

ABSTRACT

A Model for the Instructional Design, Development, Delivery and Evaluation of a Web-based Course in Computer Science

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Rapid changes in technology, in particular the Internet, are presenting many educational challenges for small nation states around the world. The Caribbean, which consists of many small island countries with pockets of population spread over a large geographical area, is responding to these challenges. This research examines many aspects of Web based course development with the aim of providing a model, considered in the Caribbean context, for others who would venture into developing on-line courses. This model, named EMBER, focuses on the design, development, delivery, and evaluation of instruction for a Web based course for students at secondary school level. A key design decision was that the web-based course would complement classroom teaching. The teacher's role would be to facilitate learning.

The model provides a consistent and highly structured approach to Web course development and a generic framework/template for developing new courses of good quality. A prototype of a Web course in Computer Science was produced and evaluated by teachers and students of secondary schools who rated it highly. Results from this evaluation showed that the EMBER model operated well in the

context of the method used. It is expected to work well with a larger sample size and, therefore, the model is recommended for the development of a variety of web courses.

Keywords: Thompson Cummings; Courseware Engineering; Distance Education; Learning Design Approaches; Instructional Assessment; Instructional Design; Instructional Systems; Web-based course Development Models