

Problem Based Learning versus Project Based Learning in Electrical-Electronics Engineering Programs

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Abstract

The problem based learning and project based learning are two different but closely related examples of active learning methods used in engineering education programs as well as in non-engineering programs. The problem based learning is based on introducing a real engineering problem usually within a scenario to the students so that the students are asked to define the problem first and then produce a number of alternative solutions by brain storming in structured problem based learning sessions and then converge to a solution by elimination based on getting new information and on conducting analysis and/or experimentation. In the project based learning, a real problem is also given to the students but with a mini scenario defining the targets which might be a design and/or implementation task to be accomplished within economical, technical constraints concerning also environmental issues. The paper presents an evaluation of both methods in a comparative way with considering the experience in an electrical-electronics engineering program which had conducted problem based learning for 6 years. A discussion on meeting ABET and MUDEK criteria in problem based learning and in project based learning is also included in the paper.