

## VISUALIZATION OF THE RIEMANN DARBOUX SUM AND ITS PROPERTIES WITH GEOGEBRA

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**Abstract:** Underachievement in mathematics is one major challenge for undergraduate - level students in Nepal. The results of Tribhuvan University (TU) show that students struggled with the subject Real analysis. Many teachers also struggle to teach this subject effectively due to the lack of conceptual knowledge, and technology. Therefore, conceptual understanding of fundamental terms of real analysis needs to be taught effectively at the undergraduate level to ensure smooth content progression into a higher level. Several studies advocated that the integration of information communication technology (ICT) with teaching and learning activities in mathematics enhances students' learning of the mathematics contents. So, this study visualizes the conceptual understanding of Riemann sums and proof of their properties using GeoGebra software of experimental teaching for the undergraduate level on TU. The study was based on constructivism-learning theory. The experiment showed that blended GeoGebra and usual practice processes promote conceptual understanding of students of the Riemann sum and proof of its properties.

**Keywords and Phrases:** Partition, bounded function, upper sum, lower sum, technology.

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