

Databases as Mindtools for Discovery Learning in Asynchronous Distance Learning Environments

Jesús Trespalacios
jtrespal@vt.edu

Juhong Liu (Christie)
juliu@vt.edu

Doctoral Program of Instructional Design & Technology
Department of Teaching & Learning, Virginia Tech, Blacksburg, VA, USA

Abstract: This brief paper presentation is based on the instructional application of databases as mindtools for learning in asynchronous distance learning environments. Hilda Taba's Concept Development strategy and Jerome Bruner's Discovery Learning Theory are referred to as guidelines throughout the instructional design and development process. Databases as mindtools, generated with various computer software, such as Microsoft Access, FileMaker Pro or AppleWorks, are applied for managing different learning content. An asynchronous distance learning instruction will be demonstrated for enabling students to organize, represent, and express their learning process and learning products, as well as facilitating critical thinking and higher-order learning.

Key words: database, mindtool, asynchronous distance learning environments

This brief paper presentation is based on the instructional application of databases as mindtools (Jonassen, 1996) for learning in asynchronous distance learning environments. Hilda Taba's Concept Development strategy and Jerome Bruner's Discovery Learning Theory are referred to as guidelines throughout the instructional design and development process. Databases, generated with various computer software such as Microsoft Access, FileMaker Pro or AppleWorks, will effectively manage different learning content and enable students to organize, represent, and express their learning process and results, and at the same time facilitate critical thinking and higher-order learning.

Databases provide highly structured storage of learning content in a mechanical or technological way, like interactive electronic handbooks, as well as intelligent retrieval of information in response to learners' decision, with convenient access for learners in asynchronous learning environments. With the structured learning content provided in databases, learners can engage in using their own intuition, reflection, imagination and creativity (Bruner, 1971), enumerating questions, categorizing separated items, identifying critical relationships, predicting consequences, and explaining and verifying consequences (Taba, 1967). Databases as mindtools, with the unique storage and retrieval features, may provide assistance for learners to conveniently detect and locate chunks of information, which are supportive in attaining, interpreting, and generalizing concepts. This may lead to transferability of learning (Bruner, 1971) from lower-level thinking to higher-level thinking as the consequence.

This presentation will demonstrate unique features of databases as mindtools for learning in asynchronous learning environments via an example from specific online course design and development. The application of Hilda Taba's Concept Development strategy and Jerome Bruner's Discovery Learning Theory in designing and developing online courses will be discussed as well.

Reference

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