Laying a Foundation for the
Graphical Course Map

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Abstract

The transition from standard classroom courses to on-line delivery systems has been stymied due to both technical and human interface issues. One of the limitations is the text-based, linear presentation of course materials available in the learning management system. We have developed a graph-based approach to presenting the learning materials of a course using a system called **ENABLE** with three major goals: (1) facilitate restructuring a set of synchronous classroom materials into a dynamic on-line system, (2) provide algorithms to analyze and enhance student performance as well as provide insights to the instructor concerning the efficacy of the learning items and their organization, and (3) identify ways to use data from an existing linear, temporal based course presentation to train predictive models for a course that allows individual flexibility in the ordering of the material. This work demonstrates the possibility of presenting course materials in a graphical way that expresses important relations and provides support for manipulating the order of those materials. Making a fundamental change in how course materials are presented and interfaced with may potentially make educational opportunities available to a broader spectrum of people with diverse abilities and circumstances. The graphical course map can be pivotal in attaining this transition.