



REVIEW OF TWO THEORIES OF LEARNING (PIAGETS COGNITIVE LEARNING THEORIES VS VYGOTSKYS SOCIAL CONSTRUCTIVISM)

¹Sagni Gemechu Negassa

¹Lecturer

¹Jimma College of Teachers Education

¹Department of Psychology

Abstract

Objectives: The *objective* of the paper is to compare piagets theory of learning with vygotsky's socio cultural learning theory. Both theories are the most contributors for the emergence of constructivist theory of learning.

Methodology: In this comparison, the backgrounds of both theories were analysed. Different ideas and theoretical stance of the two theories were reviewed. Stages of Piagets cognitive theory were identified and unique characteristics of each stages were analyzed. In the same manner vygotsky's social constructivism on its part were reviewed and its unique view points were seen.

Implication: Implication of cognitive constructivism and social constructivism were the other concern of the paper. In this case their similarities and differences were discussed.

Conclusion: Lastly, a conclusion was written down. In the conclusion part objectives of the review, similarities and differences of the concerned theories, as well as similarities and differences of the present paper with the previous review of the same issue were summarized.

Key words: piagets cognitive learning theory, vygotskys social constructivism

1. INTRODUCTION

Over the past century, educational psychologists and researchers have posited many theories to explain how individuals acquire, organize and deploy skills and knowledge. Although learning is defined by different psychologists (educators) differently, its usual and working definition is: 'Thus, learning is commonly defined as a relatively permanent change in behavior as a result of practice and experience'. However, how learning occurs is one of the controversies among educational psychologists. The process of learning new things is not always the same. Learning can happen in a wide variety of ways. To explain how and when learning occurs, a number of different psychological theories have been proposed. To state it in otherwise, Psychologists have tried to explain how people learn and why they learn. They have conducted many experiments on animals and children and come to certain definite conclusions which explain the modes of learning. According to Awwad (2013), man is born on this earth weak, incapable and helpless and through learning he be graded until he become able to face life's problems and his inability turns to innovate impossible things. There are different theories of learning whether they are classical or contemporary. They can be grouped as behaviourist. Cognitivist and constructivist based on their common characteristics and believe of their ways of learning. The present analysis focused on two theories of learning which are the piagets and vygotskys theories of learning. In that case the ideology of the two in addition to their similarities and difference and their educational implication are the main issues that were covered in the present comparisons and analysis.

1.1. Piagets cognitive theory of learning

Unlike behaviorists who understand learning as the result of the interactions between an organism and its environment or changes in responses, the cognitive approach focuses on the knowledge which guides those responses. Theory of cognitive development was first created by the Swiss developmental psychologist Jean Piaget (1896–1980). Peaget's theory of cognitive development is a comprehensive theory about the nature and development of human intelligence. The theory deals with the nature of knowledge itself and how humans gradually come to acquire, construct, and use it. Peaget's theory is mainly known as a developmental stage theory.

Cognitive learning theory focuses on what happens in the mind, and views learning as changes in the learner's cognitive structure (Kandarakis, 2008). Jean Piaget's work on children's cognitive development, specifically with quantitative concepts, has collected much attention within the field of education. He farther explored children's cognitive development to study his primary interest in genetic epistemology (Ojose, 2008). He states that one contribution of Piagetian theory concerns the developmental stages of children's cognition.

Piaget has identified four primary stages of development: sensorimotor, preoperational, concrete operational and formal operational (Ojose, 2013). The stages are sequential and follow an invariant sequence. This means that the child cannot skip or miss a stage or by - pass a stage. He must go through each stage in a regular sequence.

Moreover, according to piaget, children cannot overcome a developmental lag or speed up their movement from one stage to the next (Simatwa, 2010). Shrock cited in Fisseha, (2015), also asserts that there are four qualitatively distinguished stages of cognitive development by piagets are sensorymotor, preoperational, concrete operational, and formal operational.

Children with Sensor operational stage understand their world using their sense organs and at the later stage of this age they start developing the characteristics of object permanence (Joubish & khurram, 2011).The cognitive activity during this stage is based on immediate experience through the senses Meyer and Dusek, cited in Simatwa (2010). The major intellectual activity here is the interaction of the senses and the environment. In this stage they are called infancy, and they are likely to learn by using their five senses, object permanence, and actions that are goal-directed. Infants and children do not think the way adults do. As to the view of Piaget, in the sensorimotor stage, an infant's mental and cognitive attributes develop from birth until the appearance of language. This stage is characterized by the progressive acquisition of object permanence in which the child becomes able to find objects after they have been displaced, even if the objects have been taken out of his field of vision. For example, Piaget's experiments at this stage include hiding an object under a pillow to see if the baby finds the object (Ojose, 2013). Piaget believed that developing object permanence or object constancy, the understanding that objects continue to exist even when they cannot be seen, was an important element at this point of development (Simatwa, 2010).

The characteristics of pre operational stage include an increase in language ability, symbolic thought, egocentric perspective, and incapable of reasoning inductively or deductively, irreversible thinking because of incapability to perform mental operations (Joubish & khurram, 2011). They adds that the weak Characteristics of child in this stage is lack of logical thinking; rational thought makes little appearance links together unrelated events, sees objects as possessing life, does not understand point-of-view, and inability to reverse things. Moreover, Blake &Pope (2008) states that Children of this stage are able to do one-step logic problems, develop language, continue to be egocentric, and complete operations. They are however struggling with centering and conservation. Piaget argue that Children begin to think symbolically and learn to use words and pictures to represent objects, tend to be egocentric and struggle to see things from the perspective of others, while they are getting better with language and thinking, they still tend to think about things in very concrete terms (Ojose, 2013). They also often struggle with understanding the idea of constancy. For example, if one object is divided in to two equal parts and if one of them is rolled in to compact ball and the other in smashed in to flat, since the flat shape looks \larger, the preoperational child will likely choose that piece even though the two pieces are exactly the same size (Ojose, 2013).

Concrete Operational stage is the stage characterized by remarkable cognitive growth and it is a time when children become free from the problem of their pre-operational stage, development of language and acquisition of basic skills accelerate dramatically (Ojose, 2013). That means during this stage, children begin to think logically about concrete events and begin classifying and grouping of objects on the basis of their common characteristics.

However, Kids at this point in development tend to struggle with abstract and hypothetical concepts. This is really first reasoning stage. This means according to piaget the child is capable of thinking over actions, which previously he had overtly and is reversible. For example one of the characteristics developed during this stage is classifying things in various ways, grouping things into a class or sub-class, Doing one-to-one correspondence, Reversing thought process: $2 + 3 = 5$ and $5 - 2 = 3$ (Joubish & khurram, 2011).

At formal operational stage, the adolescent or young adult as asserted by Joubish & khurram, begins to think abstractly and reason about hypothetical problems. Teens begin to think more about moral, philosophical, ethical, social, and political issues that require theoretical and abstract reasoning and understanding and they begin to use deductive logic, or reasoning from a general principle to specific information (2011). According to them, in this stage, individuals move beyond concrete experiences and begin to think abstractly, reason logically and draw conclusions from the information available, as well as apply all these processes to hypothetical situations. Blake & Pope also argue that from age twelve to adulthood, children enter the formal operations stage, which allows them to think logically and show lingering egocentrism (2008).

1.2. Vygotsky's theory of learning

Vygotsky (1896-1934) is one of the Russian psychologists whose ideas have influenced the field of educational psychology and the field of education as whole. Socio-cultural theory has made a great impact on the learning and teaching profession. With in him, though biological factors constitute the necessary precondition for elementary processes to emerge, socio-cultural factors on their part play indispensable role for elementary natural processes to develop (Turuk, 2008). According to Vygotsky, although the biological factors constitute the necessary preconditions for the natural elementary processes to appear and develop, the socio-cultural factors are also important (Topçiu & Myftiu, 2015). Social interaction plays a fundamental role in the process of cognitive development (Jones & Araje, 2002). Vygotsky's theory of development proposes an interaction between the child's social world and his cognitive development. He places great emphasis on the culture in which the child develops, and in particular, on the effect of the constructive role of peer interactions and relationships. He believed the socio-cultural environment is critical for cognitive development (Blake & Pope, 2008). He proposed that development does not precede socialization, but rather social structures and social relations lead to the development of mental functions (Huitt cited in (Blake & Pope, 2008). According to Vygotsky, the sociocultural environment confronts children with a diverse set of task and questions. In early stages, the child is completely dependent on other people, especially on parents, who initiate his decisions while instructing him what to do, how to do it and what not to do. Initially these are realized through language, which plays a big role in the way the child adapts to the social inheritance (Lantolf cited in Topçiu, 2015).

The human mind is constructed through a subject's interactions with the world and is an attribute of the relationship

between subject and object (Verenikina, 2010). He adds that, the construction of human recognition is affected by bio-psycho-sociological factors. Social factor affects, facilitates, and accelerates the socio-cognitive development of the individual. The child's personality is also affected by these factors. Depending on its level of development, the role of the social environment is different and as a result, the modification of the mental structure is different in each child.

In this journey, the modification is reached when the child is active in this factor interaction (Topçiu & Myftiu, 2015). The focus of his work is the individual's interaction with society, the impact of social interaction, the language and the learning culture. He aimed to explain the role of dialogue in structuring recognition and viewed the origin of cognitive functions as a product of social interaction. The human learning means a specific social nature and a process through which children enter gradually in the intellectual life of people surrounding them. (Topçiu & Myftiu, 2015)

One of the important things developed by vygotsky is the concepts of cognitive learning zones. The Zone of Actual Development (ZAD) occurs when students can complete tasks on their own. In this zone, the students are independent and nothing is new for the students to learn. The other one is The Zone of Proximal Development (ZPD) which requires adults or peers to provide assistance to students, who cannot complete the assigned task without help. It is the gap between what learners are able to do independently, and what they may need help in accomplishing (Daniels cited in Blake & Pope, 2008). Instruction and learning occurs in the ZPD. When students are in this zone, they can be successful with instructional help.

1.3. Analysis of resemblance and differences of both theories of learning in educational implication

To start with, Piaget and Vygotsky are two influential developmental psychologists. Although their contribution to developmental psychology are different, they are similarly remarkable and unique (Lourenço, 2012). Lev Vygotsky (1896-1934) was a Russian psychologist who is considered as the father of social constructivist theory. He followed the work of John Piaget who is attributed as the roots of constructivist (Jones & Araje, 2002). Whereas Jean Piaget (1896–1980) was a Swiss developmental psychologist who focused on stages of child development and individual construction of knowledge, Jean Piaget's so-called biological perspective is often paired with the viewpoint of Lev Vygotsky when we speak of learning in humans. Piaget and most Western theories of development focus on the individual as the unit of study whereas Vygotsky focuses on the social nature of cognitive development, and emphasizes the critical part that the social world plays in facilitating children's development (Hoon, 1997). Piaget was criticized by vygotsky for not emphasizing social processes in development (DeVries, 2000). Piaget and Vygotsky are the first among others who contribute a lot to the development of constructivism thought and apply it to classes and students' learning and development in perspective of psychology. Piaget a Famous Switzerland psychologist is taken as the forerunner of modern constructivism. He thinks that all knowledge has the external origin and students' cognitive development is actualized naturally in the process of receiving

knowledge. Vygotsky was also an excellent Russian psychologist who founds the base for the formation of modern constructivism. According to his idea, learning is a social construction. Individual learning is under certain history and social background (Jia, 2014).

Both authors acknowledged the active role of children in the construction of knowledge. However, they differ in that, unlike Piaget, Vygotsky believed that the assimilation of new information does not have to wait for an appropriate level of development but must, on the contrary, produce that development through instruction; thus, cooperation between teacher and student promotes the development of higher psychological functions (Alves, 2014). The key ideas of Piaget's and Vygotsky's theory differ. Piaget believed that intelligence came from action. He held that children learn through interacting with their surroundings and that learning takes place after development. Alternatively, Vygotsky felt that learning happens before development can occur and that children learn because of history and symbolism (Slavin, 2003). Vygotsky also believed that children value input from their surroundings and from others. Piaget did not place importance on the input of others. Piaget and Vygotsky's theories on cognitive development also have differing opinions. Vygotsky's position that social factors are central in development is well known. Piaget, however, is often misunderstood as viewing the child as a lonely scientist apart from the social context (Santrock, 1997). The value piagets and vygotsky gives to language for its contribution in human development is the major difference between the two theories. As to vygotsky, the source of children's scientific concepts is words. Piaget emphasized that children often use the same words as adults but mean something quite different. Moreover, Piaget believe that understanding scientific concepts is a matter of progressive construction through stages where reasoning becomes increasingly more adequate and corresponds to what society considers correct. In this conception lies the possibility for going beyond society and constructing something new to society (DeVries, 2000). Piaget asserts that cognitive development from infant to young adult occurs in four universal and consecutive stages. Vygotsky on his part belief that, socio - cultural environment is critical for cognitive development and he proposed two concepts of cognitive learning zones _ the Zone of Actual Development (ZAD) and the Zone of Proximal Development (ZPD). (Mensah & Samuah, 2014). They add that even though Piaget and Vygotsky hold different views concerning developmental psychology, it is recommended that the use of both theories in classrooms is beneficial. That means, without considering Piaget and Vygotsky's difference on how they view cognitive development in children, both offer educators good suggestions on how to teach certain material in a developmentally appropriate manner. So, according to Mensah & Samuah, teachers should have a solid understanding of Piaget's and Vygotsky's theories, and students should be provided with more opportunities to play and learn with peers (2014).

According to vygotsky the etiology of learning in social interaction: a concept is first presented to a child socially (interpsychologically) either by parent peer or teacher, later to appear inside the child through the process of internalization. As educators we must strive to promote social interactions that are as conducive to learning as possible. As it is asserted by Topçiu the most know representative of the social-cognitive constructivist theory is Vygotsky. The focus of his work is the individual's interaction with society, the impact of social interaction, the

language and the learning culture Vygotsky aimed to explain the role of dialogue in structuring recognition and viewed the origin of cognitive functions as a product of social interaction (2015). Vygotskian theory built upon the Piagetian idea of the child as an active learner but with the emphasis on the role of social interaction in learning and development. However, Vygotsky emphasized that children and adults are both active agents in the process of the child's development and good learning occurs in the Zone of Proximal Development (Verenikina, 2010).

Eggen & Kauchak, Criticized Piaget's proposed theory as not offering a complete description of cognitive development. He is criticized for underestimating the abilities of young children. He has also been criticized for overestimating the abilities of older learners, having implications for both learners and teachers. Because, in this context middle school teachers by interpreting Piaget's work, may assume that their students can always think logically in the abstract, where it is not always the case (Ojose, 2008).

Generally, Both Piaget and Vygotsky thought learning is a process which leads to the development of higher order thinking. However, Piaget took a more constructivist view and focused on the individual, while Vygotsky used an active theory approach that focused on social interaction. So, to increase student achievement at the elementary level, teachers can use effective instructional strategies, based on the developmental and cognitive psychology theories of Jean Piaget and Lev Vygotsky (Blake & Pope, 2008). However, what teachers and administrators need to know According to Blake & Pope is before implemented theories of Piaget and Vygotsky in classrooms, they need to develop an understanding of the lives and theories of Jean Piaget and Lev Vygotsky.

Conclusion

The aim of this paper is to review and compare the piagets and vygotsky theory of learning. Its review was aimed because there are so many similarities although noticeable difference is there between the two theories. In addition to this, many people including scholars usually like to compare (pair) since they have many in common in addition to some differences between the two theories. To state some of them:

The two theorists were born in the same year (1896), both are cognitivist in theory, and they both acknowledge that it is the active role of the children that enables them to construct knowledge. They are considered constructivist perspective in which learners are believed the makers of meaning and knowledge. According to their believe children learn increasingly complex information and skills as they get older. They emphasis on both nature and nurture and they signify that children's cognitive abilities develop in a sequence and particular abilities develop at certain stages.

On the contrary way, both theories are also known by having some noticeable differences. According to piaget, cognitive development is deriven children's inbuilt tendency to adapt to new experiences whereas for vygotsky cognitive development is deriven by social interaction. Active discovery is methods of learning for piaget and it is through interaction and guidance for vygotsky. Cognitive development universally applies as to piagets view point

but cognitive development is different across culture and time for vygotsky. According to cognitive learning theory of piaget, childrens learn only when they are ready. However, corrective scaffolding within the ZPD is what can accelerate development as to vygotsky's theory of learning. In addition to this piaget consider language as the result of cognitive development whereas language is key (tool) for cognitive development as it is asserted by vygotsky.

The present review also shares these resemblances and differences commonly with the previous researchers in addition to the unique approaches of this analysis that differs from others. That is, this paper presents the analysis of the two theories in different section (especially their back ground of the two) except the analysis of their educational implication which is done for the purpose of comparing and contrasting them since that section is the key (objective) for this paper as well. Moreover, this paper is also provides conclusion of the analysis by summarizing the objective of the present study. This paper also provided by presenting why people and scholars usually like to pair the two theories and what distinguishes this analysis from the previous study.

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