

The Effectiveness of Problem-Based Learning in Technical and Vocational Education in Malaysia

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Abstract

Purpose: The purpose of this paper is to examine the impact of the use of problem-based learning (PBL) with engineering students at a technical university in Malaysia.

Design/methodology/approach: The setting provided a unique opportunity to evaluate the impact of PBL, since Universiti Kuala Lumpur offers both the traditional, predominantly classroom-focussed approach to engineering and the more hands-on approach referred to as Higher Technical and Vocational Education and Training (HTVET). The study sample consisted of 453 third-year students' enrolled in both programmes at Universiti Kuala Lumpur.

Findings: Students in the HTVET programme responded better to PBL teaching methods, as evidenced by improved performance on written as well as lab-based assessments. This result indicates that students using the hands-on approach advocated by HTVET tend to obtain the greatest benefit from experiential, student-centred learning approaches. The analysis suggests the possibility that the PBL approach is a moderator of student performance in HTVET programmes. This possibility merits further investigation.

Research limitations/implications: The sample included students from only one institution of higher learning, which was chosen because both types of programmes are offered there. In addition, the current study does not consider potential mediating or moderating variables.

Originality/value: The findings provide an empirical basis for implementing PBL as a form of experiential learning at higher education institutions, especially those using the HTVET model. Furthermore, they provide a justification for designing curriculum structures and student learning time with an emphasis on active and experiential learning, thereby maximising the effectiveness of a hands-on approach, rather than the "minds-on" theoretical approach advocated by traditional engineering programmes in enhancing the teaching and learning experience.