

USING APOS THEORY
In LEARNING ABSTRACT ALGEBRA
(A Class Action Research in UPI)

by :

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ABSTRACTS

APOS theory is a learning theory developed by Ed Dubinsky together with RUMEC (Research Mathematics Educations Community). RUMEC designed instruction is usually done through ACE Cycle (*Activities, Class Discussion and Exercises*). For this purpose the students are engaged in computer programming as well as various cooperative learning activities. Part of the purpose of utilizing computer activities is to foster specific constructions. This is followed by class discussion utilizing cooperative learning techniques to facilitate assimilation and accommodation. Classroom tasks often encourage construction through reflection. Finally the students are assigned exercises to reinforce and perhaps extend their ideas.

Based on the research in UPI, this model could help the students prepared the lectures, therefore the students were more active mentally and physically. Then based on item problems analysis it was founded that the students could explain the definitions or theorems clearly but they could not use them to solve the real problems. Moreover we found that the students could construct mental constructions APOS (Actions, Process, Object and Schema) for every concepts, but how deep the mental constructions were constructed still need the extended research.

Key words : APOS Theory, ACE Cycle.