



Learning in classroom by applying learning theories of Piaget (constructivist) and Vygotsky (Social Constructivist/Interactionist).

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Abstract

Basically, learning is not a linear process but it's more like discontinuous a qualitative shift (horizontal and vertical), on the completion of one step the other is initiated, as Piaget mentioned in his theory of cognitive development based on the idea that children actively construct knowledge as they explore and manipulate the world around them. Learning is adding new knowledge to the existing schema (knowledge about something) the new information or experience is incorporated in two ways assimilation and accommodation by discovering the knowledge without the need of a MKO, but on the other hand Vygotsky (Social Constructivist) believe that social interaction is an integral part of learning and by further enhancing the concept of assimilation and accommodation with the help of the term ZPD, a kind of combined word for both assimilation and accommodation, is the difference between what a learner can do without the help and what he or she can do with help, he also added another term MKO (More Knowledgeable Others), learning with the help of others. That can be a teacher, the grownups and any one from society through social interaction. Both theorist's talk about learning one way or the other. These foundational learning-theory domains provide insight and perspective to our understanding of the roles of an educator and the student in a school setting.

This paper is not intended to prove which theory works perfectly, but to get good results from the combination of both these theories to help both teachers (MKO's) and the learners in the process of education (learning).

Key words: Cognitive development, Schema, Assimilation, Accommodation, MKO, ZPD.

Jean Piaget was a Swiss psychologist (August 9, 1896 to September 16, 1980).

“When you teach a child something you take away forever his chances of discovering it for himself”. According to the above statement made by Piaget literally the need of a MKO is totally denied but if we look at it in the light of Schema, in which he says that learning is adding knowledge to the existing schema by assimilation and accommodation than it is quite obvious that the role of an MKO is also important in the form of scaffolding, not directly to involve but to help him/her in learning process. For example the teacher or the knowledge provider must not



participate in any activity directly but to provide an environment and let the child go through the process by giving some directions. This is the point of discovery, where knowledge is constructed and the new knowledge is added to the existing knowledge, and this is basically assimilation. Jean Piaget's theory of cognitive development provides a framework for understanding how cognition, or thinking develops. So providing ample opportunities for children to interact with the environment through all their senses allows them to gain a better understanding of the world around them. His theory of cognitive development suggests that children move through four different stages of mental development. His theory focuses not only on understanding how children acquire knowledge, but also on understanding the nature of intelligence. Piaget's theory of cognitive development proposes that humans cannot be given information, in which they immediately understand and use. Instead, learners must construct their own knowledge. They build their knowledge through experience. But this experience doesn't mean they will learn by their selves without the help of a teacher (MKO). The main point here is that they should not be given information, in which they immediately understand and use, this is the crucial point when he says that his chances of discovering it for himself is taken away but if the environment is created and the learner is allowed to interact, find, discover and add it to his existing knowledge through assimilation.

If the statement is considered as it is then the use of a teacher is not importantly necessary and the theory is contrary to the very foundations of the educational setup which we have today. But according to the research so far no evidence have been found to link this statement to Piaget, this statement is probably derived from his remarks in an article "Some aspects of operations" published in 1972, in this article Piaget is talking about it in different context because he has mentioned the role of a teacher in it.

"Children should be able to do their own experimenting and their own research. Teachers, of course, can guide them by providing appropriate materials, but the essential thing is that in order for a child to understand something, he must construct it himself, he must re-invent it. **Every time we teach a child something, we keep him from inventing it himself.** On the other hand that which we allow him to discover by himself will remain with him visibly..."

"The principle goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done—men who are creative, inventive, and discoverers".

According to the above mentioned statements from different articles, the role of a teacher is important and I suggest a learning environment from the perspective of a teacher, as the teacher has the main responsibility for creating an appropriate learning environment, but it is also important to consider learning environments from the learners' perspectives. Indeed, adult or mature learners are capable of creating their own, personal, relatively autonomous learning



environments by discovering the knowledge and adding it to their existing schema through assimilation and accommodation.

The use of Piaget's theory in Education

By using Piaget's theory in the classroom, teachers and students benefit in several ways. Teachers develop a better understanding of their students' thinking. They can also align their teaching strategies with their students' cognitive level (e.g. motivational set, modeling, and assignments). Their goal is to help the individual construct knowledge. Conservation of constancy, as defined by Garner (2008), "is the ability to understand how some characteristics of a thing can change, while others stay the same". In other words, it is the realization that even though an object can be changed physically, some of the characteristics for that object remain the same. For instance, if you give students modeling clay and tell them to mold it, the shape will change, but the color of the modeling clay will remain the same. Conservation of constancy "identifies relationships and makes sense of physical and abstract information" (Garner, 2007). Educators create, implement, and assess the curriculum being taught, assuming throughout the process that students can conserve constancies. If students lack this ability, they will not benefit academically because they have limited concrete sensory data and literal interpretations. Thus, they will experience difficulty in thinking abstractly, problem-solving, planning, and discerning relevance (Garner, 2008). For example, if the student is studying fractions, he or she may not be able to recognize that one-third and three-ninths are equal.

In order for students to develop their conservation of constancy skills, teachers must provide their students with opportunities to recognize similarities and differences at both the physical and abstract level (Garner, 2008). Many of us developed our conservation of constancy by doing chores and playing games. Piaget believed conservation is developed in students who are ages seven and eight. Visualization and reflective awareness are crucial to students' understanding of conservation of constancy. By encouraging students to notice similarities and differences in objects, they increase their conservation of constancy.

Encourage students to learn from their peers. This is especially relevant for children in the 2 to 7 age range but applies to students of all ages. Learning to listen thoughtfully and sensitively to their peers and respect a variety of different viewpoints will provide lifelong benefits for your students. Since different students excel at different areas of knowledge, learning from peers also provides a thorough education.

Allow students to learn from their mistakes. Piaget believed that children develop knowledge about the world through trial and error. Mistakes can be frustrating for the students as well as the teacher, but try to model patience and guide the student toward a different conclusion. Mistakes



show that the student is actively interacting with the world around her and trying out new ideas for herself.

Focus on the process as well as the result. Instead of focusing on having one right answer, pay attention to the many different steps it takes to reach a finished product. For instance, during an art lesson ask the students to notice the different ways they create a painting. Some may start at the bottom edge of the easel while others begin at the middle.

Respect each student's individual interests, abilities and limits. Different children reach developmental stages at different times. Rather than pressuring every child to adapt to one learning style, pay attention to each child's developmental stages and adapt the lessons accordingly. Piaget encouraged independent, hands-on learning and opportunities for discovery. Plan a variety of classroom activities that accommodate different learning styles, such as visual or auditory.

In a nut shell, Piaget's theories and works are significant to people who work with children, as it enables them to understand that children's development is based on stages. The construction of identity and knowledge as one predicated upon the development of stages helps to explain the intellectual growth of children of all ages. Piaget's ideas have helped to construct the notion of learning as not something linear and depository, but rather as an element that must be understood in accordance to the cognitive stage of the child. It is through this that Piaget's work becomes invaluable to educators and those who work with children for it allows one to understand why children learn at the rate they do. This is essential for those who work with children as it helps to explain some of the most fundamental issues behind why children learn and how to proceed with instruction of children.

Today many teachers still use Piaget's theories to enhance students' educations. Piaget studied knowledge development in people of all ages, including young children, and his theories are relevant for K-12 classrooms. Applying Piaget's theories to your curriculum is simple, effective and beneficial for students and teachers alike.

Vygotsky (Russian psychologist Lev Vygotsky (1896-1934))

Vygotsky's sociocultural theory of human learning describes learning as a social process and the origination of human intelligence in society or culture. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in cognitive development.

Vygotsky's theory is one of the foundations of constructivism. It asserts three major themes regarding social interaction, the more knowledgeable other (MKO), and the zone of proximal development (ZPD).



Piaget took a more constructivist view and focused on the individual, while Vygotsky used an active theory approach that focused on social interaction. Teachers can use effective instructional strategies, based on the developmental and cognitive psychology theories of Jean Piaget and Lev Vygotsky, to increase student achievement at the elementary level. But, before Piaget's and Vygotsky's theories can be implemented in classrooms, both administrators and teachers need to develop an understanding of the lives and theories of Jean Piaget and Lev Vygotsky.

Social interaction plays an important role in student learning. It is through social interaction that students learn from each other, as well as adults. Fogarty (1999) stated, "Vygotsky's theory suggests that we learn first through person-to-person interactions and then individually through an internalization process that leads to deep understanding". Vygotsky explored three different types of speech: social, private, and internal. He refers to social speech as the instructions given by adults to children. Private speech allows children to process what the adult has said and try to apply it to similar situations. For example, a teacher tells the class to keep their hands to themselves. Self-control is an example of private speech because children are using for themselves the same "language that adults use to regulate behavior" (Wilhelm). So, since their teacher has informed to keep their hands to themselves, the students do not hit or punch each other in class. Both teacher and students share the responsibility of developing students' private speech. Internal or inner speech takes place "as the student's silent, abbreviated dialogue that he/she carries on with self that is the essence of conscious mental activity" (Wilhelm, 2001). In the earlier example, these students must internalize the consequences of hitting another student, which could lead to a disciplinary referral. Thought is the result of social speech becoming private speech that has been internalized. "When the cultural signs become internalized, humans acquire the capacity for higher order thinking" (Huit, 2000).

There are fundamental differences between Piaget and Vygotsky. According to Piaget the individual is primary in the learning process, while Vygotsky believed that social life is primary in the learning process. Vygotsky stressed upon social interaction for constructing knowledge. As Dimitriadis and Kamberelis (2006) note, "Piaget grounded his developmental learning theory in the individual learner and positioned children as active, intelligent, creative constructors of their own knowledge structures". In contrast, Vygotsky's main construct of the Zone of Proximal Development (ZPD) learning "depends upon outside social forces as much as inner resources" (Palmer, 2001). Vygotsky believed that if students were not improving academically, their instruction was inappropriate. This belief contradicts Piaget's reasoning that the students may have "plateaued" in a specific developmental stage.

Developmental growth is another area of difference. Piaget's theory focuses on fixed stages of development, whereas Vygotsky's theory notes a more fluid, on-going repertoire of development. So how do administrators and teachers implement these theories in their schools and classrooms?



The Use of Vygotsky's Theory in Education

Ivic (1989), as cited by Daniels (2001), stated: School does not always teach systems of knowledge but in many cases overburdens its pupils with isolated and meaningless facts; school curricula do not incorporate tools and intellectual techniques, all too often schools do not provide a setting for social interaction conducive to knowledge construction.

Vygotsky's central topic was the Zone of Proximal Development (ZPD), which uses social interaction with more knowledgeable others to move development forward. A more capable person, such as teacher or peer, provides assistance to the student; the student is able to complete the task with this assistance. Students, who are in the ZPD, need active teaching. "It's a waste of time to teach kids what they already know and what they cannot do even with assistance" (Utah Education Network, 2005). Therefore, Vygotsky's theory promotes the belief, "What is learned must be taught" (Wilhelm, 2001). Teachers should be explaining, modeling, and using guided practice in the classroom. By modeling what they want their students to do, students will be better able to work through their assigned tasks. Think-alouds, an instructional strategy that allows students to talk through new steps of an endeavor aloud, can be used with upper elementary and middle school students, who are in the ZPD. This strategy assists students' thinking about how they make meaning. During think-alouds, students listen to a skilled reader using "strategies to comprehend text, and their teachers' thinking become visible to them" (Beers, 2003). Students need time to try out various strategies, so they can develop answers or responses. At the same time, teacher questioning techniques should guide the social interactions implicitly or explicitly. Think-alouds help teachers determine why and how students are experiencing difficulty in reading. In addition, students can analyze their own thinking about their reading.

When an administrator walks into a teacher's classroom using Vygotsky's theory to guide his or her instruction, he or she should see students engaged in scaffolding, small groups, cooperative learning, group problem-solving, cross age tutoring, assisted learning, and/or alternative assessment. Scaffolding is "a form of adult assistance that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (Wood et al., 1976, as cited by Daniels, 2001). The use of language and shared experience is essential to successfully implementing scaffolding as a learning tool. By practicing making inferences, students are able to determine what and when inferences needed to be made. Teachers need to provide students, who are in the ZPD, copies with specific sentences that have been underlined in a short story. The underlined sentences will help the students realize when they need to make inferences. As they read the story, they can pause and think about what type of inference they need to make. Thus, students are able to acquire and develop master of complex reading skills. "Scaffolding involves simplifying the learner's role rather than the task."



Vygotsky's model of teaching and learning has significantly influenced "early-literacy" programs, such as Reading Recovery and Guided Reading. Yet, this theory is in contradiction to what is happening in many schools today. Too many schools have teacher-centered classrooms. The teacher/information centered model (is)... learning centered on the information possessed by the teacher, which flows one way, from teacher to student (Wilhelm, 2001). To counter this prevalent view, Vygotsky maintains meaningful and productive collaborative activities that need to be engaged in by both students and teachers. Learning can occur through play, formal instruction, or work between a learner and a more experienced learner. Teachers must actively assist and promote the growth of their students, so the students can develop the skills they need to fully participate in our society.

In today's classrooms, teachers need to design lessons that empower students to "make meaning through mindful manipulation of input" (Fogarty, 1999). Thus, administrators need to provide teachers with the effective professional development and supplies they need to be effective. By successfully incorporating Piaget's and Vygotsky's theories into the classroom, developmental psychology in education can positively impact student achievement. "When our students have the cognitive foundation to learn how to learn, they can discover what else is "out there" in our world..." (Garner, 2008).

In order to apply the theories of Piaget and Vygotsky to present day school systems, one would need to restructure schools significantly. Administrators and teachers have to work together.

Conclusion:

By incorporating Piaget's and Vygotsky's theories into teaching strategies in classrooms, student learning is likely to increase. So, how do teachers use Piaget's and Vygotsky's theories in their instruction to improve student achievement? There are various ways for teachers to implement developmental psychology in the classrooms. Even though Piaget and Vygotsky hold different views concerning developmental psychology, the use of both theories in classrooms is advantageous. Piaget took a more constructivist view and focused on the individual, while Vygotsky used an active theory approach that focused on social interaction. Teachers can use effective instructional strategies, based on the developmental and cognitive psychology theories of Jean Piaget and Lev Vygotsky, to increase student achievement at the any level. But, before Piaget's and Vygotsky's theories can be implemented in classrooms, both administrators and teachers need to develop an understanding of the lives and theories of Jean Piaget and Lev Vygotsky.



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