

Issues and Challenges in Implementing Outcome Based Education in Engineering Education

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Abstract

In recent years, the implementation of outcome based education (OBE) has been much emphasized in developed and developing nations which led to becoming the focal point for educational reforms. In outcome based education, students are responsible for their own learning and the assessment of learning are based on the outcomes instead of the contents being taught. However, much criticism against the OBE has also been presented in various papers regarding the actual implementation of OBE. In this paper, we discussed the issues and challenges of implementing an outcome based education in engineering education particularly in Faculty of Engineering, UNIMAS, Malaysia.

1. Introduction

Outcome based education (OBE) is the latest paradigm shift sweeping the education system. The increasing need to produce more able and competitive learners for the globalized world has led to a reform in the education system whereby the learning is no longer a unilateral process but shifted its weight to be borne by the learners. The OBE itself is a recurring education reform model which is based on a student centered learning philosophy and focuses on the output (outcomes) instead of the input (taught) [1]. In contrast with traditional education, OBE puts much emphasis on the learning process being actively pursued and managed by the students themselves and the lecturers are only acting as facilitators in the students' quest for knowledge. Specific and clearly defined outcomes must be described to the students so that the students will be able to set their own expectations and means to achieve the desired outcomes. As such, the role of the lecturers is to guide and provide directions for the students to navigate their own learning. With the implementation of OBE, this has caused a revolution in the way the academia view the learning process and its relevant assessment. The assessments of student learning are no longer solely dependent on objective oriented exams. With OBE, the assessments methods of various skills, knowledge and attitudes become diverse and various learning pedagogies are introduced to ensure the achievement of the outcomes. Learning tools such as problem based learning, integrated design project, case studies are some of the methods utilized to assess subjective skills acquired by the students. The defined outcomes must be specific, measureable, achievable, realistic and time-based.

2. Outcome Based Education in Engineering Education

In engineering education, the outcome based approach has been mandated as compulsory for accreditation of an engineering programme for signatories of the Washington Accord. The Washington Accord is a mutual agreement of standards and qualifications criteria for engineering programmes in the signatory countries. In 2013, Malaysia has become a provisional member of Washington Accord together with United States, United