COMPARATIVE ANALYSIS OF PIAGETIAN & VYGOTSKIAN LEARNING PROCESS THEORIES

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Abstract

This research aims to examine the educational ideas proposed by internationally acclaimed researchers Piaget and Vygotsky in order to elucidate the processes of learning. Educational theories are conceptual frameworks that aim to elucidate the essence of education as a crucial instrument for guiding and elucidating various elements and concepts to individuals. The Greek philosophers initially formulated educational theories to tackle the domains of learning, educational policies, and leadership. The philosophers aimed to provide a comprehensive framework for formulating explanatory models in order to establish a knowledge base that could be utilised for theoretical analysis and practical application in educational thinking. Educational thought, a crucial element in educational learning theories, encompasses theories from various disciplines including sociology, philosophy, analytical thinking, & psychology.

Keywords: *Constructivism, Cognitive Development, Behavioural Development, Educational Theory, Learning Process, Jean Piaget, Lev Vygotsky*

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INTRODUCTION

Many educationists considered the development of educational theories to be a crucial milestone, since it allowed them to ascertain the cognitive functions of individuals throughout the learning procedure. The educational theories of Jean Piaget & Lev Semionovich Vygotsky aimed to elucidate the psychological mechanisms underlying human learning. In accordance to the two authors, cognitive maturation in educational concepts aimed to elucidate how teachers utilised children's cognitive processes to devise learning programmes that would cater to their educational requirements.[1] Piaget's educational philosophy is based on the fundamental concept that intelligence is derived from the activities individuals take when they interact with their environment.

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[1] Thomas, G., (2007). Education and theory: strangers in paradigms. New York: Open University Press

Vygotsky, on the other hand, formulated his educational theory by emphasising that the learning procedure occurs through a sequence of reflexes that are then transformed into instructional ideas. He based his thesis on the assumption that all human behaviour stems from responses to stimuli originating from the external world.

Vygotsky considered private speech patterns to be beneficial strategies for children to internalise and comprehend educational information. He also emphasised the importance of the area of proximal development, which enables teachers to assess a child's current and potential learning capabilities.[2] This discussion will provide further insight into the educational theories of Piaget and Vygotsky.

KEY CONCEPTS OF PIAGET'S THEORY

Piaget's fascination in knowledge and education led him to formulate the theory of cognitive development, which delineated the distinct phases of learning that occur in human beings. He formulated the notion by closely monitoring children and analysing their cognitive processes throughout educational activities. Piaget employed standardised inquiries to ascertain the nature of children's responses to these queries, so enabling him to discern their cognitive functions and thought patterns.

His primary focus was on analysing the reasoning & logic employed to reach an answer, rather than simply assessing whether the students had answered the questions correctly or not. Piaget concluded that brain development often occurs as a result of the interactions between genetic and environmental elements during the learning process. Piaget's analysis led to the formulation of the four-stage theory of intellectual development, which serves to elucidate the processes of education and learning in humans.

Oakley asserts that Piaget's educational theory begins with the sensorimotor stage, which focuses on how children utilise their sensory and motor abilities to cultivate their cognitive faculties during the process of learning. The intelligence of these children is typically evident when they participate in activities that involve motor skills, such as walking, or sensory skills, such as touching.[3] During the sensorimotor stage, children acquire knowledge by participating in physical tasks that necessitate the use of their sensory motor abilities.

Piaget formulated this stage by empirical observation of the cognitive maturation of preverbal children aged zero to two years, who exhibited limited communication abilities and primarily depended on their perceptual and motor faculties to acquire knowledge of their immediate surroundings. Nevertheless, once the newborns reached a more mature stage, they were capable of developing some linguistic abilities that resulted in the understanding of object permanence.

In Piaget's hypothesis, the preoperational stage focused on the utilisation of symbols by children to acquire knowledge about different educational ideas. Based on his findings, Piaget concluded that children employ symbols and symbolism based on their views of the world. They hold the belief that others think in the same way they do, planning their actions accordingly.

Throughout the preoperative stage, children's memory and spoken language skills undergo development, allowing them to effectively communicate and remember knowledge. The third phase of the theory, referred to as the concrete operational stage, focuses on the significant cognitive and mental transformations that occur in children between the ages of seven and eleven.

This stage, as described by Piaget, represents the incorporation of logical reasoning into children's cognitive processes, allowing them to actively engage in thinking and problem-solving activities during their learning experiences. Children's capacity for cognitive reversibility was also seen throughout the tangible operational phase. The last phase of Piaget's education theory included the formalised operational stage, which focused on how adults acquire proficiency in abstract thinking and employ symbolism in hypothetical scenarios.

This stage was primarily designed to address complex circumstances that necessitated the application of advanced thinking processes in order to reach an appropriate solution. However, critics challenged Piaget's educational theory by arguing that only 35% of individuals were capable of achieving formalised operational thinking.

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[2] Shaffer, D.R., & Kipp, K., (2010). Developmental psychology: childhood and adolescence. Belmont, California: Wadsworth
[3] Oakley, L., (2004). Cognitive development. New York: Routledge

KEY CONCEPTS OF VYGOTSKY'S THEORY

Vygotsky's educational approach was primarily based on the concept of private speech, which involves individuals engaging in self-talk to enhance their cognitive and behavioural processes. Vygotsky employed the utilisation of private speech, particularly in instructing young children, as it facilitated their cognitive processing and the formulation of a solution to effectively address a given situation.

He regarded the utilisation of private discourse as a crucial element in advancing proximal development, which constituted the second component of his educational model. According to Vygotsky, proximal development refers to the level of development that is just above a person's current cognitive level. Children who are inside the proximal level of development are unable to independently carry out cognitive activities.

As stated by Kozulin, Vygotsky suggested that children who were instructed within their proximal area of growth would attain optimal learning outcomes. This approach involves utilising scaffolding techniques to offer support and guidance throughout the learning procedure. Vygotsky's notion of scaffolding entails the utilisation of prompts and cues from teachers to enable youngsters to independently construct their comprehension of the different concepts introduced by their instructors.[4]

The implementation of scaffolding was intended to facilitate the teacher's collaboration with the student during classroom activities, offering them clarifications to inquiries and rectifying any errors made by the student. The primary concept underlying Vygotsky's theory is the zone of proximal development, which establishes the specific levels of a child's development during learning and their prospective development based on their problem-solving abilities.

COMPARISONS AND CONTRASTS

The educational theories of Piaget and Vygotsky are both based on constructivism, an approach to learning and teaching that focuses on cognitive processes arising from mental construction. Constructivism is a cognitive process in which individuals connect new information with their previous knowledge, allowing them to mentally create new knowledge based on what they already know.

Constructivist thinkers assert that learning is contingent upon the context or environment in which the concept is being imparted. Constructivism encompasses the beliefs & attitudes that students hold regarding their education, as well as the learning tactics employed by their teachers to convey information. Piaget & Vygotsky, both shared the view that the educational system is influenced by the limitations of cognitive development within an individual's society.

According to their views, human cognitive growth was primarily influenced by the specific social factors present in their immediate contexts. Piaget and Vygotsky both believed that an individual's cognitive development is influenced by society.[5] This notion allowed them to build educational theories that take into account the numerous social effects in the learning processes.

Both ideas shared the perspective that the internalisation of information is a transforming process, rather than a mere replication of external knowledge.

Piaget's stage theory delineated the various cognitive frameworks employed to internalise knowledge and facilitate intellectual growth, whereas Vygotsky utilised the process of internalisation through the proximal development phase to make certain the attainment of both actual and potential levels of knowledge during the learning process.

The two theories also had similarities in terms of the psychological development of individuals when they perceived educational material as a crucial component of the transformative process.

DeVries highlights a key distinction between Piaget's and Vygotsky's ideas, which lies in the foundational concept that shaped their theoretical frameworks. Piaget formulated his educational philosophy based on the premise that human intelligence primarily stems from actions. He formulated his educational approach on the

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[4] Kozulin, A., (2003). Vygotsky's educational theory in cultural context. Cambridge: Cambridge University Press

[5] Davis, B., & Sumara, D., (2002). Constructivist discourses and the field of education: problems and possibilities. Educational Theory. 52(4): 409-428

premise that individuals, especially children, possess the capacity to acquire knowledge by active engagement with their immediate surroundings, hence facilitating their cognitive development.

In contrast, Vygotsky maintained the notion that learning transpired prior to any cognitive advancement in children. His educational philosophy was founded on the premise that human learning is influenced by historical and symbolic factors, as individuals assign significance to different aspects of their environment and their relationships with others.

While Piaget's educational theory consisted of four discrete phases, Vygotsky's educational theory, in contrast, did not have clearly defined stages. The communication of the core principles of the theory relied on the utilisation of private discourse and the area of proximal development.

Another distinction across the 2 theories is in the variation of stimuli utilised during the learning process. Piaget believed that stimuli would only be useful in facilitating learning if the subject actively engaged with them. Vygotsky emphasised the significance of the stimuli's content in eliciting specific responses from the individual.

The nature of knowledge and the psychological instruments employed to elucidate the two theories diverged. Vygotsky, in particular, placed significant emphasis on the cultivation of content through the utilisation of psychological instruments and the cognitive faculties of an individual during the process of learning.

Piaget's theory centred on the creation of structures, with an emphasis on the utilisation of proto-logical frameworks, collaborative interaction among peers, and turn-taking to elicit specific patterns of behaviours from subjects over the learning process.

According to Piaget's educational theory, the participant's role was primarily perceived as competent and aligned with the teacher or guide's expectations. The participant's cognitive development was linked to the framework of the interaction. Vygotsky's utilisation of psychological instruments diverged from Piaget's approach, as Vygotsky viewed these instruments as cultural symbols rather than as structural adjustments.

The concept of self-regulation also presented a distinct distinction between the two ideologies. Vygotsky posited that self-regulation is a behavioural phenomenon that arises in individuals through the regulation of certain learning tasks.[6]

Vygotsky believed that self-regulation is a skill that individuals acquire when they engage in the learning process, leading to the development of their behavioural and cognitive capacities. Pursuant to the proximal development theory, self-regulation in learning is achieved by external elements including timetables, time schedules, and timers. These tools help individuals regulate their learning behaviour.

In Piaget's perspective, self-regulation was primarily a cognitive function rather than a behavioural one. He believed that it emerged in infancy and continued to develop throughout a child's formative years. Piaget believed that children might develop self-regulation by following rules and norms, which would help them control their behaviour and enhance their learning capabilities.

Another distinction between Piaget and Vygotsky's theories is their differing perspectives on novelty, with each thinker holding distinct views and opinions on the concept. Piaget posited that novelty in education manifested through the introduction of new content and the modification of cognitive adaptations that children employ to boost their learning capacities.

Vygotsky's alternative perspective on novelty in education posited that it manifested as conditioned reactions, which emerged from unconditioned responses to specific educational inquiries. Piaget viewed the creation of knowledge as an internal process in early children, allowing them to regulate the introduction of new information. Vygotsky believed that the development of knowledge and skills in children is influenced by the external elements present in their learning environment.

SUBJECTIVE ASSERTIONS AND OPPOSING VIEWPOINTS

When examining Vygotsky's educational theory, it becomes apparent that he aligns closer with the constructivism perspective, as his interpretation of the learning processes also encompasses behavioural

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[6] DeVries, R., (2000). Vygotsky, Piaget, and education: a reciprocal assimilation of theories and educational practices. New ideas in Psychology, 18(2): 187-213

processes. In his 1926 book on Pedagogical psychology, Vygotsky proposed the concept that students functioned as a responsive mechanism during the learning process.[7] This theory was interpreted by many behavioural researchers as Vygotsky's explanation of human behaviour, which primarily consists of a sequence of reflexive responses.

In 1930, Vygotsky continued to employ the concept of conditioned reflex as a psychological instrument to elucidate the process of learning and education, therefore strengthening the behavioural component of his theory.   He argued that all human behaviour was triggered by responses to external stimuli originating from the immediate surroundings.

Although many academics have classified Vygotsky's educational theory, along with Piaget's, as constructivism, it is important to note that Vygotsky's incorporation of behavioural mechanisms in humans suggests a more nuanced perspective. It becomes evident that his theory aligns with both the concept of constructivism as well as cognitive theories of behaviour.

In elaborating on this assertion, he grounded the essence of stimuli in the educational model on their correlation with social forces predominantly governed by behavioural laws. Vygotsky argued that individuals must internally regulate their behavioural processes in order to exert control over stimuli, hence enabling them to extract valuable information from the learning process.

Although Piaget's theory of cognitive development is widely regarded as a theory of mental constructivism, Vygotsky's research did not definitively establish whether Vygotsky can be classified as a constructivism theorist.   This is mostly due to his emphasis on the cognitive and behavioural growth of children, namely by emphasising on their area of proximal maturation rather than the several phases of educational development required for children to acquire educational ideas.

Wertsch, Vasliner & Bedrova among other researchers, classified Vygotsky as a constructivist due to the alignment of his comments on knowledge acquisition with constructivist principles.

For instance, Vygotsky posited that individuals often acquire new cultural experiences through their area of proximal development and external environmental factors.

This perspective can be classified as constructivist, as the subject's accumulation of cultural experiences allows them to adopt different behaviours that align their mental development with external circumstances.

Piaget's theory was categorised as entirely constructivist due to its emphasis on essential developmental stages that are crucial for a child's learning process.

CONCLUDING REMARKS

This debate has focused on the educational theories of Piaget and Vygotsky. Every theory has been analysed separately to identify the conceptual notions employed by these two theorists in the development of their theories.   The discussion aimed to ascertain the presence of any parallels and variations across the two theories. It was found that Piaget's four-stage educational theory shared several similarities with Vygotsky's educational theory, which primarily emphasised proximal advancement and private discourse.[8]

The research also examined the disparities between the two theories, revealing that each theory employs distinct psychological devices and stimuli to optimise the learning process in individuals.

Despite Vygotsky being labelled as a constructivist theorist, his educational theory has generated several arguments from proponents of both behavioural and constructivist approaches. This study has uncovered that Vygotsky's educational theory employs behavioural reflexes to respond to environmental stimuli during the learning process, which is characterised as constructivist.

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[7] Lytle, D.E., (2003). Play and educational theory and practice. New York: Greenwood Publishing Group
[8] Joshi, I.D. (2023) *Behavioural Analysis Using Linguistics: Perspectives On Social Cognition & Operant Conditioning*, *Indian Journal of Law and Legal Research*. Available at: https://www.ijllr.com/post/behavioural-analysis-using-linguistics-perspectives-on-social-cognition-operant-conditioning.