Evaluating Student Perceptions in Peer to Peer Learning and Assessment Practices in Design Based Learning Environment

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ABSTRACT

Considering the past decade, the changes involved in learning and teaching have been in terms of strategies, methods and practices to learning and teaching; assessment method; interface between a teacher and student; communication and feedback; self-reflective practices and designing pro-industry curriculum. For all the stakeholders involved, it becomes vital to know the student perception about the learning and teaching. The purpose of the paper is to evaluate the perception of the student experience on peer to peer learning and assessment. Issues related peer to peer learning has been identified based on the student response to a survey conducted at the end of the unit. The purpose of the paper is also to serve as a medium to contribute to the existing knowledge base on peer to peer learning and assessment in design/project based learning. The outcome of the paper is to review the existing literature, innovate a new approach and suggest a mutually acceptable solution to the issues related to peer to peer learning and assessment.

KEYWORDS
Design Based Learning, Learning Outcomes, Peer to Peer Assessment, Peer to Peer Learning

INTRODUCTION

Education has been a rapidly changing field during the last decade. The changes have been in terms of strategies, methods and practices to learning and teaching; assessment method; interface between a teacher and student; communication and feedback; self-reflective practices and designing pro-industry curriculums. According to Struyven et. al, constructivist learning theories are driving these changes where the onus lies on the student to play an active role in making sure the changes are implemented for the betterment of learning and teaching (Struyven, Dochy, & Janssens, 2003). For all the stakeholders involved, it becomes vital to know the student perception about the learning and teaching approach. Some of the questions which might arise are: how effective is the methodology, how efficient is the knowledge transfer, how reliable is the assessment technique and how assured a pedagogue is about the self-reflective practice or the feedback? The answer to some of the question will lead to innovation in learning and teaching, identifying the area for improvement and implementing better practices of

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learning and teaching. Teaching methodologies in relation with the context, tools, delivery and learning environment play an important role for success of a unit delivery. The learning environment can vary depending on the delivery style like the traditional way of teaching is more of a class room based, old style teaching, individual and involves written assessment-examinations; whereas a modern learning environments like Project Based Learning (PBL) and Design Based Learning (DBL) characterised by team learning, self-motivation, online tools and research based assessments.

There is always a constructive debate across the university sector on use of traditional, class room based, assessment by exam, type of learning and teaching approach; and non-traditional, student driven learning, design based learning and teaching approach. The universities are putting in their best efforts in offering programme with a hope of producing graduates with employability skills (Polishetty et al., 2014). These efforts to remain a leader in engineering education has led to the School of Engineering, Deakin University to go for a modified learning and teaching practice known as Project Oriented Design Based Learning (PODBL) (Chandrasekaran, 2014). The advantage with PODBL is its constant engagement with industry from designing the curriculum to providing internships. PODBL implementation is at an early stage to comment on its pros and cons. Instead, the author would like to consider and speak about the relevant DBL practice in the current paper. The relationship between a DBL practice and engineering education has been explained using a case study in an article written by the author for AAEE 2014. Engineering education is a combination or integration of solid knowledge on the basis of natural sciences and a good knowledge in some aspect of technology (Polishetty et al., 2014).

Design Based Learning (DBL) is a one of the modern and constantly evolving learning and teaching practice. As the definition says design forms the core of the practice where the student with his cognitive skills set and theoretical knowledge (from seminars) has to successfully demonstrate his ability to bring an innovative solution to a design problem. DBL has its root from a similar approach adopted in a research environments known as design based research (Wang & Hannafin, 2005). Peer to peer learning and assessment is an integral part of DBL. Creative arts and design based unit assessment are some of the successful case studies using peer to peer assessment. The paper written by Mike Searby et. al. has illustrated how successful peer to peer assessment has been in a creative arts programme such as B.A-Music at Kingston University (Searby & Ewers, 1997).

Assessment is an important phase of the learning and teaching process. The definition of assessment varies from a student and academic point of view. The common view among the students is that assessment is grading their intellectual abilities in one particular subject area. From a teacher point view, assessment can be defined as making sure the learning outcomes have been met and also to evaluate the ability of the student towards gaining the learning outcome/expertise. According to Nancy Falchikov and Judy Goldfinch, teacher and student (peer) assessment can arrive on a common platform provided the judgement is based on a global criteria which is easy to understand rather than marking based on numerous individual criteria (Falchikov & Boud, 1989). According to Ronald Barnett, the need for assessment arises in order to judge and evaluate the student worthiness in terms of academic development. Worthiness is based on a set of complex considerations such as academic virtue, intellectual ability and issues with relative weighting (Barnett, 2007). In modern learning and teaching practices, the involvement of students in assessment practices has shown an increasing trend. Assessment itself as process depends on a person ability to self-reflect and judge a performance against a pre-defined assessment criteria (Falchikov & Goldfinch, 2000). The quality of assessment in education especially engineering education has always been a subject of debate. According to an article written by Frans et. al, the quality of assessment is based on the intrinsic values of education such as pursuit of knowledge and extrinsic values of education such as service to society (Van Vught & Westerheijden, 1994). The ubiquitous need to rethink on the relationship between learning and its assessment in order to improve the quality of assessment involving reflective practices has led to three type of assessment practices, self, peer and co-assessment practices (Dochy, Segers, & Sluijsmans, 1999). The world has witnessed a change from era of testing to the era of assessment.
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