching a complex topic in an online course. Additional variables included instructor monitoring and attitude towards group learning. Students in online courses that included Microsoft Access were the participants of the study. Participants were given either a problem based learning activity or a structured online tutorial to learn how to create an effective relational database.

Using the difference between pre- and post-test scores, there were no significant results. However, there were several interesting trends. Participants who engaged in the problem based learning activity performed better on the posttest than those who were given the structured online tutorial. One hypothesis was that students who preferred working in groups would perform better when given the problem based learning activity, and those who preferred working alone would perform better with the tutorial; results showed that those who preferred working alone performed better regardless of activity, and students who preferred to work in groups scored much lower on the posttest when assigned the tutorial, indicating that attitude towards group learning was more important for those who preferred working in groups.

Understanding how students learn and implementing the best ways to teach complex topics will result in greater comprehension and performance. More research is needed to determine best strategies, but this study introduced many combinations of teaching styles, attitudes towards group learning, and instructor communications, which all impact student achievement.