

META-ANALYZER: A WEB-BASED LEARNING ENVIRONMENT FOR ANALYZING STUDENT INFORMATION SEARCHING BEHAVIORS

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ABSTRACT. *The rapid progress of computer and network technologies has attracted educational researchers to study the strategies and the effects of applying information technology in learning activities. One difficulty that has been identified for applying information technology in education is the lack of a learning environment that can thoroughly record the logs of using information technologies, such that the teachers can adjust their learning strategies after reviewing the learning behaviors of the students. In this paper, we propose a web-search learning environment based on the meta-index approach, which is able to assist the teachers in analyzing student learning and information seeking behaviors while using search engines for problem solving. An experiment on 79 teachers and 1,343 elementary and junior high school students has been conducted to evaluate the possible benefits of our approach. Experimental results from both the teachers and students showed that the developed learning environment is perceived as quite helpful to the students in conceptualizing the problems to be coped with, as well as in improving their problem-solving ability.*

Keywords: Computer-assisted learning, Information technology applied instruction, Course design, Meta-index, Metasearch engine

1. Introduction. With the progress of computers and information technologies, various computer-assisted instruction systems and learning theories have been developed for web-based learning [1-6], while their effectiveness has been empirically evaluated as well [6-8]. In the past decade, the efficiency and popularity of the Internet has received much attention that has motivated efforts towards integrating Web-based learning activities into the curriculum [8-15]. One of the greatest benefits of Web-based learning activities is that it allows students to participate in learning as active and self-directed participants [16].