Learning Theory: Social Cognitive Theory

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Social cognitive theory plays a vital role in precepting ultrasound students. Performing ultrasound, specifically echocardiograms, is a skill that can only be learned and refined with a hands-on approach. Students can read and study about finding scanning windows, adjusting ultrasound instruments, and working with patients. However, nothing can prepare you for the real thing until you put your hands on the transducer and start practicing, and practicing, and practicing.

The students begin to join us for rotations during their junior year of ultrasound school. They have never scanned an actual patient to this point in their education. Observational methods are a key tool for the beginning steps of their clinical education. On the typical first day, a junior student does not get the opportunity to scan. The goal is to learn in the social environment (the echo lab) by observing others (preceptors) to gain the necessary skills and behavior to begin their scanning. As a preceptor, all facets of the job must be demonstrated in this career field, including patient care, interacting with physicians, cleaning and stocking habits, etc. When it is time for the student to start scanning, their learning occurs enactively by performing the observed skills. Enactive learning helps preceptors construct feedback for the students by informing them if the requirements of this rotation are being met or if there is room for improvement. Performing an echocardiogram is a complex skill, and as Schunk describes, “learning complex skills typically occurs through observation and performance” (2020). When the student and preceptor both have the chance to scan the same pictures for the same patient, learning can peak. For example, if a student is scanning a parasternal long window during an echocardiogram, but is in a rib space that is too low, the image appears to be suboptimal. The student may attempt to improve the picture with maneuvers previously witnessed by their preceptor but fails to gain any image

clarity. Then, the preceptor takes over to scan and finds the correct parasternal long window by sliding up a rib space and moving closer to the patient's sternum. "Observers are more apt to learn modeled behaviors leading to success than those resulting in failures" (Schunk, 2020). By successfully finding the diagnostic picture, the preceptor has helped model positive behavior for the student to help their scanning ability in the future.

This practice of mentoring is a primary principle of social cognitive theory. This type of learning can improve self-regulation, self-efficacy, motivation, and achievement (Schunk, 2020). It benefits both the learner and mentor by refining the skills of the preceptor and raising their self-efficacy as well.

Social cognitive theory is an excellent method for hands-on, in-person teaching. However, it can be just as useful as a teaching tool in an online setting. With online tools like YouTube or something more educated centered like Explain Everything, a learner can observe about anything to help acquire knowledge and skills. A student could find a tutorial on YouTube on how to scan certain aspects of an echocardiogram. An instructor could demonstrate how to angle the transducer by creating animated diagrams on Explain Everything. The key variable to learning online, according to social cognitive theory, though, is self-efficacy (Schunk, 2020). You could learn many things, especially online, but is there a belief that I can learn? For example, I could watch a demonstration on how to take and put back together a car engine. However, my confidence level in performing it successfully is absolutely zero. Online medium is dependent on both student and teacher self-efficacy. For learning to be more effective, students must have a high belief that they can learn what is being taught, and the teacher must have a strong confidence that they can help students learn content. A key driver of high self-efficacy is self-regulation. Schunk points out, "…people desire 'to control the events that affect their

lives'…" and "In learning situations, self-regulation requires that learners have choices…" (2020). If learners choose something they want to learn and if that knowledge directly relates to a motivating factor such as a higher degree, a high-income job, or anything positively related, individuals can sustain behaviors, such as self-efficacy, to help obtain objectives.

Motivation is what sets social cognitive theory apart from other learning theories. Behaviorism, information processing theory, and constructivism all acknowledge motivation to a degree, but social cognitive theorists place a much higher emphasis on motivation and its impact on learning. Processes involved with social cognitive motivation include goals and expectations, social comparison, and self-concept. Evaluation of goal progress can increase motivation by learners, as the idea is that learners will perform in ways that will help them achieve their goals. This performance can be aided by higher self-efficacy that can model learner's behaviors to achieve their goals more successfully. Social comparison is the act of comparing ourselves with others. This is a useful tool for motivation, as it allows one to observe peers who succeed. In turn, it causes the observer to improve their self-efficacy and allows their belief that if someone else can do it, I can do it too. Lastly, self-concept is the idea of one's perception. This includes self-esteem, self-confidence, self-concept ability, and self-crystallization (Schunk, 2020). High levels of self-concept can lead to greater self-efficacy, leading to highly motivated individuals who believe they can learn content.

Social cognitive theory's biggest detractor is behaviorism. Instead of learning through direct reinforcement of behaviors, people learn through interactions with their environment and observing others (Cook & Artino, 2016). Theorists of social cognitive theory contend that people are not thoughtless actors responding involuntarily to rewards and punishment. However,

cognition interprets their environment and self-regulates their thoughts, feelings, and actions (Cook & Artino, 2016).

Although motivation is a key difference in the learning theories discussed, similarities can also be found. Principles found in Lev Semenovich Vygotsky's sociocultural theory and other constructivist ideas resonate most with social cognitive theory. The principle of instructional scaffolding is very similar to that of mentoring in social cognitive theory. As in mentoring, a teacher initially takes the lead in learning a situation in which they construct temporary scaffolding to help guide and develop skills. As the student becomes more competent, the teacher withdraws the scaffolding so the learner can perform skills independently. This can also be identified with the behaviorism theory of shaping to guide learners through stages of skill acquisition.

Similarly, the application of apprenticeships, social constructivism, draws comparisons to mentoring. Apprenticeships relate to Vygotsky's concept of the zone of proximal development (ZPD), which describes the difference between what students can do on their own and what they can do with assistance. Because apprentices work in areas beyond their skillset, they rely on their mentors to develop their understanding and skills.

In summary, social cognitive theory is a suitable method for teaching in a hands-on, mentoring, or precepting setting. Learning can depend highly on the learner's motivation to obtain knowledge through goals, outcome expectations, and values. Learners and teachers with higher self-efficacy may have more advantageous or successful outcomes in their tasks. Although social cognitive theory may not best explain the role of memory or information processing, it is a highly recommended model for teaching and instruction. Methods such as mentoring can help learners become more adept in their professional and personal lives.

References

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