Learning Theories | at work in Mrs. Van Loo's class

I recently had an opportunity to reflect on several prominent learning theories and how they impact my teaching practice. That reflection lead me to create this document and a Prezi.

I. Applications in the Classroom

I begin here with a brief overview of three theories of learning. In the slides that follow, I will further explain and illustrate these theories in the context of my own teaching practice.

All photos of students are of my own.

A. Behaviorism

One learning theory is Behaviorism, which conceptualized how new behaviors are acquired by learners. Pioneers of this theory included John Watson, B.F. Skinner, and Edward Thorndike. Behaviorism includes classical conditioning and operant conditioning, along with many applications of these approaches. According to behaviorists, people can be trained to exhibit certain behaviors through reward and punishment (Phillips & Soltis, 1998).

Some classroom applications include the use of token economies like stickers, tickets, and digital points to positively reinforce good behavior. I typically don't use such rewards; however, as I'll explain in this presentation, I have found several applications of Behaviorism in my own teaching practice.

B. Cognitivism

One of the theories within Cognitivism is Jean Piaget's Theory of Cognitive Development, also sometimes referred to as Cognitive Constructivism (Schunck, 2012). According to the Theory of Cognitive Development, children construct their own knowledge as they move through four biological stages which impact their experiences with their physical and social environments. Each time they encounter new information, they must determine whether this new knowledge fits with their existing cognitive structure, or schema (Schunck, 2012). The new reality needs to be assimilated into the existing schema, or the schema needs to be changed to accommodate the new reality, two processes that work in tandem to allow individuals to build new knowledge.

As I will explain in this presentation, Cognitivism plays a large role in the decisions I make as a teacher.

C. Situative Perspective

The Situative Perspective of learning was developed in the 1990s by Jean Lave and Etienne Wenger, who proposed the concept of communities of practice, wherein newcomers learn in a "continuous, active, engaged, situated and identity-forming practice," (Cox, 2005, p. 528). The theory was based on the work of Lev Vygotsky the creator of the Sociocultural Theory, also known as Social Constructivism (Schunck, 2012).

Whereas Cognitivism proposed that learning is individually constructed by the learner, the Situative Perspective proposed that learning is constructed by the learner in a social context.

II. Teamwork

A. Constructivism

Piaget's Cognitive Constructivism and Vygotsky's Social Constructivism are the two main branches of Constructivism, both of which state that learners must construct their own knowledge, rather than having it "imposed from outside people" (Schunck, 2012, p. 230).

Both theories of Constructivism de-emphasize the role of the teacher as a deliverer of instruction, and emphasize the importance of making learners actively involved through hands-on activities and social interaction (Schunck, 2012).

B. Why Teamwork?

According to Vygotsky's Theory of Social Constructivism, social interactions are a key part of a good learning environment. Knowledge is co-constructed between two or more people, as students model for and observe each other. In this environment, students gain new skills and higher self-efficacy for learning, the belief that they capable of being in control of their own learning and able to learn new things. Language is key, and develops over time from social speech, to private speech, to inner speech (Schunck, 2012).

C. What Happens When Students Learn Alone?

Students need time to process what they are learning on their own. Even when they learn independently it is still, according to Constructivism, socially mediated. All of the tools of language students use to work independently, including inner speech and written language, were learned as they previously worked with other people (Schunck, 2012).

D. Reflections

Students in my elementary classes begin working in social groups as early as kindergarten. It can be challenging for students to learn to work cooperatively, yet this 21st-century skill is critical for them to co-construct knowledge.

In kindergarten, students work in pairs to design and construct houses to protect the Three Little Pigs. In first grade, students explore the properties of light and sound in small groups, exclaiming in surprise and delight with each new discovery. Fifth graders work in small teams to build and modify robots to move materials on a field. Then they program those robots to move autonomously. As students are challenged, they work with their own groups to move forward, and they move among groups to help each other master difficult concepts.

In some of my lessons, direct teaching still seems most efficient. Nevertheless, constructivists would argue that allowing students to model and teach content to each other helps them gain self-efficacy. Going forward, I will continue to try to find ways to balance direct instruction times with group work time, even if it means constraining my direct instruction time to short bursts.

Finally, according to Schunck (2012), "Research shows that cooperative groups are most effective when each student has assigned responsibilities and all must attain competence before any are allowed to progress" (p. 246). Although I have created roles for group members for each unit, I do not always enforce that members are performing their individual responsibilities. I will make an effort in the future to check in with groups, both formally and informally, to assess how the students are performing as a group. I recognize that working in groups can be stressful for some students, and it would make sense to put systems in place to help ensure that they run smoothly.

III. Citizenship

A. Why Bother With Citizenship Lessons?

It is difficult to help students construct knowledge if poor behaviors in the classroom prevent the teacher from being able to give instructions or prevent groups from being able to work together. In the classroom, good citizenship is conducive to a positive working environment, and it must be taught.

B. Behaviorism - Conditioning in the Classroom

1. Classical Conditioning

Classical conditioning, discovered by Ivan Pavlov in the early 1900s, involves training someone to respond to a stimulus (Phillips & Soltis, 1998). In my classroom, I teach my students that when I clap a pattern,

they stop what they're doing, clap the pattern back, and wait quietly for directions. When they come to school, they do not necessarily know to do this (unless they learned it at camp or preschool).

Before conditioning, if I ask them to be quiet and listen, they usually will do this. If I clap a pattern, they will not know what to do. I teach them (condition them) by telling them, "When I clap like this, you do this." As they're learning, I praise the correct responses and ignore or redirect incorrect responses. After conditioning, I can clap the pattern and get the desired response.

2. Operant Conditioning

Operant conditioning was theorized by Edward Thorndike who realized that sometimes we may want to condition someone to exhibit behaviors they do not do naturally. We may do this by applying rewards and punishments to modify behaviors (Schunck, 2012).

Although some teachers use class points, tickets, or stickers to reward desired behavior, I prefer to occasionally thank students for behaving appropriately or even just ignore improper behavior. Immediate feedback is effective for teaching students good citizenship in class. Good citizenship in my class includes how to interact with others while sitting on the carpet and how to properly return iPads to the iPad cart.

C. Digital Citizenship

Thorndike discovered that rewards help to reinforce good behavior by creating a strong connection. And while punishments will often cause a reduction in a bad behavior, they will not cause students to forget the behavior. Appropriate behaviors need to be taught to replace the inappropriate behaviors (Schunck, 2012).

As part of my role of teaching digital citizenship, I help students learn the proper way to use the iPads. This includes learning to stop and listen when directions are given. As students are working, I occasionally ask them to quickly flip their iPads face down so they're not distracted by the screens. If the class follows the direction together, I'm able to give directions quickly and they learn that the correct behavior gets them more working time. If individual students repeatedly slow down the rest of the class by continuing to work, this is the one time I use punishment in the class. I do this by remotely locking their iPad screen. While it is a punishment according to Behaviorism, I do it to benefit the whole class, not to be punitive. There are no additional consequence after the screen is locked; once we move on, they move on with the rest of the class. I do this to remind them they need to follow directions, and I also do it for the benefit of the rest of the class who is waiting for them.

D. Reflections

I want to be the kind of teacher who allows time and space for quality, hand-on, inquiry-based problems and work time. I do not want to have to spend a lot of time issuing rewards for appropriate behavior or locking iPads when students waste time. That said, it is critical to teach appropriate behaviors so that we can maximize the amount of class time for hands-on learning. Looking forward, instead of avoiding dwelling on poor behaviors, I will strive to directly teach appropriate behaviors right away.

IV. Active Learning

A. Equilibration

As I noted earlier, when people encounter new information, they are forced into a state of disequilibrium or cognitive conflict. In other words, they have to confront new knowledge, consider what they think they know (schema), and figure out how those things fit together. They are biologically driven to return to a state of equilibrium (Schunck, 2012). Cognitive development, or construction of new knowledge, only happens when a learner is forced into a state of disequilibrium (Schunck, 2012). A learner learns when they find something new and have to confront how it fits with what they think they already know.

B. Learning is Situated in Contexts

That said, the implication in the classroom is that teachers should strive to "involve students actively in their learning and to provide experiences that challenge their thinking and force them to rearrange their beliefs" (Schunck, 2012, p. 235). This means students need a classroom context where they can work hands-on and construct new knowledge.

This needs to be done in a way that recognizes and serves students' prior knowledge, as well as the students' home cultures.

1. Prior Knowledge

When students are constructing their own knowledge, they are building upon prior knowledge, correct or not. If the prior knowledge isn't in place, my job as an educator is to help get it there. In one first grade unit, we begin with a story where students are in a national forest and cannot get cell phone service. Because many of my students are city dwellers who have not been to such a place, I show pictures of dense forests to help them understand.

2. Student Culture

Every student that enters the classroom does so with a different perspective. In a district like the one where I teach, we have students who have immigrated from all over the world, as well as students whose families have lived here for generations. They represent many religions, languages, and socioeconomic statuses. As I work with my students, it is important to remember their perspective will impact how they perceive each problem in the classroom.

C. Piaget's Stages of Development

Piaget, in his Theory of Cognitive Development, proposed that there are four biological stages through which everyone passes. Depending on what stage a child is in, they are able to understand different concepts, from concrete to abstract (Schunck, 2012).

As a K-5 educator, I teach students at many of the stages. In one single classroom, I may have students in different stages. This means that I need to be flexible in my teaching style, have an understanding of what the stages mean for my students' understanding, and be prepared to present the same concepts in different ways.

D. Struggle, Failure, and Growth Mindset

One construct of Cognitivism is a growth mindset. Giving students the opportunity to struggle, fail, and keep trying starting at a young age helps them to see themselves as having abilities they are able to improve. This helps them to develop a growth mindset, which can influence motivation, learning, and achievement (Schunck, 2012).

Coding and robotics are two subjects where I have seen students persevere through some challenging setbacks and achieve a great deal on their own. A very common exclamation I hear in my class is, "Finally!" said with glee when a robot or a program works successfully following days of active struggle. This exclamation and joy does not happen when something works easily the first time. But when a student or group struggles, fails, struggles, and finally succeeds, those students realize they own their own ability to learn.

E. Reflections

Active learning is not just active for the students; it is active for the teacher, as well. Although it can be a lot to manage different groups working on different aspects of a project at the same time, it is exciting. As with teamwork, I try to incorporate lots of opportunity for active, hands-on learning through inquiry-based activities. However, I see that there are opportunities for improvement.

As I move into my sixth year of teaching and my third year in my current role, I will try to approach each unit of instruction with fresh eyes. My goal is to reduce the times that I give direct instruction and try to provide more opportunities for students to make discoveries. It can be time-consuming and challenging to incorporate these activities into a tight schedule but it is worth it when I hear, "Wow! That is so cool!"

V. Scaffolding

A. Zone of Proximal Development

One of Vygotsky's concepts in Social Constructivism (of Situative Perspective) is the zone of proximal development (ZPD). ZPD is the difference between what children can do on their own and what they can do with assistance from others, including adults and more capable peers (Schunck, 2012).

As a child learns new skills and concepts, the ZPD expands, allowing that child to learn even more. As I discussed earlier, according to Constructivism, they are constructing their knowledge on what they already know.

B. Instructional Scaffolding

Zone of proximal development and instructional scaffolding are not the same thing; however, the use of instructional scaffolding is one tool for supporting a student as they build upon their ZPD. Instructional scaffolding refers to "the process of controlling task elements that are beyond the learners' capabilities so that they can focus on and master those features of the task that they can grasp quickly" (Schunck, 2012, p. 245). Instructional scaffolding is meant to support a student with tasks they are not already able to do on their own, so that they can focus on what they are able to do.

C. Sequence of Curricula

The behaviorists Thorndike and Gates argued that Sequence of Curricula is important. While not exactly the same thing as instructional scaffolding, they argued that it is important to introduce a new concept when it is time to use it, when students see it as a valuable thing to learn, and when it is "most suited in difficulty to the ability of the learner," (Schunck, 2012, p. 77). This seems to align very well with Vygotsky's zone of proximal development.

This just-in-time teaching approach proposed by Thorndike and Gates favors an approach where knowledge and skills are taught with different subjects, not segregated by subject (Schunck, 2012).

D. Reflections

Each of my units of study that I teach includes several activities, followed by a project, then a problem to solve. Although it sometimes is a challenge to complete all of those activities within the allotted time I have to teach a unit, they are quite valuable as they help to scaffold the students' understanding.

For example, several of my coding lessons include important math concepts that they may not have learned yet, depending on when I see the students in the school year. In fourth grade, we incorporate the x-axis and y-axis into our lessons and use them to help make the characters in a game move in the direction the students want. Although this is a challenging concept and they may have not learned it yet in math class, students are motivated to learn it because they have a reason to - to make their video games work.

VI. References

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Schunck, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Boston, MA: Pearson.

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"Schema Theory and Cognitive Load Theory" by Harold Tinoco-Giraldo on May 17, 2016 at https://www.youtube.com/watch?time_continue=23&v=R9uOgYneh8g

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