KNOWLEDGE CONSTRUCTION USING WEB - BASED CONSTRUCTIVIST APPROACH: A CRITICAL EVALUATION OF STUDENTS' PERFORMANCE

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Abstract

Although web technology is widely used in today's classrooms, educationists are still unsure of its capacity to generate meaningful learning. As the numbers of web-based learning (WBL) materials keep increasing tremendously, more students will rely on such resources in their learning process. A WBL that applies a constructivist approach offers an alternative as it allows the users to explore the environment based on a given problem.

This study investigates the effectiveness of two learning approaches in a WBL environment (constructivist and objectivist) on the achievement of students in terms of their knowledge level, retention and motivation with different cognitive style (field independent, FI and field dependent, FD). Two version of a WBL material (constructivist and objectivist) were developed for this purpose. A 2x2 quasi-experiment pre-test, post-test design was utilized. The sample for this study comprised a total of 141 form four students from two secondary schools in Malaysia.

The findings revealed that: (i) the FI students performed significantly better than the FD students after learning through the web learning based on constructivist approach. (ii) there were no significant different between the FI students and the FD student after learning through the web learning based on objectivist approach (iii) the FI students who learned through the web learning based on constructivist approach performed significantly better than the FI students who learned through the web learning based on objectivist approach. (iv) there were no significant differences for the FD students after learning using both approaches. (v) there were no significant difference on students' retention and motivation towards web learning.

These findings suggest that the constructivist approach has the potential to be an effective learning approach in a web environment. Other than that, to ensure the web based instruction effectiveness, cognitive style differences is among the factors that should be considered and applied in the said learning material environment.