

Methods to study enhancement of problem solving skills in engineering students through cooperative problem-based learning

Abstract:

This paper explains methods used in determining enhancement of problem solving skills in engineering students undergoing Cooperative Problem-Based Learning (CPBL). The transformation of learning maturity, from novice to expert, is examined using both, quantitative and qualitative methodologies. The process of enhancing problem solving skills is examined qualitatively using discourse analysis, interviews and reviews of student's reflection journals. The categorization and analysis are done by mapping Piaget's definition of novice versus expert for cognitive activities, with SOLO taxonomy of learning for cognitive level. This is then mapped with problem solving cycles using the House of Quality (HOQ) approach for quantification.