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Lev Vygotsky is the best known social constructivist theorist and posits that “the cultivation of a learning environment that fosters growth through joint participation, conversations, dialogues, interactions and apprenticeships” is central to growth and development of the learner (Ogunnaike, 2015). The value in Vygotsky’s learning theory stems from the emphasis on how knowledge is socially mediated through interactions with the “more knowledgeable other” . I reflect on myself as a learner as well as my students and see that his theories hold true. The capacity to learn and understand is limited when the learner has no one to interact and practice with. A learner’s basic level of understanding on a concept can expand when learning through interaction with peers and with an adult. I value the idea of learning as students construct meaning and build deeper understanding through partnership. Observing students engage and invite one another to conversations has shown what the child is able to do and achieve through collaboration, as per Vygotsky’s Zone of Proximal Development theory (Ogunnaike, 2015). Students practice using the right terminology, they help each other by clarifying misconceptions, and inevitably reach a higher and deeper level of knowledge and understanding. This practice and collaboration in the classroom aligns with Vygotsky’s claim that “[t]hrough playing, children accesses emerging skills that enable them to create rules that must be followed, practice self-regulation, engage in problem solving, and deliberately activate prior memory” all of which are essential in learning (Ogunnaike, 2015). According to social constructivists, meaningful learning occurs when individuals are engaged in social activities, which is similar to Robert Gagne’s Nine Events of Instruction. I have been able to see how it matches and pairs well with the social constructivist learning theory. Gagne was an education psychologist who provided a behaviorist framework while also drawing from the cognitive approach. He created nine instructional events that are easily adoptable and applicable by social constructivists.

Design Methodology

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Abstract

This paper explains the similarities between Lev Vygotsky's social constructivist learning theory and Robert Gagne's Nine Events of Instruction instructional design model. The paper serves to explain the overlapping ideas between the two theorists and their theories. The paper discusses the overlapping areas as verbal information, intellectual skill, cognitive strategy, attitude and motor skill.

Design Methodology

Instructional designers use instructional design models to help make sense of abstract learning theory that enable real world application for learners. It is essential that instructional designers establish a foundation of an instructional design model to provide framework, structure, and meaning to their project design. There are numerous design models to choose from and many share similar instructional design principles and patterns. In addition to having a set instructional design model to serve as a steady foundation for the design, it is equally important for instructional designers to have a learning theory foundation. Both are equally necessary. The instructional design model is the framework and tool that guides the structure of a course and leads the learner to the topic. Learning theories address how people learn and serve as the pedagogical basis of addressing the needs of learners. Instructional designers have the task of designing effective instruction and the first task is to choose an instructional design model and a learning theory. Having a solid foundation of the instructional design model and the learning theory will allow designers to be able to design more effectively and in a more organized manner.

Instructional Design Model: Robert Gagne's Nine Events of Instruction

The instructional design model that most resonates with me is Robert Gagne's "Nine Events of Instruction," because it provides a behaviorist framework while also drawing from the cognitive approach. Being that the learning theory I align myself with is that of constructivism, I wanted to choose an instructional design model that draws from behaviorism and cognitivism, which are the other two of the three frameworks. I wanted to have a balanced framework to be able to meet the needs of any learner. Gagne's instructional design model is also one that could

be used with any of the three frameworks and I found it to be extremely practical for the discipline of Psychology and the way in which I teach the course. Table 1 explains each of the nine instructional events, provides an explanation, as well as presents various instructional strategies that could be adopted. Gagne's Nine Events of Instruction is a linear approach and his sequential outline is intended to be followed as such.

Learning Theory: Lev Vygotsky's Social Constructivism

Learning theories are generally categorized into the three main frameworks of behaviorism, cognitivism, and constructivism. A natural overlap exists in both theory and practice, but generally they are seen as three different categories. As a learner and as an instructor, I have always gravitated towards the social constructivists theory, which is categorized under constructivism, but I also feel that it includes components of cognitivism involving thinking, problem-solving, and the mental processing of information.

Lev Vygotsky is probably the most well known figure in social constructivism as he is the founder of this learning theory, which is "a highly effective method of teaching that all students can benefit from, since collaboration and social interaction are incorporated" (Powell & Kalina, 2009, p.241). This learning theory emphasizes social interaction and defines learning as an active process where learners create meaning in their social contexts. Social constructivists also emphasize "the role of others, or the social context, ...[and it has] pushed educators to reexamine the extent to which learning is an individual process (Jones & Brader-Araje, 2002). I like how according to this theory, knowledge and understanding is still constructed by the learner, placing the cognitive load in the responsibility of the learner, but it also places the importance of the social environment created by the facilitator to create an environment conducive of such

learning. I think about the classroom environment and how it should highlight the social aspects of learning as learners try to make sense of new information and fit it into their frame of reference, showing my social constructivist learning and teaching approach.

Pairing Gagne and Vygotsky

Just about any instructional design model and learning theory can be paired together to fit not only the teaching style of the instructor, but also the learning styles of the audience. Gagne's Nine Events of Instruction is much more general than Vygotsky's social constructivist approach and therefore I will use the domains of Gagne's learning outcomes and show how it supports the social constructivist learning theory of Vygotsky. Gagne had five categories of learning outcomes: verbal information, intellectual skill, cognitive strategy, attitude, and motor skill.

Verbal Information

According to Gagne, verbal information is defined as "declarative knowledge" and refers to the learner's ability to state facts, concepts and procedures previously learned (Gagne & Driscoll, 1988, p.44). This declarative knowledge is built on the foundation of existing knowledge, which is similar to Vygotsky's principle about accessing prior knowledge and allowing learners to build upon what they already know to accommodate or assimilate knowledge and understanding. Gagne states that "The internal conditions deal with previously learned capabilities of the learner. Or in other words, what the learner knows prior to instruction. The external conditions deal with the stimuli (a purely behaviorist term) that is presented externally to the learner. For example, what instruction is provided to the learner" (Gagne, Briggs & Wager, 1992). It is through the social interaction that learners are able to practice language that translates to understanding. Vygotsky emphasized the role of language and culture

in the process of learning, claiming that the social environment of the social constructivist learning theory helps to provide the framework through which learners experience, communicate and understand. According to Vygotsky, language is essential in processing verbal information and he ultimately believed that knowledge is constructed through the social interaction where verbal processing and fluency evolves.

Intellectual Skill

The category of intellectual skill is about the learner's understanding of how to carry out an action. This is also what some might refer to as procedural knowledge (Gagne & Driscoll, 1988, p.47). This category of Gagne's is closely connected to Vygotsky's Zone of Proximal Development, which also shows the social constructivists view of how learning is a social process. Vygotsky explained that there is a limited learning potential a learner has by himself; however, through scaffolding, a process of being guided by a knowing other, the learner can move to meet the potential of what he is capable of learning. The principle of scaffolding involves three different levels: what an individual knows or can do on his own, what an individual can know or can do on his own with the assistance from others, and what an individual cannot know or perform even with assistance. Vygotsky's concept of Zone of Proximal Development states that learning occurs when learners are integrated into a knowledge community, which is the classroom environment, where collaborative assimilation and accommodation of new information occurs. This same process applies to Gagne's domain category of cognitive strategy.

Cognitive Strategy

Cognitive strategies are in essence the mental processing skills involved where “learners regulate their own internal processes of attending, learning, remembering, and thinking” (Gagne, 1985, p.55). This is seen through the ways in which learners think creatively in problem solving as they apply cognitive strategies. Through the collaborative environment of a social constructivist classroom, learners are able to learn from their peers as well as learn with their peers. In math class, the teacher presents a real world math problem and instructs the learners to figure out the problem in their own way. The problem leads me to compute it in the way I know and understand, demonstrating that this problem fits into the Zone of Proximal Development of what I am capable of solving on my own. When it comes time to share with the learning community, I realize that there are numerous other ways of solving the same problem, yet I am unsure how. The collaborative environment might call for students of different methods and abilities to work together in order to help each other get to the Zone of Proximal Development that is achievable with that of another, thus developing the cognitive strategy which Gagne pressed upon in his instructional design model. Without the collaborative learning community, the knowledge and ability of a learner is pigeonholed into what they are capable of achieving. In order to expand knowledge and application, learners must engage with others to understand other means of processing and advance in their cognitive abilities.

Attitude

Gagne and Driscoll define attitude as an “acquired internal state that influences the choice of personal action” (1988, p.58). Attitude is looking at the mindset of learner’s and the approach they choose to take. A facilitator of the social constructivist learning theory works to

make instruction relevant to the learners. This involves helping learners develop attitudes and beliefs that will support present learning as well as building a community of lifelong learners. The teacher is more of a guide or a facilitator in a social constructivist classroom and helps students put everything into a framework. Students are often given a choice and the importance is placed on the learner's ability to internalize the learning or make the knowledge relevant. For instance, students in my Psychology course are required to do an experiment on conditioning, but any choose whether they want to conduct a classical conditioning experiment or an operant conditioning experiment. They are told to choose an experiment to help them understand something better in their own lives. They are also assigned a sleep study experiment where they are the subjects themselves and they understand who they are as a sleeper. Framing the context of the course into something tangible and relevant for the learners results in a community of learners who are led by their curiosity as they bring in their own frame of reference to help others understand the concepts of the course. Gagne's first event to engage the community of learners highlights the importance of working with a community of learners who have positive attitudes about learning. The course could easily be taught in a lecture style, but the transfer and internalization of the information would not be present and the engagement and attitude of the learners would be significantly lower.

Motor Skill

Motor skills can be an indication of performance primarily for younger learners than older learners as it emphasizes the smooth and accurate performance of muscle movement (Gagne & Driscoll, 1988, p. 62). As a high school teacher, I usually utilize Gagne's category of motor skills to help students with their cognitive strategy. For example, in the Psychology Unit

about our Biological Foundations, students are to embody a neuron and each part of their body is associated with a specific part of the neuron. Learners are to recite the process of neuron communication as they physically pick up neurotransmitters and explain how it moves from one end of the neuron the other end. After they have mastered this understanding which is represented in Gagne's fifth event, they have to then create a model demonstrating this process, which represents Gagne's sixth event. Gagne's emphasis on the motor skills is best associated with the social constructivist theory that learners need to be active participants of their own learner and therefore bear the responsibility of their own cognitive load.

Conclusion

Teaching high school juniors and seniors who are on their final turn before arriving to their adult destination requires teachers to guide learners to become more independent. The social constructivist framework of Vygotsky's provides a basis for learners to be self-directed learners who can problem solve and be facilitators of their own learning, which is what a 21st century learner about to graduate high school ought to be. These learners need to be critical thinkers who are able to use higher order thinking skills and have the ability "to question, hypothesize, analyze, evaluate, synthesize, strategize, plan, prioritize, implement, produce, and reflect" (Luterbach & Brown, 2011). Neither the social constructivist approach nor Gagne's instructional design model has teachers spoon feed knowledge to students only to regurgitate the information back to prove learning has occurred. Both the instructional design model and the learning theory promote teachers to be facilitators that guide learning. I expect students to have ownership over their own learning and be in the driver's seat of their learning, while I create learning opportunities for learners to inquire, experiment, collaborate, and reflect. Gagne's Nine

Events of Instruction and the social constructivist approach best supports the targeted audience of my Psychology I course.

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Table 1 Gagne’s Nine Events of Instruction

#	Instructional Event	Explanation	Instructional Strategies	How This Support Social constructivist Learning Theory
1	Gain Attention	This signals the beginning of a new learning event. It should evoke curiosity.	<ul style="list-style-type: none"> • announcement in the New item area • leading questions in the discussion area • present a dilemma • present an analogy • present something controversial • short video or audio 	Problem Based Learning or introducing real world situations supports the social constructivist approach to learning.
2	Inform the Learner of the Objectives	Describe in detail what you expect them to do, and how that will be assessed, but keep it short.	<ul style="list-style-type: none"> • list of objectives • guidelines • rubrics • checklists • discussion 	By informing the learner of the objectives, the learners are understanding the cultural context of the learning.
3	Stimulate the Recall of Prior Knowledge	This step bridges prior knowledge to upcoming instruction. This is the “hook.”	<ul style="list-style-type: none"> • review prior material • explain how prior knowledge relates to new topic (text/ audio) • initiate discussion by asking students to discuss prior learning 	Activating prior knowledge as a base to acquiring new knowledge is essential in social constructivism.
4	Present the Stimulus Material	This is the “lecture” part of the new topic.	<ul style="list-style-type: none"> • readings • audio lectures • PowerPoint with audio • videos • web sites • other resources 	The More Knowledgeable Other (MKO) facilitates the construction of new material for the learner in a social context.
5	Provide Learning Guidance	The instructor provides guidelines, tools, and strategies to support learning, but does not give answers.	<ul style="list-style-type: none"> • ask for the “muddiest moment” of the lecture (feedback) • study guides • checklists • rubrics • deadlines • whole class or group discussions 	According to the social constructivism theory, the guidance comes in the social context from learners who have already constructed new knowledge. This is Zone of Proximal Development of the learning potential achieved by others.

6	Elicit Feedback	This is the developmental or practice phase of the topic to be learned. The point is to allow students to practice new knowledge before they are assessed for a grade.	<ul style="list-style-type: none"> • practice quizzes with little or no weight • drafts of papers • whole class discussions • games 	Practice occurs in play where learners experiment by use of language. Learners engage in social context and talk through the process as they construct meaning.
7	Provide Feedback	Feedback is important when learning new information. Prompt feedback can reinforce retention of the material. Feedback can come from self-tests, peers, or the instructor. The instructor evaluates progress and provides scaffolding when necessary, but does not give answers.	<ul style="list-style-type: none"> • peer review/feedback • instructor review/feedback • practice quizzes give immediate feedback • discussions • games 	<p>The feedback is provided in the social context of play, where others in the learning community (students and teachers) respond to the learner.</p> <p>Scaffolding is another element of this process, where others help the learner construct their own knowledge.</p>
8	Assess Performance	This is the final or summative assessment. By now, the students should have had practice and feedback to the degree that they should be ready for the summative assessment. Students receive no help during this phase. Summative assessment could come at the end of each learning module, at mid-term, or at the end of a course.	<ul style="list-style-type: none"> • finished paper • products • quiz • essay exam • presentation • other 	Once meaning and understanding has been constructed by the learner, performance can be assessed by providing the learner with a real life scenario or a means to apply the constructed knowledge. This can be done through a project or a write up where feedback and reflection are involved.
9	Enhance Retention Transfer to New Situation	This step helps the learners internalize the information.	<ul style="list-style-type: none"> • debrief the class on what has been learned • summarize the learning that has occurred and apply it to a new situation • evaluate their own learning experience • write a reflection on their learning experience (journaling) • identify a new situation or application for the new knowledge 	In the social constructivist theory of learning, a learner would benefit from reflecting on the process of constructing new knowledge by addressing whether knowledge was assimilated or accommodated.