Chapter 22

Who Benefits from WWW Presentations in the Basics of Informatics?

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This paper describes the use of WWW-based guided tours as a complementary addition to conventional lectures in the basics of informatics. Learning can be promoted in the spirit of constructivism, situated action, and cognitive flexibility when organizing a WWW coursework. We analyze the benefit of an optional coursework, including the use of guided tours and the use of search engines and directories on the WWW. This paper presents who benefits and who does not benefit from our optional coursework. The analysis is based on the background information and prior computer experience of the students, as well as pre and post tests. The study found that our WWW-based coursework suits best for females and all students except the students of economics. The students who are not familiar with computers and the Internet benefit more from WWW-based learning. Age and the number of years studied at a university do not affect the effectiveness of the WWW coursework. The results show that our WWW coursework suits for basic course level students in informatics, regardless of age. However, in the continuing courses of informatics, the coursework is probably less effective.

INTRODUCTION

For example, Isaacs (1994) and Rosenthal (1995) have reported problems in regard to traditional lecture-based teaching, including ineffectiveness, an in-
crease in passivity, and isolation of students. In the context of technology, revisions have been suggested to improve lecturing as a teaching method by activating students in different conventional ways (Jacobson, Maouri, Mishra and Kolar, 1996). From this perspective, lecturing is not without potential if the previously mentioned problems can be corrected, but other learning methods must also be considered.

Hypertext and the WWW (the World Wide Web) enable learning as knowledge construction, allowing information and concepts to be represented as a learner adopts them. This helps meaningful learning. One alternative to conventional lectures is a presentation on the WWW. This presentation can be supported by coursework emphasizing learning as knowledge construction.

Hypertext and hypermedia have some problems. They do not typically offer an explicit mechanism to help learners better interpret and assimilate information, the context surrounding their creation and use, or the perspectives on the information of the author or other learners (Wan and Johnson, 1994). Improving information access without supporting learning leads directly to the problems of “information overload” and being “lost in hyperspace.” Thus, students need some degree of guidance. Additionally, the form and structure of hypermedia presentations must be discussed. This is more important in the era of the WWW.

The WWW provides both the possibility to organize information in a strict form and opportunities for free “surfing” with its advantages and disadvantages. To realize the benefits of the WWW, we suggest a solution of three layers: (a) the support of guided tours as a slideshow on the WWW, (b) the support of appropriate links, and (c) the support of search engines and directories. This approach may provide a basis for a successful WWW coursework.

This paper introduces our WWW-based coursework as a way to apply the WWW in the learning of basic concepts in informatics. Additionally, it presents who benefits from the WWW coursework in education. This study defines the concept “benefit” related to the quality of learning concepts. The analysis is based on the psychology of knowledge and a pre-questionnaire.

LEARNING CONCEPTS

This study understands learning as knowledge construction in the spirit of constructivist theory (constructivism). An individual learns new concepts in relation to his/her prior knowledge.

This psychological perspective of our research can be divided into the perspective of cognitive psychology and the perspective of developmental psychology. They both emphasize learning as knowledge construction.
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