

Behavioral Theories that Guide Online Course Design

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INTRODUCTION

Behaviorism comes from one of three schools of psychology in which theories are categorized. The other two schools are the schools of cognitivism and humanism. It is believed that one school of theory is not better than the other, and individuals are encouraged to apply the theory that is the most appropriate for the student. During the first several decades of the twentieth century, experimental psychologists, William James and his student, Edward L. Thorndike, began to question the use of memorization as a tool for education after their experiments showed that memory was not improved after memorization. Thorndike continued their efforts by promoting the idea of stimulus-response behavioral psychology. It was believed that stimulus-response behavioral patterns could be used by educators to change human behavior and that factors in the environment served as a stimulus for the behavior response. Psychologists would focus on knowledge of how people responded to feedback when performing a task, and they began to think of individuals as self-correcting human beings. Later, other behavioral pioneers such as Ivan Pavlov, B. F. Skinner, Albert Bandura, and Benjamin Bloom would develop additional experimental products to show that the environment had an impact on learning and that all behavior is learned. Because of their beliefs, programs have been developed to help people reduce phobias, learn to read or calculate, develop specific skills, and even increase their ability to relax (Joyce, Weil, & Calhoun, 2000; Pinar, Reynolds, Slatery, & Taubman, 1996).

BEHAVIORAL THEORIES AND ONLINE DESIGN

Theories that embed the work of Ivan Pavlov make use of classical conditioning in that the desirable behavior is stimulated and the result is a conditioned response. Courses that reflect E. L. Thorndike's use of connec-

tionism, law of effect, and law of exercise are using behaviorism as a tool for learning. Connectionism is the idea of making a connection between a stimulus and a response. Law of effect occurs when a reward is provided after a wanted behavior is produced, and law of exercise refers to a stronger bond being developed between the stimulus and the response, because the connection is made again and again. When positive and negative reinforcements are used as part of the course design, the work of B. F. Skinner is emulated. This is especially true if organization, sequence, and consistency strategies are implemented. The timing in which the reinforcement is enacted is also a deciding factor. According to theories on behavior, an immediate reinforcement is better than a delayed reinforcement. Once social responses are used to illicit certain behavior through a practice called reciprocal determinism, Albert Bandura's contributions are represented. Examples of behaviorism in the classroom include the use of computer software programs and computer assisted learning tools, providing students with immediate feedback, and behavior rewards (Joyce et al., 2000; Tomei, 2007). Today, instructors make use of behaviorism theory and practice when designing online courses (Buendia, Diaz, & Benlloch, 2002). Examples of behaviorist theories used when designing online courses include the social-cultural model of learning, mastery learning, simulations, direct instruction, theory of elaboration, and traditional instructional design theory.

Social-Cultural Model of Learning

An online course that incorporates the social-cultural model of learning, a model that is cognitive in nature, because of how students process information, is reflective of behaviorism, because patterns of communication are utilized. The social-cultural model of learning uses written and oral dialogue. Threaded asynchronous discussions, synchronous discussions, and email are examples of the tools implemented by instructors during the course design process. The pat-

tern of behaviorism begins when the instructor poses a question, students respond to the question, and the instructor responds to the students' responses with positive or negative reinforcement comments. In this example, the behaviorism is being used in a number of different ways. The reinforcement comments are representative of Thorndike's ideas of connectionism, law of effect, and law of exercise. It also reminds you of Skinner's operant conditioning theory. As students see examples of students' quality responses that receive positive reinforcement from the instructor, they can use those examples as a model to help improve their own responses. When this modeling behavior occurs, Bandura's practice of reciprocal determinism is being utilized. (Polin, 2004).

Mastery Learning

Mastery learning is a practice originally created by John B. Carroll and Benjamin Bloom. John Carroll's perspective holds that a student's aptitude correlates with achievement. His view of aptitude considers how long it takes for the learner to learn the material as opposed to the learner's ability to master the material. According to this view, every learner can learn as long as the appropriate materials and instruction are provided. Benjamin Bloom then alters Carroll's perspective into an ideal that focuses on organizing the curriculum so that students would have the necessary time and ability to benefit from instruction. The transformed model contains the following characteristics: (a) subjects are defined by major objectives, (b) material is divided into smaller learning units with separate objectives that stem from the larger objectives, (c) learning materials and instructional strategies are selected, (d) formative evaluation is applied, (e) supplementary instruction is provided based on student's aptitude, and (f) summative evaluation is applied. Benjamin Bloom, James Block, and other mastery learning supporters believe that any traditional instructional unit can be adjusted to meet the ideals of mastery learning once educators ensure that students are provided with the time they need to master the concepts. Now that modern instructional technology has afforded educators with new choices, curriculum developers are encouraged to develop comprehensive curriculum that includes self-administering multimedia units and programmed learning procedures (Joyce et al., 2000; Pinar et al., 1996).

Direct Instruction

Direct instruction is referred to by behaviorists as "modeling with reinforced guided performance." The focus of this model of learning involves dividing performance into goals and tasks, breaking the tasks into smaller tasks, creating training activities that directly target the objectives and ensure mastery of each task, and the inclusion of prerequisites that students have to achieve before they can go on to more advanced concepts. Critics of direct instruction theory note that the application of this theory should be used with caution, because it is not appropriate for all educational objectives and all students. Even though the theory has been criticized, there is an empirical record that shows modest effects when the theory is applied. The direct instruction model has five phases of activity: orientation, presentation, structured practice, guided practice, and independent practice. During the orientation phase, the instructor presents the expectations, the learning task, and the student's responsibilities needed to complete the task. Phase two of the model is the presentation phase. At this time, the instructor describes the concept or skill and presents demonstrations or examples and identifies whether or not the students understand the new concepts and skills that have been presented. Structured practice, the third phase of the model, is the next step. Students practice, and the instructor will provide feedback as a form of reinforcement. Phase four involves guided practice. Students are given the chance to practice independently with the teacher nearby ready to make assessments and offer more corrective feedback as the need arises. Independent practice is the final phase of the direct instruction theory of learning. Once students reach an accuracy level of 85 to 90% during the guided practice phase, they perform the task independently and receive support from the teacher in the form of feedback after the task has been completed. Any form of technology can be integrated when designing curriculum as long as the direct instruction learning experience contains each of the five phases (Joyce et al., 2000).

Simulations

Learning from simulations through training and self-training is another example of a behavioral learning theory. When simulations are utilized, students take on the role of someone from a real life experience. To

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