

# EXAMINING PROCEDURAL KNOWLEDGE IN INFORMATION SYSTEMS: A BUSINESS INTELLIGENCE PROJECT EXAMPLE

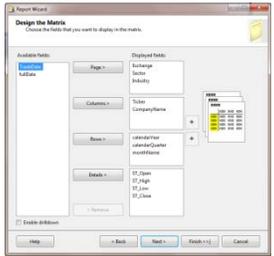
Robert J. Mills, Jon M. Huntsman School of Business, Utah State University, 3515 Old Main Hill, Logan UT, 84322-3515, bob.mills@usu.edu

David H. Olsen, Utah State University, Jon M. Huntsman School of Business, Utah State University, 3515 Old Main Hill, Logan UT, 84322-3515, david.olsen@usu.edu

Richard Jenson, Jon M. Huntsman School of Business, Utah State University, UMC 3540, Logan, UT 84322, 435-797-2335. richard.jenson@usu.edu

## ABSTRACT

Information Systems continues to be a changing field that requires faculty to teach a variety of processes and technologies. One common type of knowledge taught, particularly when learning a new software program, is procedural knowledge. Procedural knowledge is defined as “an ordered sequence of steps necessary for the learner to accomplish some goal, solve a particular class of problem, or produce some product.” [1, p. 113]. A partial example of a procedure related to a business intelligence task using SQL Server Reporting Services (SSRS) is provided in Figure 1.

Design the Table	
<p>Now you will see the available fields from the tables specified in your query</p> <ol style="list-style-type: none"><li>1. Move the Available fields into the desired Display Fields</li><li>2. Click <b>Next</b></li><li>3. Choose the Table Layout, Table Style, and click <b>Finish</b></li><li>4. Give the Report a name and click <b>Finish</b></li></ol> <p>From here you can view the report, and modify the design through the toolbox in Visual Studio.</p>	

**FIGURE 1. INITIAL STEPS TO SSRS TABLE DESIGN.**

There are several potential challenges related to teaching software procedures. First, is the problem of students simply following a number of step-by-step instructions. Another problem is the challenge of the Ebbinghaus forgetting curve. This forgetting curve posits that much of the details learned (i.e., following steps in a procedure) are lost very quickly (within hours) unless other strategies are employed to help avoid this problem.

Merrill's [1] Component Display Theory (CDT) provides both a prescriptive and descriptive framework for designing procedural knowledge using specific primary presentation forms, secondary presentation forms, and interdisplay relationships.

The purpose of this presentation is to examine procedural knowledge representations related to a business intelligence task and examine how these procedures fit into Merrill's Component Display Theory. Specifically, we will provide a procedural business intelligence task example to serve as our basis for examining procedural knowledge. Next, we will examine where this type of procedure fits into the CDT Performance-Content Classification at the prescriptive level of analysis. Once the Performance-Content Classifications are completed, we will modify the existing procedural business intelligence to more appropriately align with the prescriptive recommendations of CDT. Finally, we will discuss the advantages and disadvantages of using a systematic approach for teaching procedural knowledge in an information systems/business intelligence context with a eventual goal of moving toward comprehensive IS framework for improving knowledge transfer of procedural knowledge in IS curriculum.

#### References:

- [1] Merrill, M. D. *Instructional Design Theory*. Englewood Cliffs, NJ: Educational Technology Publications, 1994.