

ARCADEMICS E-MATERIALS IN MULTIPLICATION OF WHOLE NUMBERS OF GRADE 4 LEARNERS

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Abstract

This study investigates the impact of Arcademics e-materials on teaching multiplication to elementary students. With the rapid integration of technology in education, platforms like Arcademics offer interactive tools and personalized learning experiences that enhance mathematical understanding, particularly for students who face learning difficulties. The study explores how these e-materials support self-paced learning, provide immediate feedback, and give access to resources that extend beyond traditional classroom methods. This study employed a true experimental design with cluster sampling, involving 80 Grade 4 students divided into two groups: Non-Arcademics and Arcademics. Data were collected through pre-tests and post-tests, along with a survey questionnaire assessing student engagement, motivation, and interactivity. The results were analyzed using statistical methods, including frequency and percentage distributions, weighted means, and z-tests. Findings revealed that the use of Arcademics significantly enhanced student motivation, conceptual understanding, and interactivity. Students strongly agreed that the platform positively influenced their learning experience. Pre-test results indicated similar levels of multiplication proficiency across both groups. However, post-test results showed a marked improvement in the Arcademics group, with a mean score of 17.90 compared to 8.78 for the Non-Arcademics group. Statistical analysis confirmed a significant difference between the two groups ($p < 0.00001$), supporting the effectiveness of Arcademics in improving multiplication skills, consistent with the MCI E-learning theory (Jeong Yong Ahn, 2023). Additionally, limited access to devices was noted as a factor affecting student participation and engagement. Based on these findings, the researchers developed guidelines for effectively integrating Arcademics into the curriculum. These include providing clear instructions, incorporating follow-up activities that connect multiplication concepts to real-life applications, and implementing strategies to actively engage students. The study highlights the potential of educational games like Arcademics to enhance multiplication skills while emphasizing the importance of teacher competence, device accessibility, and thoughtful integration of digital tools to maximize learning outcomes.

Keywords: arcademics, multiplication, and true experimental