

Instructional design theory according to m. david merrill

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There are many ways by which an educator can look at learning and the teaching process. M. David Merrill, Patricia Smith and Dr. Tillman J. Ragan are three educators who believe that instruction may be done more effectively with given the proper approach and pacing that students may be able to follow. Merrill sought to change the way instruction is done following theories of cognitive learning by integrating consideration for the learner's background and requirements. Smith and Ragan on the other hand, favor an approach to instruction that is more audience centered and based on real-life experiences of their students.

Instructional Design Theory According to M. David Merrill, Patricia Smith and Tillman Ragan.

An educational psychologist, M. David Merrill has written numerous books and articles on the field of instructional technology and has taken part in the development of various educational materials including instructional computer products. Merrill has been cited as being among the most productive Educational Psychologists (Gordon, 1984), among the most frequently cited authors in the computer-based instruction literature (Wedman, 1987), and ranked among the most influential people in the field of Instructional Technology (Moore & Braden, 1988).

A co-author of the leading book “ Instructional Design,” Patricia Smith is an assistant professor at Cy-Fair College in the North Harris Montgomery Community College District. She holds a doctoral degree in Curriculum and Instruction from the Louisiana State University.

Smith's co-author is Tillman J. Ragan, Ph. D. a Professor Emeritus on Instructional Psychology and Technology from the University of Oklahoma.

Basic Beliefs

Merrill is a proponent of the Component Display Theory or CDT. Under CDT, learning is classified by two dimensions: content and performance. Merrill lists four types of information that falls under "Content:"

1. Facts which consist of statements and information
2. Concepts that establish relationships between symbols and objects to form a single unit
3. Procedures or ordered/chronological steps required in problem solving
4. Principles that deal with causal relationships

Performance on the other hand refers to the way content is used by the learner. Applications is demonstrated through remembering (information recall), using (practical application) and generalities (finding or development of new abstract concept from given information). CDT presents data in four major forms: rules, examples, recall and practice. Information is further qualified by secondary forms such as are prerequisites, objectives, help, mnemonics and feedback.

Merrill believes that based on CDT, effective instruction is achieved when it contains all necessary primary and secondary forms that a learner may use as standards. (Merrill, 1983)

The pace of learning is dictated by the accomplishment of the objectives of each task. Evaluation is limited to determining whether the criterion for that particular task is met.

What makes CDT different from other cognitive learning theories is that it takes into consideration the capabilities of the learner. The presentation of information as well as the graduation to the next level/step is determined by what the learner has already accomplished. Also central to the concept of CDT is the empowerment of the learner wherein learners select by themselves their own instructional strategies. Merrill believes that instructional material becomes highly individualized when done along the CDT guidelines.

While Merrill places huge emphasis on course structures rather than the lesson itself, Smith and Ragan believe that creating instructional material starts in determining the needs, experience and capabilities of its intended users.

“ As you design instruction, it is critical that you have a particular audience in mind, rather than centering the design around the content and then searching for an audience that is appropriate” (Smith & Regan, 1999).

They believed that if an instructor knew about the learning background of their students as well as their capability of assimilating new information, he or she would be better equipped to speak or instruct the students in a way that they can understand.

In their book Smith and Ragan summarized thousands of studies in the hope of identifying which steps to take and instructional techniques to use to achieve each type of learning objective. Smith and Ragan also presented the ideas of authentic learning and case based learning.

" Authentic learning refers to the idea that learners should be presented problems from realistic situations and found in everyday applications of knowledge while case-based learning is based on using case studies to present learners with a realistic situation and require them to respond as the person who must solve a problem." (Smith & Ragan, 1999).

Merrill for his part has presented a newer version of the CDT wherein advisor strategies have taken the place of learner control strategies. Merrill also subscribes to a more macro view which gives more emphasis on course structures and instructional transactions rather than presentation forms. (Merrill, 1994)

Cognitive vs. Constructivist Learning

Merrill belongs to the theorists who based their ideas on cognitive learning. He believed a systematic and structural approach to learning by using repetition and consistency makes the instruction method more effective. The weakness in cognitive learning lies in its perceived inflexibility in adapting to new situations or methods or accomplishing things. Merrill sought to address this by proposing structured instruction tailored to the requirements and situation of the learner.

Smith and Ragan takes a more constructivist or individualistic approach where learning is based on interaction with real-life situations. Adjustment to new situations would be easier and the learner is capable of interpreting multiple realities and individual choice of method in solving a problem or accomplishing a task. The flaw in this design however is that there are situations wherein a degree of conformity is expected and "individual approaches" will not be acceptable.

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