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Procedia
Social and Behavioral Sciences

Procedia - Social and Behavioral Sciences 66 (2012) 53 - 63

The 8th International Language for Specific Purposes (LSP) Seminar - Aligning Theoretical Knowledge with Professional Practice

Developing Higher Order Thinking Skills and Team Commitment via Group Problem Solving: A Bridge to the Real World

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Abstract

This research will focus on a futuristic real world case- the Great Barrier Reef adapted from the Future Problem Solving (FPSI) website. The above scenario will be able to stimulate learners and engage them as budding engineers in a problem solving task. Mid way through the project they go through a viva session and are challenged on their innovation. The final presentation is to a group of in-house engineers from the faculty of engineering. Hence, this research will explore the effectiveness of group problem solving in developing students' higher order thinking, problem solving and team skills. This is a mixed method research and the primary method is a questionnaire to determine students' attitude towards the project. The qualitative study will probe deeper into students' experiences and instructor and panel of evaluators' perspectives toward the task. Data is gathered via interviews, observations, document analysis and the final evaluations. A key finding will be the power of small group collaboration and real world experiences in harnessing students higher order thinking and team skills.

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Selection and peer-review under responsibility of the LSP 2012 Committee, Language Academy, Universiti Teknologi Malaysia.

Keywords: collaboration; problem solving; design; higher-order thinking skills; team skills

1. Introduction

With the emphasis today on the employability of graduates, the debate is on whether classroom practices have much relevance to the 'real world'. According to Bagot's [1] research report, problem-solving, collaboration and communication skills are the top skills for graduates of today and tomorrow to possess. The above report on university graduates at the workplace revealed that most graduates today are very book smart and technically

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