Theory Analysis and Application of the Cognitive Learning Theory

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Abstract

 The cognitive learning theory is a complex and broad concept to analyze. This paper examines some of this theories major concepts, models used within the theory, and similar as well as different theories related to the cognitive learning theory. The author then presents examples of uses of the theory in educational environments focusing in the field of nursing. The purpose of the paper is to define the overall concept of the cognitive learning theory and establish its’ application to theory and curriculum development. The author finds the concept of the cognitive learning theory to be extremely beneficial in nursing education and nursing practice for the future.

Theory Analysis and Application of the Cognitive Learning Theory

 Multiple learning theories are identified to assist educators within their educational environments. These theories help guide educators to the most appropriate approaches to teaching students concepts and guiding them individually to success. Knowing and understanding the concepts behind learning theories will help educators choose the best overall technique for their curriculum and teaching strategy.

**Learning Theories**

Leaning is defined as a relatively permanent change in mental processing, emotional functioning, and/or behavior as a result of experience. It is the lifelong, dynamic process by which individuals acquire new knowledge or skills and alter their thoughts feelings and attitudes. Learning enables individuals to adapt to demands and changing circumstances and is crucial in health care-whether the patients and families grappling with ways to improve their health and adjust to their medical conditions, for students acquiring the information and skills necessary to become a nurse, or for nurses and other healthcare staff devising and learning more effective approaches to educating and treating patients and each other in partnership (Bastable, 2008).

A learning theory is a coherent framework of integrated constructs and principles that describe, explain or predict how people learn. Major learning theories have wide applicability and form the foundation of not only the field of education but also psychological counseling, workplace organization and human resources management, marketing and advertising (Bastable, 2008). Whether used singly or in combination, learning theories have much to offer the practice of healthcare. Therefore, health professionals must demonstrate that they regularly employ sound methods and a clear rationale in their education efforts, patient and client interactions, staff management and training, and continuing education and health promotion programs (Ferguson & Day, 2005).

**Cognitive Learning Theory**

Cognitive learning is a a highly active process largely directed by the individual and involves perceiving information, interpreting it based on what is already known and then reorganizing the information into new insights or understanding (Bandura, 2001; Hunt, Ellis & Ellis, 2004). Cognitive theory is assumed to be compromised of a number of subtheories and is widely used in education and counseling. The cognitive learning theory stresses the importance of what goes on inside the learner (Bastable, 2008).

**Analysis Process**

The process of analysis of the cognitive learning theory began with literature review from simple definitions to peer-reviewed journal articles discussing the subject from various databases including: Academic Search Premier, MEDLINE and CINHAL. Literature was found by using search words that included: cognitive learning theory, cognitivism, education, nursing, learning theories, instructional frameworks and teaching methods. Much text was also reviewed from Bastable, 2008.

**Concepts**

Concepts identified within the search included but are not limited to the following: individual interpretation, prior knowledge, memory, concept formation and information processing. Each of these concepts were further explained clearly and repeated multiple times within various searches.

 The cognitive learning theory makes much inference to the internal mental processes of an individual. The primary emphasis is placed on how knowledge is acquired, processed, stored, retrieved, and activated by the learner during the different phases of the learning process (Anderson, Reder, and Simon, 1997;Greeno, Collins and Resnick, 1996).

 According to Piaget, the process of intellectual and cognitive development resembles a biological act, which requires adaptation to environmental demands (Gillani,2003). The cognitive learning theory suggests that people do not passively receive environmental stimulation but rather, they actively seek it, naturally exploring and acting on their world to understand it (Fox, 2011). Once encountered with a new learning situation, the individual draws on his or her prior knowledge to make the new experience understandable. The individual will use the internal process of assimilation and accommodation to adapt to the learning phenomenon. While assimilation is a process of integrating new information with existing knowledge, accommodation is a process of modification or transformation in existing cognitive structures in response to a new situation (Gillian, 2003).

**Information-Processing Model of Memory**

The cognitive learning theory is deeper explained by involving an information-processing model of memory. Diagrams of this model were helpful in the understanding of the concept. Information processing is a cognitive perspective that emphasizes thinking processes: thought, reasoning, the way information is encountered and stored, and memory functioning (Bastable, 2008).

The information-processing model of memory consists of four stages. The first stage in the model involves paying attention to environmental stimuli. In the second stage, the information is processed by the senses. In the third stage, the information is transformed and incorporated briefly into short-term memory and then either forgotten or stored in long-term memory. The last stage involves the action or response that the individual makes on the basis of how information is processed and stored (Bastable, 2008). Educators may find this model beneficial in guiding their curriculum.

**Similar Theory**

Cognitive theories and adult learning principles are closely linked to constructivism. While cognitive constructivism is derived from the work of Piaget (1972), which describes learning as an act of accommodation, assimilation and equilibration, Knowles’s (1979) adult learning principles build upon the learner’s previous experiences and promote active learning (Brandon & All, 2010). The conceptual definition of constructivism is that human learning is constructed and built upon previous knowledge (Hoover, 1996).

**Different Theory**

The limitations of behaviorism sparked the cognitive movement. The behaviorist theory’s fails to explain why and how individuals make sense of and process information (Yilmaz, 2011). Behaviorism’s heavy emphasis on observable behavior differs from the cognitive theory’s emphasis that prior knowledge and mental processes not only play a bigger role that stimuli in orienting behavior or response but also intervene between a stimulus and response (Deubel, 2003). The cognitive approach focuses on making knowledge meaningful and helping learners organize and relate new information to prior knowledge in memory (Yilmaz, 2011).

**Educational emphasis**

The cognitive learning theory places much emphasis on the learner’s goals and expectations. Educators trying to influence the learning process must recognize the variety of past experiences, perceptions, ways of incorporating and thinking about information, and diverse aspirations, expectations, and social influences that affect any learning situation. Cognitive principles of learning include begin mentally active with information to encourage memory and retention (Bastable, 2008).

**Classroom Environment**

Instruction based on cognitive principles should be authentic and real. The educator is expected to provide a classroom environment that encourages student’s spontaneous exploration of instructional materials. Students are to become active constructors of their own knowledge through experiences that encourage assimilation and accommodation (Wadsworth, 1996). Within the cognitive perspective, students learn by receiving, storing and retrieving information. Therefore the teacher is urged to thoroughly analyze and consider the instructional material, proper tasks and relevant learner characteristics to help learners to effectively and efficiently process the information received (McLeod, 2003).

**Nursing Education**

It is essential to use creativity to design cognitive strategies that appeal to students’ learning preferences. The key to energizing the nursing lecture is to create and environment that encourages students to be active participants. To engage students and create interactive learning opportunities requires a certain willingness to think outside the box. Educators must be able to expand their teaching strategy beyond the normal and expected classroom activities (Amerson, 2006).

 Today’s nursing programs are struggling to accommodate the changing needs of the health care environment and need to make changes in how students are taught (Brandon & All, 2010). As previously stated, the cognitive learning theory and constructivism theory are closely related. Using constructivism theory, learning is an active process in which learners construct new ideas or concepts based upon their current knowledge, leaders in nursing education can make a paradigm shift toward concept-based curricula (Brandon & All, 2010). For faculty to accomplish such change, it is important to have an understanding of curricula and the nurse’s role in a rapidly advancing profession (Hamner & Wilder, 2001). Nurses must not just memorize but be lifelong, adult learners who engage in reflective practice, self-critique and self-direction, and they must be able to synthesize information, link concepts and think critically. Therefore it is imperative to evaluate the use of constructivism in nursing education curricula (Brandon & All, 2010).

**Roles of Learner and Educator**

The role of the learner is to select and transform information, construct ideas, and make decisions while relying on a cognitive structure. Rather than using the teacher’s knowledge and textbooks for sovling problesms, the student invents solutions and construscts knowledge in the learning process. The student and educator engage in active dialogue, and the educator encourages students to discover prinicples by themselves (Brandon & All, 2010).

 Nurse educators frequently voice concern about not covering all the material and feeling complelled to complete as much lecture contect as possible within a one to two hour block of time. By designing short, interactive activities focuses on specific intelligence styles that can be interspersed throughout lecture, the nursing lecture can be interactive and energized. Student evaluations will reflect satisfaction with the willingness of the educator to step outside the normal traditions of the classroom to address a variety of learning preferences. The future task for nurse educators will be to implement these techniques and demonstrate efficacy through research (Amerson, 2006).

**Future implication**

The cognitive learning theory places much emphasis on the learner’s goals and expectations (Bastable, 2008). Therefore, it is important for nurse educators to identify and examine the goals and expectations of our students. These findings will help guide nursing curriculum and classroom environments.

The cognitive learning theory principles of prior knowledge and experiences with active learning are essential concepts to be included not only in nursing learning environments but also in nursing practice. Everyday nurses in practice are required to think outside the box and uses previous retained knowledge and past experiences to make critical decisions. Thus, it is extremely important that nurse educators use the cognitive learning theory within nursing education to prepare nursing students for the lifelong mindset of this educational learning theory to apply in their practice and the future theory of nursing.

**Author’s assumptions**

After review of multiple learning theories the author chose the cognitive learning theory to be most applicable and effective within advance nursing education environments. Although the cognitive learning theory is an extremely broad concept, it’s basic concepts and principals can effectively enhance nursing curriculum as well as advance nursing theory and future practice. Nurse educators implementing the cognitive learning theory will be preparing his or her nurses for a successful future in the nursing field.

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