

Understanding Capacity in Creativity and Problem Analysis among Engineering Students: A Preliminary Study

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Insight into student understanding of their own learning is a key element in being able to enhance curriculum design and implement effective approaches in student-centred learning. In this paper we examine the findings of a preliminary study into student perceptions of their own capacity for thinking creatively and analysing problems. This preliminary study serves as a pilot to a larger joint University study between Queens University, Canada and the University of Adelaide involving design engineering students. Results of the pilot study will inform the conduct of a longitudinal study, projected to be administered over a three year period. The aim of the longitudinal study relates to three specific categories: to serve as a catalyst for the participants to develop further skills in reflective practice, necessary to self-regulated learning and self-efficacy; to obtain data that will provide insight into the ways in which students think, feel about, and perceive their own learning related to aspects of their studies in design engineering and; to contribute to the field of knowledge related to student perception of learning, self-regulation of learning, self-efficacy and the links to life-long learning.

This paper presents the results of phase one of the pilot study. The focii of this investigation consists of a) trialling the instrument in an authentic course environment to test implementation and applicability of the survey including ease of understanding by the respondents, and b) collection and analysis of preliminary data on second year engineering student perceptions of their own learning related to creative thinking and problem analysis skills. Examination of these results discusses emergent themes and makes initial recommendations on curriculum enhancement as well as recommendations on survey instrument design and implementation relating to the ongoing study.