Harmonization of active learning: a driver of nurturing engineering learner's motivation?

ABSTRACT

The realization of fostering continous education requires foundations in an educational surrounding. This is pertinent to learners with an engineering background for they should not only be prepared with technical skills, but also equipped with an outstanding drive to enhance motivation during academic sessions. A compulsory subject in the technical institution encompasses Engineering Mathematics where learners require appropriate encouragement in order to accomplish the learning outcomes and fulfil the needs of the syllabus. The outstanding achievement in content mastery is closely related to the implementation of active learning. Instructional methods such as role playing, mastery learning, case studies, cooperative learning and problem solving exercises are important. The fundamental aims of this paper are to determine studentsø acceptance of active learning, the relationship between role playing and studentsø motivation and to identify the most challenging chapter in the Engineering Mathematics 3 (BA301) course. The Pearson correlation of two variables was used to analyse the questionnaires answered by 80 student respondents. The sample comprised of two groups (DKA 3B and DKA 3C) of third semester (June 2012) Civil Engineering students at a polytechnic in Merlimau, Melaka. The sample selection was based on the engineering students enrollment in Engineering Mathematics 3. The findings indicated the existence of a significant relationship between role playing and studentsø motivation ($r=0.6159$). The most challenging chapter was related to the Numerical Method. The findings highlighted the need for meaningful experiences acquired from active learning and reinforcement strategies by instructors in order to ensure students could cater with tough situations and grasp the challenging materials. Hence, the studentsø motivational spirit and strength of pedagogical process apparently should be encouraged.

Keyword: Active learning; Students' motivation; Role playing; Numerical method