Learning Theory Paper and Job Aid

Ritika Bhargo

Department of Learning Design and Technology, Purdue University

EDCI 531: Learning Theory and Instructional Design

Dr. Shaun Scott

Date: October 5, 2024

**Additional Supplementary Job Aid**

To accompany this paper, I have developed a job aid to help readers differentiate between the following theories: Behaviorism, Constructivism, Social Cognitivism, Cognitive Learning Processes, Cognitive Information Processing (CIP), and Gagne’s Theory of Instruction. Additionally, I will share examples of the types of projects each theory is most suitable for. This job aid is a collection of my knowledge and learnings from the ***EDCI 531 - Learning Theory and Instructional Design* course** at Purdue University as well as additional research. This resource is intended for all learning professionals who are interested in understanding various learning theories and how they may compare or differentiate from one another and in what contexts to apply them.

**Introduction**

In this paper, I will delve deeper into Behaviorism, Social Cognitive Theory, Cognitive Learning Process, Cognitive Information Processing (CIP), Constructivism, and Gagne’s Theory of Instruction. The role of learning theories in education is to form the basis of how learners learn. Each learning theory offers a different perspective by establishing how learners process information. Reg Dennick summarizes the concept of theories, eloquently. He states, “There is no single overarching theoretical framework that accounts for how we learn in all situations. We know that we do learn and that we have knowledge but there is no consensus on the relationship between the mechanism by which our brains learn and the optimal way in which we should be taught” (Dennick, 2016). There is no “be all end all” solution to developing instructional materials or training programs and theories are a great reminder of how like each theory, each learner, and training is unique.

**Behaviorism**

In the study of Behaviorism there have been several key theorists who have established significant research and findings on Behaviorism that build on a previous theory. Originally, proposed by John B. Watson, he believed that behaviors could be studied in a systematic and observable manner with no consideration of internal mental states (McLeod, 2024). Overall, Behaviorism suggests that learners best learn from the observable behaviours around them and emphasizes positive reinforcement for positive outcomes. See a summary of how behaviourism has evolved overtime tabulated below.

|  |  |
| --- | --- |
| **Theorist** | **Behaviorism Over the Years** |
| Ivan Pavlov | Established the principles of classical conditioning, which is a multistep procedure that initially involves presenting an [­](https://plus.pearson.com/products/9981662f-19c8-4f10-9a74-09a7cebcc860/pages/glossary.xhtml#key-241cbd6d-fb6e-53c4-bc73-b62f93843590)unconditioned stimulus (UCS), which elicits an unconditioned response (UCR) (Schunk, 2020, p.g., 85). |
| Edward Thorndike | Believed that responses to stimuli are strengthened when followed by satisfying consequences and through using repetition (Schunk, 2020, p.g., 120). |
| John B. Watson | Believed in observable and measurable behavior over introspection, which he considered to be unreliable (Schunk, 2020, p.g., 79). |
| B.F Skinner | Established operant conditioning and the concept of positive reinforcement through reward or punishment. |

**Social Cognitive Theory**

This theory was founded by Albert Bandura, who is also known for his work on observational learning, self-efficacy, and reciprocal determinism (Nickerson, 2024). This theory emphasizes how a large portion of a learner’s learning occurs in social environments and through the observation of others. This theory is like behaviorism where observation aids learning, however, it is different in that it encourages learners to develop their own meaning of the learning. This theory would be the most relevant in situations where there are opportunities to foster shared collaboration – the use of shadowing in on-the-job training.

**Cognitive Learning Processes**

This theory refers to a learner’s cognitive approaches required for the facilitation of learning to occur. While concept learning and concept teaching are central to this theory, an important component of this theory is Metacognition. Metacognition refers to the learner’s capacity to reflect on and evaluate their own cognitive processes such as decision-making, memory and perception (Katyal & Fleming, 2024). This theory is different from both Behaviorism and Social Cognitive Theory in that it taps into the learners critical thinking, which the previous two theories do not emphasize. An example of a learner using their own cognitive learning processes is when they participant in self-reflection throughout the lesson to assess their own mental response to the learning. See the tabulated chart below a learner would consider aiding their metacognitive processes.

|  |  |
| --- | --- |
| **Ask yourself** | 1. What are my learning objectives? |
| 1. How do these objectives align with my goals? |
| 1. What prior knowledge do I have related to this topic? If any. |
| 1. How do I know I am understanding the learning? |
| 1. Where are the gaps in my learning? |
| 1. What strategies can I adopt to close those gaps? E.g. seek help, more demonstrations, asking questions. |

**Cognitive Information Processing**

This theory refers to how people attend to environmental events, construct and encode information to be learned and relate it to back to knowledge in memory, store new knowledge in memory, and retrieve it as needed (Mayer, 2012; Radvansky & Ashcraft, 2014 as cited in Schuck, 2020, p. 169). When using CIP, the learning is designed such that it is easy for the learner to process, store, and retrieve the learning without applying too much of a cognitive load. Some ways to incorporate CIP into the design is by organizing learning such that it provides context, chunking or “right-sizing” the content, supporting the learner’s encoding process, assisting the learner to develop familiarity, encouraging the rehearsal stage, supporting the storage process of the learning, and finally allowing for information/knowledge retrieval. For instance, CIP can be best leveraged when teaching a technical skill to a learn such as how to develop an eLearning course, instructional video or how to use a certain software or technology.

**Constructivism**

The constructivist approach or theory of learning, whose philosophical origins are frequently ascribed to Immanuel Kant and whose educational origins to Piaget, is based on the notion that the act of learning is based on a process which connects new knowledge to pre-existing knowledge (Dennick, 2016). This theory focuses the concept that learners formulate their own knowledge as they understand “reality.” While this theory is not similar to Behaviorism or Cognitive Information Processes, it is similar to Social Cognitive Theory because learning in a constructivist environment is generally collaborative. This theory allows the learner to be in charge of their learning where the instructor’s role is of guidance and support. Additionally, one can draw parallels to Cognitive Learning Processes theory because constructivist learning also requires a level of critical thinking and the self-reflection processes would apply. This approach would be best suited for collaborative and discussion-based learning environments where it is beneficial to offer learners more “control” of their learning by allowing them to form their own perceptions such as leadership development programs, soft-skill development programs or mentorship/coaching programs.

**Gagne’s Theory of Instruction**

Robert Gagne is one of the foremost contributors to the systematic approach to instructional design (Khadjooi, Rostami & Ishaq, 2011). This theory suggests that Instructional Designers can adopt a methodical approach to instructional design practices that can be used to execute learning effectively. His theory identifies nine instructional events that facilitate learning. These stages include gaining the learner’s attention, informing the learner of learning goals or outcomes, give the learner an opportunity to consider prior learning or knowledge, presenting the content, providing the learner with guidance, allowing the learner to practice what they’ve learned, offering feedback to the learner, assess the learner’s performance, and finally, enhance the learner’s overall knowledge retention. This theory is different from other theories that it offers a framework for instructional design, but it aligns with Cognitive Learning Processes when considering previously gained knowledge and the rehearsal step in CIP.

See the tabulated chart below for the questions a designer should consider.

|  |  |
| --- | --- |
| **Ask yourself** | 1. How will the learning capture the learner’s attention or interest or what is my “hook,” what are my learning outcomes? |
| 1. Are my learning outcomes or goals succinct? |
| 1. What prior learning is the learner coming with? |
| 1. What is the content I want to present and what is the most effective way to display and communicate it? |
| 1. Where in the learning can I provide the learner with guidance through sharing best practices or tips to create sticky learning? |
| 1. How can I provide the learner with an opportunity to practice and apply what they’ve learned in an engaging environment? |
| 1. How do I offer constructive feedback and how can I assess the learner? |
| 1. What are my metrics for assessment that will show me the changes in their behavior? |
| 1. Finally, how to I continue to support the learner as they continue to learn and improve their retention? |

**Implications for Education**

All learning theories inform teaching best practices, learning design and assessment methods in their own way. For instance, while Gagne’s Theory of Instruction focuses on how to effectively frame the instruction, Immanuel Kant’s concept of Constructivism places the emphasis on the learner and how they want to learn by forming their own “reality” and Social Cognitive Theory emphasizes learners learn best in collaborative and social environments and from each other. Regardless of what theory one chooses all theories if applied correctly will enhance the overall learning and learner experience.

**Conclusion**

To summarize, my paper provides a general overview of each of the key theories that play a pivotal role in shaping learning and instructional design and experiences. I believe learning theories are important in educating Instructional Designers, content developers or other wide ranges of learning professionals – how learning occurs and the processes in which learners best learn so that learning can be crafted to meet the learning needs of the learner. Learning theories offer flexibility as depending on the goal of the learning or the desired learning objectives, a designer can apply one learning theory or many to a given learning situation or experience. As educators and designers, we can leverage this plethora of knowledge and apply it as a foundation to the learning experiences we want to curate with the best interest of our learners in mind.

**References**

Dennick, R. (2016, June 25). *Constructivism: Reflections on twenty-five years teaching the constructivist approach in medical education*. International journal of medical education. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4939219/

Katyal, S., & Fleming, S. M. (2024, February). *Metacognition*. Metacognition - an overview | ScienceDirect Topics. https://www.sciencedirect.com/topics/neuroscience/metacognition#:~:text=Metacognition%20is%20defined%20as%20the,adaptive%20behavior%20in%20various%20contexts.

Khadjooi, K., Rostami, K., & Ishaq, S. (2011). *How to use gagne’s model of instructional design in teaching psychomotor skills*. Gastroenterology and hepatology from bed to bench. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4017416/

McLeod, S. (2024, February 1). *Behaviorism in psychology*. Simply Psychology. https://www.simplypsychology.org/behaviorism.html

Nickerson, C. (2024, February 2). *Albert Bandura’s social cognitive theory*. Simply Psychology. https://www.simplypsychology.org/social-cognitive-theory.html

Schunk, D. H. (2020). *Learning theories: an educational perspective* (8th edition). [eBook]. Pearson. <https://plus.pearson.com/home>.​