

UTILIZATION OF LIMIT QUEST IN TEACHING LIMITS IN CALCULUS AMONG SECOND-YEAR MATHEMATICS MAJORS AT BESTLINK COLLEGE OF THE PHILIPPINES

ABSTRACT

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Teaching limits in calculus can be challenging because the concept of approaching a value is abstract and foundational to later topics. This study examined "Limit Quest," an instructional tool using structured examples and progressive practice exercises, to improve the conceptual understanding and problem-solving skills of second-year Mathematics majors at Bestlink College of the Philippines. The study employed a quasi-experimental design involving 68 second-year Bachelor of Secondary Education Mathematics majors selected through total-population sampling. Researcher-developed pretests and posttests measured learning gains, while a survey questionnaire assessed student perceptions. Most respondents were aged 19–23 (83.82%), and 58.82% were female. Data were analyzed using descriptive statistics, weighted mean, and a t-test. Limit Quest was associated with a significant improvement in students' comprehension of limits ($t = 15.25$, $p = 0.00001 < 0.05$). Students rated the tool favorably for active engagement ($\bar{x} = 3.83$), problem-solving skills ($\bar{x} = 3.77$), reflection ($\bar{x} = 3.86$), social interaction ($\bar{x} = 3.81$), and application of theory to real-world situations ($\bar{x} = 3.77$). Reported challenges included the need for facilitator support, adjustment difficulties among first-time users, and time constraints. The findings support Limit Quest as an instructional material for improving engagement, comprehension, and problem-solving in the study of limits. Its integration into calculus instruction may help make abstract concepts more concrete and interactive, provided that adequate guidance and implementation time are available.

RECOMMENDED CITATION

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