



## **Chapter I**

# **Web-Based Learning and Instruction: A Constructivist Approach**

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## **INTRODUCTION**

The precipitous rise in Web-based education and employee training speaks volumes of technology's far-reaching potential. While most agree that Web-based instruction can be cost-effective and convenient, few academicians and practitioners have examined the efficacy of Web-based learning in terms of constructivism, the most widely accepted model of learning in education today.

The constructivist approach to learning acknowledges that both teacher and student bring prior knowledge to the learning experience. Over time and through interaction with others in the learning environment, the student co-constructs new meaning as a knowledge-building process—piece by piece, new knowledge is built onto former knowledge. This differs from the former notion of learning that considered children as empty vessels waiting to be filled (*tabula rasa*). While constructivism is widely accepted by educators in theory, it is not always evident in teaching practices, including Web-based instruction.

To help academicians and practitioners provide effective constructivist learning experiences for students and employees, the following issues will be addressed:

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- I. Contemporary Constructivist Thought
  - A. Definition
  - B. Influences
    - 1. John Dewey
    - 2. Jean Piaget
    - 3. Edmund Husserl
    - 4. Thomas Kuhn
- II. Constructivist Learning and Instruction in Traditional
  - A. Concept Maps and Semantic Webs
  - B. Venn Diagrams and Other Graphic Organizers
  - C. Models
  - D. Analogies and Metaphors
  - E. Hypothesis Making and Testing
  - F. Integrated Themes
  - G. Journaling
  - H. Portfolios
  - I. Dialogue and Cooperative Learning
  - J. Learning Cycle Lessons
- III. Recommendations for Web-based Constructivist Learning and Instruction
  - A. Selecting Curriculum
    - 1. Scope
    - 2. Sequence
  - B. Selecting Instruction
    - 1. Planning
      - a. Questions to ask
      - b. Experiences that will best facilitate co-construction of meaning
    - 2. Implementing
      - a. Monitoring student responses
      - b. Modifying instruction
    - 3. Evaluation
      - a. Student
      - b. Program
- IV. Future Research Opportunities
- V. References

## CONTEMPORARY CONSTRUCTIVIST THOUGHT

The constructivist perspective dominates learning theory today. Constructivists view knowledge as something that a learner actively constructs in his/her environment. Through meaningful learning experiences, a learner co-constructs new knowledge in tandem with those who share his/her learning environment. Knowledge is built piece by piece, and connections arise to join related pieces. In this

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