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A Comparative Study of Traditional and Flipped Classroom on Students' Statistical Reasoning

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ABSTRACT The intent of this experiment is to investigate how flipped classrooms affect students' statistical reasoning. This study comprised 109 students, wherein the experimental group comprised 51 while 58 students were part of control. The Statistical Reasoning instrument was used to acquire the scores, and the Mann-Whitney and Wilcoxon Signed Rank Test were utilised for analysis. The findings revealed that both groups scores were comparable and both have significantly improved and numerous students achieved analytical levels of reasoning. It was concluded that the flipped classroom is comparable to the traditional method and that improvement depends primarily on the feedback mechanism rather than in-person lectures. Further, this study suggests implementing flipped classrooms in basic education and other undergraduate courses to address the prevailing problem of classroom shortage. To produce more rigorous results, the researchers recommend to reassess the research instrument, improve sample selection techniques, and employ a mixed method approach to further improve the flipped classroom implementation.