PRINT: ISSN 0975-1122 ONLINE: ISSN 2456-6322
International Journal of
EDUCATIONAL SCIENCES

Full text open access online (Since 2009)

PRINT: ISSN 0975-1122 ONLINE: ISSN 2456-6322
Int J Edu Sci, 53(2): 115-131 (2026)
DOI: 10.31901/24566322.2026/53.2.1428

Impact of Academic Strand Selection on the Performance of Students in Calculus I in Camarines Sur Polytechnic Colleges in Camarines Sur, Philippines

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KEYWORDS Calculus I Performance. Bachelor of Science in Math and Applied Math Students. Senior High School Strands. Bridging Program. Mathematics Education

ABSTRACT A Descriptive-comparative study examined the relationship between Senior High School Strand selection, particularly STEM and non-STEM, and the Calculus I performance of first- and second-year BS Mathematics and BS Applied Mathematics students at Camarines Sur Polytechnic Colleges. Using a peer-reviewed teacher-made test that covered major Calculus I topics, that is, Limits and Continuity, Derivatives and Differentiation, Applications of Derivatives, and Indefinite Integrals and Application, data were gathered through total enumeration. Statistical analyses employed included Kruskal-Wallis H-Test, DSCF post hoc Test, and Brunner-Munzel Test. Results showed that STEM strand students outperformed their non-STEM counterparts, highlighting stronger preparedness and advantage in college-level Calculus. This underscored a noticeable gap between the two groups. To address this disparity, the study recommends the implementation of bridging programs for non-STEM graduates who intend to pursue mathematics-oriented degree programs, thereby enhancing their readiness and improving performance in foundational college mathematics.