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THE CONCEPT OF LEARNING FROM THE PERSPECTIVE OF PIAGET AND VYGOTSKY: CONVERGENCES AND DIFFERENCES BETWEEN THE AUTHORS

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Abstract: The purpose of this study is to present the concept of learning from the perspective of psychologists Jean Piaget and Lev Vygotsky, as well as to identify the similarities and differences between the authors in relation to the concept. In this sense, the main objective is to understand the meaning of learning according to the authors. It is necessary to describe the biography of psychologists, understanding the bases of who Jean Piaget and Lev Vygotsky were. Furthermore, describe and understand constructivist (Piaget) and sociointeractionist (Vygotsky) theories. Perceive how the learning development process takes place in the individual according to each of the theorists. Finally, describe and relate the divergences and convergences of the learning concept between the two authors. As a theoretical framework, the following authors were used: Piaget, (2016); Vygotsky (1984; 2001); Rego (1995); From Bona & Drey (2013); La Taylle, Oliveira & Dantas (2016); in addition to other sources such as articles, dissertations and theses that deal with the object of this study. Using the methodology of imprint qualitative of type bibliographical research, which according to Gil (2021) is based on already published material, including books, magazines, newspapers, theses and dissertations based on a exploratory and descriptive perspective, of a qualitative/documentary.

Keywords: Learning. Piaget. Vygotsky.

INTRODUCTION

What comes to learning? How does the individual learn?

Studies on learning are varied and broad, they are presented in different theories formulated about human knowledge, called epistemological currents. These currents seek to explain how the individual learns and develops throughout life. Among the most varied theories, the Constructivist Theory of

Jean Piaget and the Sociointeractionist Theory of Lev Vygotsky will be presented.

So, this work aims to understand what learning is and how it takes place, from the perspective of the theories of psychologists Jean Piaget and Lev Vygotsky, considered scholars of this concept, in addition to identifying the similarities and differences between the authors in relation to the term.

In the second topic, a brief biography of the authors will be presented; the following topic will describe the concept of learning according to the theories of the authors, and subsequently the following topic will present the divergences and convergences of the learning process according to the authors.

As a theoretical reference, the following authors will be used: Piaget, (2016); Vygotsky (1984; 2001); Rego (1995); From Bona & Drey (2013); among others. In addition to sources such as articles, monographs, theses and dissertations that deal with the object of study. Using a qualitative research methodology of the bibliographical research type, which according to Gil (2021) is based on already published material, including books, magazines, newspapers, theses, dissertations and annals of scientific events. For, “[...] all academic research requires at some point to carry out work that can be characterized as bibliographical research” (GIL, 2021, p.28).

WHO ARE THEY....

JEAN WILLIAM FRITZ PIAGET (1896-1980)

Jean William Fritz Piaget was born in 1896 in Neuchatel, Switzerland. Her father was a professor of Roman language and literature at the Academy of Neuchatel. From an early age, Piaget showed an interest in natural history. At the age of eleven, he published an article in a regional magazine in which he presented a classification of the different types of fresh and salt water molluscs. In 1918, he obtained

his doctorate in natural sciences and left that same year for Zurich to study experimental psychology, where, during this period, he participated in classes taught by psychologist Carl Jung. In 1919 in Paris, he studied Psychology, Logic and History of Science, where he lived with renowned philosophers, psychiatrists and psychologists of the time. In the same period he elaborated a theory of knowledge and became involved in Binet's Psychology Laboratory, where he began his studies of the levels of class logic in children. In 1921, he published his first observations on the characteristics of children's thinking in the *Journal of Psychology* called "Essay on Some Aspects of the Development of Children's Thought". That same year, he returned to Geneva, becoming Claparède's collaborator at the Jean-Jacques Rousseau Institute, at the University of Geneva. In 1923, he married Valentine Châtenay, with whom he had three daughters. In the same year, he published the work "A Linguagem e o Pensamento da Criança". In 1924 he publishes "The Judgment and Reasoning of the Child". And in 1936 he receives the title of "Doctor Honoris Causa" from Harvard University.

He taught at several universities in Europe, including the University of Sorbonne, in Paris, where he held the Chair of Child Psychology from 1952 to 1963. He founded the International Center for Genetic Epistemology in Geneva, where he carried out research with an interdisciplinary team. Between 1957 and 1973 he published the work "Estudos da Epistemologia Genética". Jean Piaget wrote approximately around 100 books and over 500 scientific articles. He was considered the "father of modern child psychology", where his educational method served as a model for several schools in much of the world. He died at the age of 84 in Geneva, Switzerland, on September 16, 1980.

LEV SEMIONOVICH VYGOTSKY (1896-1934)

Lev Vygotsky was born on November 17, 1896 in Orsha, a small province in Belarus. Son of a family of Jewish origin, his father was a cultured man who worked in an insurance company and his mother was a trained teacher. Vygotsky married Rosa Smekhova at the age of 28, with whom he had two daughters.

From a very early age, he showed interest and dedication to studies and a thirst for knowledge. He liked everything from literature to the arts in general. He learned several languages such as Latin, German, Hebrew, French and English, which facilitated his access to materials from different sources. He finished high school at the age of 17 and in 1914 entered Moscow University, where he studied law and literature until 1917. His desire to understand the psychological development of human beings led him to take courses at the Faculty of Medicine in Moscow and Kharkov.

According to Rego,

[...] his academic path was marked by interdisciplinarity as he moved through various subjects, from arts, literature, linguistics, anthropology, culture, social sciences, psychology, philosophy and, later, even medicine. The same happened with his professional performance, which was eclectic and intense and was always associated with intellectual work (REGO, 1995, p. 22).

Vygotsky began his professional career in the city of Gomel at the age of 21 writing literary reviews. He taught and lectured at various institutions on subjects related to literature, science, and psychology. He was also interested in pedagogy. While still in Gomel, he created a publishing house, a literary magazine and a psychology laboratory at the Teacher Training Institute, where he taught psychology courses.

But the milestone of his intellectual career came in 1924, when he dedicated himself to

the area of psychology. According to Rego (1995), in 1928 he gave a lecture at the II Congress of Psychology in Leningrad, where he brilliantly addressed revolutionary ideas on the study of human conscious behavior, causing astonishment and admiration for the complexity of the topic addressed. He was invited to work at the Moscow Institute of Psychology. Later, he founded the Institute for the Study of Disabilities in Moscow, which investigated studies on the development of physically and mentally handicapped children.

In 1920, he was diagnosed with tuberculosis, a disease with which he lived for fourteen years. Even though he was ill, Vygotsky did not stop his studies and investigations, quite the contrary, as Rego (1995) “demonstrated an exceptional pace of intellectual production. He continued writing, reading, teaching and developing important investigations”.

This great intellectual undertaking had the participation of talented researchers, among them Alexander Romanovich Luria (1902-1977) and Alexei Nikolaievich Leontiev (1904-1979), Vygotsky’s main collaborators and who accompanied him until his death, a decade later. (REGO, 1995, p. 29).

He wrote important works such as, the principles of social education for deaf-mute children (1925); Studies on the history of behavior (in partnership with Luria) (1930); The history of the development of higher psychological functions ((1931); Lessons in psychology (1932); Thought and Language (1934); mental development of the child during education (1935);

Vygotsky wrote on a relevant range of subjects over the last ten years of his professional life.

Vygotsky’s life ended on June 11, 1934, when he died at the age of 38 in Moscow, a victim of tuberculosis. He had a brief but intense life in terms of his studies and the legacy he left behind.

THE CONCEPT OF LEARNING FROM THE PERSPECTIVE OF PIAGET AND VYGOTSKY

The epistemological current called Constructivism, based on Piaget’s studies, states that knowledge is acquired by subjects through an active and mental process of development, being the result of combinations between the hereditary load and the experiences lived and obtained through the environment. According to Piaget, the child goes through cognitive stages to acquire and build knowledge. These stages range from birth to adolescence. But this learning does not happen passively, it is up to the teacher to mediate and create ways that allow the conflict, thus achieving the student’s individual cognitive improvement and the development of thought structures. According to Becker (2009), Piaget will clarify that man, despite having a huge hereditary baggage, cannot issue a simple thought operation. Soon, it is noticed that the social environment cannot teach the child the simplest knowledge. Therefore, the human being, as well as the object, are processes to be constructed. These form and construct each other reciprocally in interaction.

According to Piaget, learning occurs through interaction (actions that transform each other, according to certain laws of organization). This way, interactions are behaviors that change, and these behaviors admit two types of interactions that transform them from the outside and are inseparable from each other: the interaction between the subject and objects and the interaction between the subject and other subjects. And it is in this relation that both (subject and object) are modified at the same time, because assimilation occurs, a term that consists of the incorporation of a new element to the already existing ideas of one another.

According to Neves & Damiani (2006)

The central idea of Piaget's theory is that knowledge does not proceed either from the unique experience of objects, or from a broad innate programming, pre-formed in the subject, - although his theory is based on the existence of some innate elements - but of successive constructions with constant elaborations of another, but they are solidary, forming a unique whole. (NEVES; DAMIANI, 2006, p. 5)

In addition to interaction, accommodation also occurs, another term designated by Piaget, which consists of modifying previously established schemes in order to deal with new information. In the relationship between these two previous processes, equilibrium is generated, as shown in the table below.

This process takes place in all human collective work, as each interaction creates new characteristics that transform the individual's mental structure.

Piaget will still talk about the role of cooperation in the development of awareness and its relationship with interaction.

According to De Bona & Drey (2013) in the individual's cognitive evolution, there are successive levels of logical structuring or practical intelligence, each of which is characterized by a certain type of cooperation or social interaction. Therefore, collaboration and cooperation are different terms. In cooperation, all individuals have the same objective and act coincidentally, while in collaboration, each individual collaborates in some way, having or not having the same objective. Thus, to cooperate for Piaget is to operate in common through new actions performed by each of the individuals with the same ends, while to collaborate is to add something new separately by the partners, having or not the same objectives. According to Piaget

“... to cooperate in action is to operate in common, that is, to adjust through new operations (qualitative or metric) of correspondences, reciprocity or

complementarity, the operations performed by each of the partners” (PIAGET, 1973, p. 105 apud DE BONA; DREY, 2013, p. 3).

“... collaborating, however, boils down to the gathering of actions that are carried out separately by the partners, even when they do so in the direction of a goal” (PIAGET, 1973, p. 81 apud DE BONA; DREY, 2013, p. 3).

Therefore, it is clear that for there to be cooperation, the collaboration of both subjects is necessary. Thus, “...it can be concluded that cooperation is the set of interactions between individuals who wish to achieve the same goal” (De Bona & Drey, 2013). Where each subject has its own form of interpretation, in which the truth stems from the coordination between different points of view.

Thus, learning according to Piaget is to adapt to the new through the processes of assimilation and accommodation.

LEARNING IN VYGOTSKY'S CONCEPTION

The psychologist Lev Vygotsky, considered one of the greatest psychologists of the 20th century, carried out several studies in the field of learning development and stated that social relations and living conditions play an important role in this process, thus originating the pedagogical current called socio-constructivism or socio-interactionism.

The psychologist's studies are processed around the understanding of the subject as a being that is formed through the environment and social contact, in a dialectical relationship between the subject and society, where the subject modifies the environment and the environment modifies the subject. In Vygotsky's theory, what matters is the relationship that the subject establishes with the environment.

Vygotsky (2001) states in his studies that the student's cognitive development takes place

ASSIMILATION	+	ACCOMMODATION	=	EQUILIBRATION
Incorporation of a new element to existing ideas.		Modifica2tion of previously established schemas to deal with new information.		Result of the relationship between the two previous processes.

Table 1: Interaction according to Piaget

Source: prepared by the author

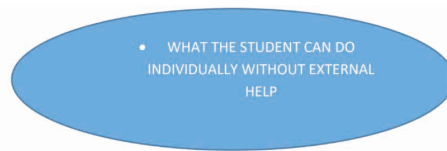


Figure 2: The Real Development Zone

Source: elaborated by the author (2022)



Figure 3: The Potential Development Zone

Source: elaborated by the author (2022)

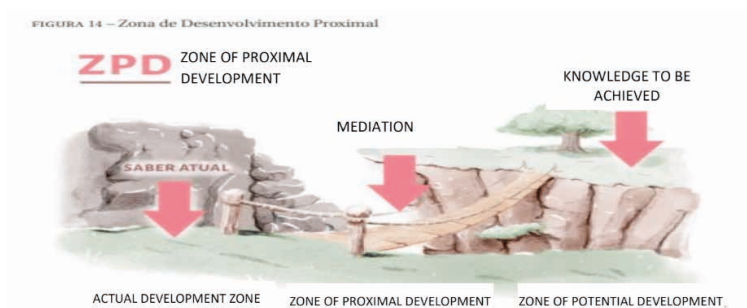


Figure 4: The Potential Development Zone

Source: google (2022)

	PIAGET	VYGOTSKY
Knowledge	It is a process of interaction between the subject and the physical environment.	It is a process of interaction between the subject and the culturally social environment.
Human being	It is a biological individual.	He is a social individual.
Development	There is a process of socialization.	There is a process of social differentiation.
cognitive potential	It depends on the stage of development the subject is at.	It depends on the quality of the social interaction and the ZPD.
Role of internal and external factors in development	Maturation Biological.	Environment.
Real construction process	From the individual to the social (it's spontaneous).	From the social to the individual 1st Interpersonal 2nd Internalization
role of learning	1st Development 2nd Apprenticeship	1st Apprenticeship 2nd Development

Chart 2: The relationship between theorists Piaget and Vygotsky

Source: @japassei. educação

through his contact with the environment and with others, and that learning is a social experience mediated by communication between language and action. For him, the child starts learning before going to school, but it is at school through social relationships that this learning will include new learning in his development.

Quoting Vygotsky, De Bona & Drey (2013) state that "...development is characterized by a complex dialogic process". This dialogic process is constituted between the subject and society, in a social interaction permeated by language, particularly by signs (instruments). This way, learning, when properly organized, generates development, reorganizing and modifying thinking.

For Vygotsky, the thought process takes place through the subject's relationship with other subjects and with the world, always mediated by the language that stands out in this process.

In order to better understand the means by which knowledge is formed, it is necessary to understand how the subject moves from simple learning to superior learning, which Vygotsky calls Higher Psychological Functions.

Quoting Vygotsky, Rego (1995) describes two levels of development: one called the level of real development, which refers to the functions and capabilities that the child has already learned and mastered, already performs alone without the assistance of more experienced others, thus causing the mental processes that have already been instituted; and another level, the level of potential development, which is characterized as the one in which the child manages to do something with the help of more experienced others. The space between these two levels of development, Vygotsky conceptualized as "zone of potential or proximal development" (ZPD) where it is defined as the functions that have not yet matured in the child. As shown

below.

For example, the ZPD is like the path that has not yet materialized, where it takes the child from the point where he performs the activities without external help to the point where he performs the activity with the help of others. Thus, Rego (1995) states that "...the adequate knowledge of individual development involves considering both the actual level of development and the potential".

Vygotsky (1984) states that

"...what is the zone of proximal development today will be the real developmental level tomorrow – that is, what a child can do with assistance today, he will be able to do on his own tomorrow". (VYGOTSKY, 1984, p.98 apud REGO, 1995, p. 74).

Therefore, the concept of ZPD created by Vygotsky is fundamental for the educational plan as well as for research on child development, as it allows understanding the internal process of the child's individual development.

CONVERGENCES AND DIVERGENCES BETWEEN AUTHORS ABOUT LEARNING

According to Castorina (1990), Piaget's and Vygotsky's theories are two antagonistic versions of intellectual development and learning processes. The author recognizes that both theories present some compatibilities, but he is emphatic in stating that the differences are more significant than the similarities. Chart 2 presents a brief relationship between some terms used by the authors in their theories.

CONVERGENCES

Castorina (1990) describes the perceived convergences between theorists and presents them as follows:

Piaget insisted on the constitution of structural systems as the key to the development

of intelligence (weak structuralism); just as knowledge systems in Piaget can be studied only in their formation process;

Vygotsky advocated an interrelated, non-reductive study of psychological functions and processes (weak structuralism); shared genetic focus insofar as the psychological functions in Vygotsky can also be studied only in his formation process;

Both emphasized the subject's activity in acquiring knowledge and the quantitative nature of developmental changes.

DIVERGENCES

Castorina (1990) is emphatic in stating that the differences between the authors are much broader, presenting them as follows:

For Piaget, cognitive development is interpreted from the experience with the physical environment, leaving social interaction and the linguistic instrument in a subordinate place. For Vygotsky, social interaction and the linguistic instrument are decisive to understand cognitive development.

The process of intellectual development explained by Piaget through the balancing mechanism of actions on the world, precedes and places limits on learning (without the latter being able to influence the former). Contrary to Vygotsky, learning interacts with development, producing its opening in zones of proximal development, in which social interactions and the sociocultural context are central.

Piaget's theory is presented as a version of cognitive development in terms of a process of construction of logical structures, explained by endogenous mechanisms, and for which external social intervention can only be a facilitator or an obstacle. It is a universalist and individualist theory of development. Vygotsky's theory, on the other hand, appears as a historical-social theory of development that proposes a view of the formation of

higher psychic functions as a mediated internalization of culture.

Piaget offers an active but abstract subject that makes learning a derivative of development itself. Vygotsky, on the other hand, proposes a social subject that is not only active, but above all interactive.

According to Piaget, education is seen as a challenge, this way, students are able to acquire scientific notions not explained in the learning materials, through their exploration and research activities. According to Vygotsky, development processes are independent of learning, that is, they are a precondition for the realization of learning, but are not altered by it. The learning process is centered on the internalization of cultural instruments, allowing the child to advance towards conceptual systems. The admission of the ZPD implies accepting a control of development through learning, regarding the power that school knowledge exerts on acquisition.

On the formation of scientific concepts: for Vygotsky, cultural forms are internalized throughout the development of individuals and constitute the symbolic material that permeates their relationship with objects of knowledge. The word functions first in its role as a medium and then as a concept symbol.

FINAL CONSIDERATIONS

The present work aimed to understand what learning is and how it happens according to the constructivist and sociointeractionist theories of psychologists Jean Piaget and Lev Vygotsky and describe the similarities and differences of the term between the authors.

In the second topic, a brief biography of the authors was explained, describing the most important works and studies. In the subsequent topic, the concept of learning according to the theories of the authors was highlighted. Finally, the similarities and

differences between the authors of how the learning development process takes place were presented. Some similarities were presented, such as the emphasis that the two gave to activity of the individual in acquiring knowledge, as well as the quantitative character of changes in development. But it was noticed that the differences between the concepts of the authors are broader.

Rego (1995) states that Vygotsky came into contact with Piaget's studies in the 1920s. He read Piaget's studies with interest, as well as writing the foreword to the Russian edition of the Swiss psychologist's books "The child's language and thinking" and "The child's reasoning". During this period he made considerable criticism of the theses defended by Piaget. Despite differing from Piaget in numerous aspects, he admitted the richness of the clinical method used by the Swiss in the study of the individual cognitive process and the convergence of interest in the study of the genesis of psychological processes.

It is important to highlight the important contribution of the two psychologists to the process of learning development. On the one hand, Piaget contributed with the stages of cognitive development and affirmed that education is a door of transformation and not of repetition. Vygotsky, despite his brief life, left many contributions to the scientific field and education. He is considered one of the most important psychologists of the current century. His influence on psychology and education has significant repercussions in Western countries.

With regard to practical implications, studies point out that the learning development process has as a preponderant factor the social interaction between individuals mediated by language and sociocultural manifestations. This process takes place according to the individuality of each subject, in their interactions with others and with the world.

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