
Correlation Research on the Application of Scientific Debate Strategy to Academic Performance Based Mathematical Prior Ability of Students in The Integral Concept

Yani Ramdani

University Islam Bandung (UNISBA) Indonesia.

*Corresponding author email id: yaniramdani06@gmail.com

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Abstract – This research examines the influence of learning with scientific debate strategy on academic performance through the enhancement of mathematical competence of the student based MPA in the integral concept. The study design was a quasi-experiment that involving 200 students. The research instrument was mathematics competency tests with indicators: (1) Understanding of concepts; (2) Procedure fluency; (3) Strategic competence; (4) Adaptive reasoning; (5) Productive disposition. Data of mathematical competence enhancement were analyzed using Mann Whitney-U test. Data of pretest and posttest were analyzed by Kruskal-Wallis and ANOVA. Students who follow Integral Calculus learning with scientific debate strategy are significantly better than students who follow conventional learning. The Mathematical Prior Ability (MPA) factor in conventional class has a significant influence on academic performance through the enhancement of student mathematical competence. The Mathematical Prior Ability (MPA) factor in the class of scientific debate strategy did not have a significant influence on academic performance through the enhancement of student mathematical competence.

Keywords – Scientific Debate, Academic Performance, Mathematical Competence, ANOVA, Kruskal-Wallis.
