

The effects of blended learning methods on educational achievement and the development of online material in a Curriculum Information Document Online System (CIDOS) for computer application courses

ABSTRACT

Measuring the effects of educational methods on learning achievement is a vital aspect of tertiary education. These effects can be measured by summative evaluation whether conventional, virtual or hybrid teaching and learning methods are used. As learning technology adjusts to a new era, so do the techniques for generating feasible and effective learning outcomes. Hybrid learning, or blended learning, combines online learning components with conventional face-to-face (FtF) instruction. The objectives of the present study were to (1) determine students' learning achievement without the hybrid method, (2) determine students' learning achievement with the hybrid method, (3) identify differences between cases that do and do not use hybrid learning and (4) determine the appropriate characteristics of online material to be implemented in the Curriculum Information Document Online System (CIDOS). Hybrid learning with the contextualised method is a proven concept that incorporates cognitive science, behaviourism and multiple intelligence theories in a single learning environment. The present study used a statistical t-test to analyse 66 respondents' test results in non-hybrid and hybrid learning environments and to assess the differences between them. The study comprised 33 students of Diploma in Manufacturing Technology (DTP 1) course and 33 students of Diploma in Electronic Engineering (DEP 1A) course, who were interviewed over the course of 5 months starting from July 2010. In the hybrid environment, CIDOS is used as a tool for online learning in a Computer Application (BC101) course that helps first semester students discover meaningful learning objectives in the context of the real world. The findings of this study indicate the existence of a significant difference in learning achievement with the application of a combined method using Learning Management System (LMS) exploration, assessment using CIDOS, teamwork projects, and time management and instructional technology skills. Based on the findings of this study, Malaysian Polytechnics, a technical institution, would benefit from supporting e-learning policy, technology-enabled classrooms and enhanced LMS deployment among its staff and students.

Keyword: Hybrid or blended learning; Contextualised method; Learning achievement; CIDOS online material