Chapter 29

Using Structural Equations to Validate a New, Integrated Model of Web-Based Learning

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Learning Objectives

1. Describe the research question/problem in the introduction.
2. Summarize in your own words orally or in writing the gist of the literature review, including the theoretical framework to support the questions, problem, or need.
3. Describe the gist of the methodology, including:
   a. The participants [e.g., level, prerequisites, prior knowledge of the dependent variable under consideration, motivation to learn (intrinsic better job, etc.)]
   b. The materials in depth [e.g., online, tools, software utilities, workbooks, writing materials, verbal instructions, etc.]
   c. The research design [e.g., hypotheses, sampling method] variables [e.g., dependent, independent]
   d. The instrumentation [e.g., written test, time stamping, dribble files, interview questions, written work, method of segmentating protocols, etc.]
e. The procedure [e.g., “the procedure in this study followed those suggested in previous studies of this kind (reference)], and summary

4. Describe the gist of the results, including:
   a. The methods used in collecting the data
   b. The methods used in analyzing the data
   c. The pre-test results of prior knowledge
   d. The predisposition to study style or modality
   e. The post-test results of treatment effects
   f. The delayed or retention test results

5. Write a brief statement:
   a. Linking previous research to the results arising from the analyses of the data
   b. Conclusions of the study
   c. Contributing factors
   d. Implications of the study
   e. Limitations of the study
   f. Recommendations, and a summary

6. State whether or not the references in text and in the list follow the current APA standard

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**Abstract**

This chapter introduces a descriptive model of Web-based learning called The Integrated Learning Model (ILM). The ILM is a data-driven idea, conceptualized from three principle components “knowledge acquisition,” “practice effects,” and “assessment,” and refined with exploratory factor analysis. The Integrated Learning Model (ILM) has at its heart three powerful theoretical concepts that currently enjoy widespread recognition in the educational literature. Structural Equation Modeling was then applied to determine the model fit, and parameter loadings to explain the learning construct.

**Research Objectives and Questions**

The primary objective is subdivided into two parts and is specified in the following list (1 and 2). This is followed by other secondary objectives that seek to identify other findings from data collected in this study (3, 4, and 5 following).

1. Identify an integrated model of learning for a Web-based course: