ABSTRACT

Designing instruction centered upon one learning approach is not always practical because there are many different techniques students use when learning new material. Therefore, an educator or instructional designer needs to recognize the principles, concepts, and applications of various learning theories when implementing technology into the instructional setting. This paper provides an overview of three distinct learning theories commonly applied in the area of education and addresses their practical uses in technology application. First, the principles and implications upon teaching and learning of each theory are presented. Thereafter, each theory is followed by a summary describing its influences upon the way that technology can be utilized in instruction.

Keywords: behaviorism; cognitivism; constructivism; instructional technology; technology integration

INTRODUCTION

Instructional design is a systematic process to plan and present instruction that uses a combination of various learning theories to promote learning. Designing instruction centered upon one learning approach is not always practical because there are many different techniques used in learning new material. Therefore, an educator or instructional designer needs to recognize the principles, concepts, and applications of various learning theories when implementing technology into the instructional setting. The educator or designer must evaluate the strengths and weaknesses of each learning theory and assess how these learning theories can help augment the instructional process before attempting to develop instructional materials or apply technology-related activities.

Applications of these theories in the instructional design process often depend upon the learners and their unique environments and perceptions. Based upon prior experiences and attitudes, people have constructed different theories and explanations...
about what it means to learn. In a formal sense, a learning theory can be defined as an organized set of principles that explain how individuals learn or how they acquire new abilities or knowledge (Newby, Stepich, Lehman, & Russell, 2000). Another definition proposed by Bigge (1982) is the systematic and integrated viewpoint toward the nature of the process whereby people relate to their environments in such a way as to enhance their ability to use both themselves and their environments more effectively. In a sense, learning is viewed as the process in which the selection, arrangement, and delivery of information within an environment is affected by the way learners interact with that information (Heinich, Molenda, Russell, & Smaldino, 2002). Thus, effective instructional designs are influenced by the beliefs of how people learn.

There are different learning theories that an educator can draw upon, but three predominant approaches exist in the area of instructional technology practice. These include behaviorism, cognitivism, and constructivism. The purpose of this paper is to provide an overview of these three learning theories and to address their practical implications upon technology use in instruction. Because the field of instructional technology has changed profoundly over the years and incorporates many practical uses, there is no perfect learning theory that could be used alone. Instead, technology-using educators and designers must blend the theories together to form a perfect environment in which one can learn and acquire the skills or knowledge necessary to succeed. This paper will address these issues by providing a foundation of each learning theory in terms of their principles and instructional implications, and then offer a summary of how the learning theories can be applied toward technology integration.

**PRINCIPLES AND IMPLICATIONS OF BEHAVIORISM**

Behaviorism is a component of psychology that is widely referred to in the area of educational psychology. Behaviorists generally agree that learning takes place as the result of external stimuli presented in the environment of the learner, and thus, changing the learner’s behavior. Furthermore, behaviorists believe that learning can be predicted once a desired level of performance has been achieved (Reiser & Dempsey, 2002).

Learning, for behaviorists, is described as a change in the probability of a particular behavior to occur in a given situation. With the use of operant conditioning, a relationship is established between antecedents, operant responses, and consequences (Burton, Moore, & Magliaro, 1996; Newby et al., 2000). The antecedent is a cue in the environment that requires a response by the learner. The initial response to the antecedent is known as the operant. The stimulus that follows the response is the consequence. Consequences can come in the form of positive or negative reinforcement that does not necessarily connote as being “good” or “bad.” Positive reinforcement is a stimulus that is likely to increase or maintain a specific behavioral response. Negative reinforcement is a stimulus that is taken away in effort of increasing the likelihood that a particular behavior will re-occur. Consequences can also be punitive in nature. Punitive consequences are intended to decrease certain behaviors and eliminate them completely (Burton et al., 1996). In general, behaviorism can be de-
Related Content

Effect of Teaching using Whole Brain Instruction on Accounting Learning
Li-Tze Lee and Jason C. Hung (2009). *International Journal of Distance Education Technologies* (pp. 63-84).
[www.igi-global.com/article/effect-teaching-using-whole-brain/3920?camid=4v1a](www.igi-global.com/article/effect-teaching-using-whole-brain/3920?camid=4v1a)

Conversation Ethics for Online Learning Communities
Rocci Luppicini (2009). *Ethical Practices and Implications in Distance Learning* (pp. 98-107).
[www.igi-global.com/chapter/conversation-ethics-online-learning-communities/18594?camid=4v1a](www.igi-global.com/chapter/conversation-ethics-online-learning-communities/18594?camid=4v1a)

Southern Skies Distance Education Academic Exchange Project: Building a Community of Practice
Carina Bossu (2013). *Global Challenges and Perspectives in Blended and Distance Learning* (pp. 107-114).
[www.igi-global.com/chapter/southern-skies-distance-education-academic/75646?camid=4v1a](www.igi-global.com/chapter/southern-skies-distance-education-academic/75646?camid=4v1a)

Information and Communication Technology in China: Connecting 200 Million Children for Better Education
[www.igi-global.com/article/information-communication-technology-china/37518?camid=4v1a](www.igi-global.com/article/information-communication-technology-china/37518?camid=4v1a)