

The Effects of Learning Integrals and Its Application Using Ti-Nspire Cx Graphing Calculator's Towards Mathematics Pre-Service Teachers' Mathematical Reasoning.

- **Author(s):** Amila Saliza Abd Wahab ,Nor'ain Mohd Tajudin ,Mohan Chinnappan ,Endah Retnowati ,Yerizon
- **Abstract:** Reasoning is critical in learning of mathematics for the reason that it is a basis of mathematical ability and their absence causes students to be unsuccessful and unable to engage in mathematics teaching. Recent technological advancements have opened the way for mathematics educators to use the capabilities of these technology tools in providing teaching and learning to reinforce reasoning skills. This quasi-experimental non-equivalent pre-post-test design study investigated the effectiveness of using TINspire CX graphing calculator's activities in learning Integrals and Application of Integration topic towards mathematics pre-service teachers' mathematical reasoning. A sample of 44 students was randomly chosen to take part in the study such that there are 22 pre-service mathematics teachers in the experimental group and there are 22 pre-service mathematics teachers in the control group. The instrument used for the pre and post- test was the Mathematical Reasoning test (MRT) to measure the pre-service teachers' level of reasoning. The data test were analysed quantitatively using the inferential statistics, namely the independent sample t-test and the paired sample t-test. The findings revealed that the experimental group that learned the topic of Integrals and Application of Integration using the TINspire CX graphing calculator activity module performed better in the MRT as compared to the control group that underwent learning using conventional method. In conclusion, this study is very meaningful and relevant nowadays because it displays a different method of teaching and learning at the level of higher education institutions that is by integrating graphing calculator technology in developing the capability of pre-service mathematics teachers with reasoning skills.
- **Keywords:** Mathematical Reasoning test (MRT), TINspire CX, technological advancements