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# Leontiev's Theory of Activity and Donald Schön's Reflective Professor: reflections on teacher education

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**ABSTRACT.** The present theoretical essay intends to analyze Leontiev's Theory of Activity and Donald Schön's Theory of the Reflective Professor in order to understand the common points between them and in what way they can be related to the formation of teachers. Leontiev, a disciple of Vygotsky, understands that human development occurs in the work and in social relations established by men in their surroundings. For Schön, the training of teachers occurs in their practice and reflection on this pedagogical practice. By contrasting the assumptions of the two authors, we come to the conclusion that Donald Schön's reflective teacher's proposal is closely related to Leontiev's Theory of Activity by considering that the teacher improves when reflecting on his or her pedagogical practice and, therefore, at work, the main activity of his or her life. In this sense formation is in fact self-training, since teachers re-elaborate initial knowledge in comparison with their practical experiences, which are lived daily in school contexts.

**Keywords:** teacher training; teaching; learning.

## A Teoria da Atividade de Leontiev e o Professor Reflexivo de Donald Schön: reflexões sobre a formação de professores

**RESUMO.** O presente ensaio teórico pretende analisar a Teoria da Atividade de Leontiev e a Teoria do Professor Reflexivo de Donald Schön com o intuito de compreender os pontos em comum entre ambas e de que forma podem ser relacionadas à formação de professores. Leontiev, discípulo de Vygotsky, entende que o desenvolvimento humano ocorre no trabalho e nas relações sociais estabelecidas pelos homens em seus ambientes. Para Schön, a formação dos professores ocorre em sua prática e na reflexão sobre essa prática pedagógica. Por meio da contraposição dos pressupostos dos dois autores, chegamos à conclusão que a proposta de professor reflexivo de Donald Schön está intimamente relacionada à Teoria da Atividade de Leontiev ao considerar que o professor se aprimora ao refletir sobre sua prática pedagógica e, portanto, no trabalho, atividade principal de sua vida. Nesse sentido, a formação é, na verdade, autoformação, uma vez que os professores reelaboram saberes iniciais em confronto com suas experiências práticas, cotidianamente vivenciadas nos contextos escolares.

**Palavras-chave:** formação de professores; ensino; aprendizagem.

## La Teoría de la Actividad de Leontiev y el Profesor Reflexivo de Donald Schön: reflexiones sobre la formación de profesores

**RESUMEN.** El presente ensayo teórico pretende analizar la Teoría de la Actividad de Leontiev y la Teoría del Profesor Reflexivo de Donald Schön con el intuito de comprender los puntos en común entre ambas y de qué forma pueden ser relacionadas a la formación de profesores. Leontiev, discípulo de Vygotsky, entiende que el desarrollo humano ocurre en el trabajo y en las relaciones sociales establecidas por los hombres en sus ambientes. Para Schön, la formación de los profesores ocurre en su práctica y en la reflexión sobre esa práctica pedagógica. Por intermedio de la contraposición de los temas puestos de los dos autores, llegamos a la conclusión que la Teoría de la Actividad de Leontiev al considerar que el profesor se perfecciona al reflejar sobre su práctica pedagógica y, por lo tanto, en el trabajo, actividad principal de su vida. En ese sentido, la formación es, en realidad, auto formación, una vez que los profesores reelaboran saberes iniciales en confrontación con sus experiencias prácticas, cotidianamente vivenciadas en los contextos escolares.

**Palabras-clave:** formación de profesores; enseñanza; aprendizaje.

## Introduction

Teacher training and, in particular, research involving reflection on and about pedagogical practice has been the object of study by researchers from different areas. In this sense, this study aims to establish a dialogue between Alexis Leontiev's Theory of Activity and Donald Schön's Reflective Theory in an attempt to understand what is common between both from the perspective of teacher training.

It is important to emphasize that these two theoretical approaches were formulated and applied at different historical and social moments, six decades apart. The Theory of Activity emerged after the Soviet Revolution in the 1930s while Donald Schön's Theory of Reflective Professor emerged in the early 1990s. One of the proposals is initially aimed at the study of the problem of teaching-learning process under the bias of educational and developmental psychology. The other, in turn, is directed to the reflection on professional practice in a curricular perspective.

The research by Longarezi, Pedro and Perini (2011) will also serve as a basis for our reflections, since they analyze the relationship between Leontiev's Theory of Activity and the continued formation of teachers in service in Alvorado Prada. Just as the proposal of the continuing formation of teachers in service the formation of Donald Schön's reflective teacher also predicts that continuous formation and improvement of teachers occur in the reflection in and on their pedagogical practice, that is, in the main activity of the life of man, in the classroom, in his work.

In order to reach the objective of this article, we will initially analyze the theoretical foundations of Vygotsky's cultural-historical psychology that made possible the development of Leontiev's studies. We then analyze Leontiev's Theory of Activity and Donald Schön's Reflective Professor proposal in order to understand the common points and how they can be related to teacher training.

## Vygotsky and the cultural-historical theory

For Wertsch and Tulviste (2013), Vygotsky's work can be divided into two parts. The first until 1924 and the second from his participation in the II Congress of Psychoneurology of Leningrad, in which he presented the work entitled 'The methods of reflexological and psychological investigation'.

From 1925, Vygotsky began his studies on the crisis of psychology seeking alternatives within dialectical materialism for the conflict between the idealistic and mechanistic conceptions of psychology. His team of scholars included his disciples, collaborators and followers, Aleksander Luria (1902-1977) and Alexis Leontiev (1904-1979).

Santos (2002) affirms that Vygotsky was one of the scholars that deeply influenced the psychology of education and his main objectives can be segmented in: a) to reformulate the psychological theory starting from the Marxist perspective; and b) to develop concrete ways of trying to solve some practical problems faced by the USSR in relation to the psychology of education and therapy.

Vygotsky (1991) developed the analysis of what he called the crisis of psychology based on the texts of German, French, English, and American researchers.

Influenced by Marx, Vygotsky concluded that the origins of higher forms of conscious behavior should be found in the social relations that the individual maintains with the outer world. But man is not only a product of his environment, he is also an active agent in the process of creating this environment. The abyss between the scientific and natural explanations of elementary processes and the mentalistic descriptions of complex processes can not be transposed until we can discover the means by which natural processes such as physical maturation and sensory mechanisms intertwine with culturally determined processes to produce the psychological functions of adults. We must, as it were, walk out of the organism in order to discover the sources of the more specifically human forms of psychological activity (Vigotskii, Luria, & Leontiev, 1998, p. 25-26).

The theoretical-methodological foundations of the historical-cultural approach in psychology, developed by the Soviet psychological group led by Vygotsky, attempted to understand and explain how the typically human characteristics of behavior were formed throughout history and how they develop in each individual.

Vygotsky criticizes the theories of psychology that developed at the same time (in Europe and in the USSR, specifically) and which were polarized between subjectivism and objectivism. Such currents analyze the psyche

separating it from the concrete life of subjects, separate learning from development, or prioritize only biological development, dichotomizing the world inward and outward. Among the main contributions of Vygotsky in the construction of a socio-cultural-historical psychology are the concepts 'social formation of the mind', 'zone of proximal development', 'more capable partner', among others that refer to the social, cultural and historical dimensions of the formation of individuals and base their relations with other individuals and with the world towards certain objectives (Camillo & Mattos, 2014, p. 213).

It should be noted that no one before Vygotsky (1991) ever considered the notion that what children can do with the help of others (people, technological and cultural productions) could be somehow more indicative of their mental development than what they can do on their own. In order to solve this problem, Vygotsky proposes two questions to be solved: 1) What is the general relation between learning and development? 2) What are the specific aspects of this relationship when the child reaches school age?

One of the most important contributions of Vygotsky (1991) to understand children's learning and development was the concept of the Zone of Proximal Development (ZPD).

The Zone of Proximal Development (ZPD) is the 'distance' between the actual level of development, which is usually determined through the independent solution of problems, and the level of potential development, determined by solving problems under a mentor or in collaboration with more capable peers.

Social interactions provide the conditions and are constitutive (process/product) of the existence and extension of the ZPDs. According to Vygotsky (1991), the Zones of Proximal Development have three basic assumptions.

The first assumption, of generality (ie, applicable to learning all types of content) focuses on the idea that a person is able to perform a certain number of tasks on his own, but in collaboration he can perform a larger number. The concept of Zone of Proximal Development is not related to the development of abilities of some particular task, but is related to the 'integral' development.

The second assumption, of assistance (learning depends on interventions by someone more competent), emphasizes how a more competent adult/ teacher/student/person should interact with a child. It is not the competence in itself of the most knowledgeable person that is important; the important thing is to understand the meaning of assistance in relation to the child's learning and development.

The third assumption, of potential development focuses on 'apprentice properties', including the notions of potential and/or readiness of an apprentice to learn. Potential is not a property of the child, as these formulations are commonly interpreted, but simply an indication of the presence of certain functions in maturation, which may be the target of a significant intervention action. The Zone of Proximal Development refers to maturing functions that are relevant to the next developmental-age period and which provide the means to act in collaborative situations that could not be achieved independently. These functions are created, processed, and produced during and from interaction. Therefore, interaction provides conditions to identify the existence of these functions and to what extent they have developed.

The principle of Vygotsky's (1991) approach is the socio-historical dimension of the psyche, revealing that the differential of man in relation to other species is in his life in society. His psychological functioning is constituted in his social relations. The historical-cultural approach therefore considers that every psychological function develops in the relationship of the individual with other individuals and, finally, in the individual himself. From social to individual.

The scholar built a psychology following the Marxist philosophical tradition, so he explained the social-historical constitution of human psychological development in the process of appropriation of culture through communication with people. In his perspective, learning is linked directly to teaching and is conceived as a process of systematization of knowledge and appropriation of knowledge in which the influence of social activity is extremely relevant. The concept of mediation is also very important in Vygotsky's conception. For him, mediation occurs when there is an intervention process with the use of an intermediary element in a relation. Vygotsky distinguished the instruments and the signs as elements of mediation. The instrument can be understood as an element that has the purpose of mediating the relation of the worker to his object of work, for example, the ax. The sign has a function analogous to that of the instrument, but acts as an instrument of psychological activity (Longarezi et al., 2011, p. 391).

Santos (2002) emphasizes that the 3 principles that underlie the theoretical structure of the studies realized by Vygotsky are: 1) the belief in the genetic or evolutionary method; 2) the thesis that higher psychological processes have their origin in social processes; and 3) the thesis that mental processes can only be understood through the understanding of the instruments and signs that act as mediators.

Vygotsky's great goal was to see how psychological functions such as memory, attention, perception, and thought first appear in the primary form and later appear in higher forms. This author established a distinction between 'natural' forms and the line of 'social' development. Natural development is transformed into social development, whereas the former produces primary functions, while the social produces higher functions. In these perspectives, we can see the important distinction made between the elementary functions (common to animals and humans) and the higher psychological functions (specifically linked to humans and considered products of the sociocultural context and of which humans are part) (Santos, 2002, p. 129, grifo do autor).

Thus, Vygotsky (1991) argues that the human species is essentially social, because it is only through interactions with others in daily activities that one develops and humanizes him- or herself.

The human being is situated in the order of the symbolic and his historical-cultural relations - man transforms nature to meet his needs and transforms himself, because for this he develops his mental functions and technical skills. By and at work he produces technical instruments that transform nature and create cultural objects of a semiotic nature.

Man relates to the natural or cultural world through the construction of technical instruments (work) and sign systems. Nature control and behavior control are mutually linked: man-made changes in nature alter the very nature of man (Vygotsky, 1991).

We can say then that Vygotsky's main contribution to education was that he did not consider the learning process as a linear succession of steps that the student should pass, as was common at the time, but as a process that takes into account the way in which human beings develop their knowledge of the world, implying a broader view of the phenomenon in which the cultural milieu plays a fundamental role (Santos, 2002, p. 131).

Assuming that learning begins long before school, this implies that any learning at school will always have a prior history.

For Compiani (1996), the teacher is not limited to providing 'learning situations' in which students can only explore and broaden their conceptions of reality. The relationship is more dialectical because of the confrontations provided through the dialogues between teachers and students. Appropriately motivated students can focus on parts of their worldview that they did not consider problematic before and can begin to recode and rebuild their understanding of them. In this perspective, the teacher needs to accept and use the contributions that the student brings to the tasks, incorporating student's actions, ideas in his way of teaching. The teacher appropriates what the student says or does, as the later moves the former cognitively to the level requested by the activity.

It should be noted that Vygotsky did not analyze human activity in depth, but it was Leontiev and Engeström who devoted themselves to researching this subject.

The idea that constitutes one of the central theses of the Theory of Activity, that is, that it is through the activity that consciousness can emerge and that human potentialities can develop. Thus, Vygotsky is credited with the origins of what we have called the theory of activity, the later developments of which were largely due to the efforts of scholars such as Leontiev and Engeström who, to a certain extent, extended the work of Vygotsky (Camillo & Mattos, 2014, p. 213-214).

As the focus of Vygotsky's studies were not the questions related to human activity, it is necessary to go further, and to seek the foundations of Theory of Activity in Leontiev's studies.

## Leontiev's Theory of Activity

The question of the Theory of Activity and its correlations with themes such as teaching, learning process, teacher training and others have been addressed by several international and national researchers (Engeström, 1999, 2002, 2008; Duarte, 2002; Sforzi, 2003; Asbahr, 2005; Moreira, Pedrosa, & Pontelo, 2011; Moretti & Moura, 2011; Abreu & Moura, 2014; Toti & Silva, 2018).

The Theory of Activity emerged in the field of psychology with the works of Vigotskii et al. (1998). Currently, it presents a multidisciplinary character encompassing fields of knowledge such as education, anthropology, labor sociology, linguistics and philosophy.

In the words of Camillo and Mattos (2014, p. 2014-215),

[...] the Theory of Activity seeks to analyze human development within its activities, taking into account the psychological, anthropological, sociological, historical and linguistic aspects. It differs from other approaches of the same school by taking as a unit of analysis human activity, which would be the smallest unit containing the

complexity necessary for the understanding of human development, and can not therefore be divided into smaller elements of the analysis process.

The central question in Theory of Activity is the relationship between the objective structure of human activity and the subjective structure of consciousness. For Duarte (2002, p. 284), among the various implications of Leontiev's analysis of this relationship, two deserve attention:

[...] in the first place, the advance in the field of the Marxist theory with respect to the complex relations between individual and society; secondly, but with the same degree of importance, the enrichment of the methodological tools of analysis of the processes of alienation produced by the activities that give meaning (or that give non-meaning) of the life of human beings in capitalist society.

However, Duarte (2002) points out that the contemporary authors whose works take as reference the theory of activity do not, for the most part, consider this important part of Leontiev's theory, depriving it of its explicit and consistent Marxist philosophical affiliation.

Leontiev (1978) points in the direction of the articulation of the essentially social activity of human beings to the processes of formation of consciousness, both in the sense of humanizing formation of consciousness and in the sense of alienating formation of consciousness.

Like animal activity, human activity always has some motive. When this activity happens to be composed of smaller units, actions, that is to say that each of the individual actions components of the collective activity ceases to have a direct relation with the motive of the activity and starts to maintain an indirect, mediated relation with that one reason. Viewed in and of itself, an individual action that is part of a collective activity may even appear to be unrelated to the motive of that activity if the relations between this individual action and the set of actions that constitute the collective activity are not taken into account (Duarte, 2002, p. 285).

In the Socio-Cultural-Historical Theory of Activity, from a Marxist perspective, what differentiates the human race from other biological species is the historical process of cultural construction. Therefore, an individual is a social being charged with the marks of what is typically human and planetary, since the Earth is not only the stage of human activities, but both Earth and Man constitute and participate in the history of the Earth.

In studying the development of the infant psyche, we must therefore begin by analyzing the development of the child's activity as it is constructed in the concrete conditions of life. It is only with this mode of study that one can elucidate the role both of the external conditions of his or her life and of the potentialities which he or she possesses. It is only with this mode of study, based on the analysis of the content of the child's own activity in development, that we can properly understand the leading role of education and creation, operating precisely in its activity and attitude towards reality, and determining, therefore, his or her psyche and his or her conscience (Vigotskii et al., 1998, p. 63).

For Compiani (1996), the Theory of Activity can be defined as theoretical-methodological approaches that place activity (work) and culture at the center of the historical process of man/earth interactions. The study of the human mind in its cultural and historical contexts in a general conceptual system with the basic principles: i) activity with a hierarchical structure, object oriented, ii) internalization/externalization processes, iii) mediation by cultural tools that deals with development and learning. A psychology that does not focus on the individual but on the interaction between him or her, the artifact systems, and other developing individuals; a dialectical and non-dualistic approach to understanding and transforming human life and the sustainability of the Earth.

For Marx (2001), activity can not be individual because we are social beings and our relationships are mediated by human history objectified and appropriated by the individual. Sensory practical activity is what gives rise to the social-historical development of men and individual development.

Starting from the basic assumption of historical-dialectical materialism, Soviet psychologists choose the concept of activity as one of the central principles in the study of the development of the psyche. It was Leontiev (1978) who systematized the concept of activity, founding the Theory of Activity.

In the work *Language, development and learning*, Vigotskii et al. (1998, p. 68) bring the definition of the term activity.

We do not call all processes activity. By this term we designate only those who, fulfilling man's relations with the world, satisfy a special need corresponding to him. We do not call activity a process, for example, memory, because in itself it does not, as a rule, accomplish any independent relationship with the world and does not satisfy any special need. By activity, we designate the processes psychologically characterized by that to which the process as

a whole is directed (its object), always coinciding with the objective that stimulates the subject to perform this activity, that is, the motive.

For Leontiev (1978), activity (motive and intention) consists of actions (specific ends and objectives) and operations (instrumental conditions) that at different levels are coordinated to generate a higher level in the hierarchy.

In this sense, Kozulin (2002) identifies three mediating elements: signs and symbols, individual/group activities and interpersonal (social) relations. This complex human structure is the product of a development process deeply rooted in the links between individual history and social history.

We emphasize that the structuring of the activity does not happen by simple causal logic: coordinated operations generate actions, which, in turn, once coordinated, make up the activity. The different levels interpenetrate, feedback and determine each other, that is, although the activity is composed in the coordination of actions and operations, it is the one that determines and is determined by the context so that the coordination can happen. The operations consist of already internalized activities - carried out more automatically, that is, carried out without the need to dwell on them. Each action or operation, at different levels of the hierarchy, is coordinated so that depending on the level of analysis, the hierarchical levels of operation, action and activity can be understood as lower or higher hierarchical levels of other linked activities, revealing different degrees of complexity of the object of analysis (Camillo & Mattos, 2014, p. 217).

Therefore, the theoretical foundations of Theory of Activity formulated initially by Vygotsky and deepened by Leontiev indicate that it is possible to analyze such theory from the perspective of educational practice and teacher training.

## Donald Schön and the training of the reflective teacher

Donald Schön's studies of the reflective teacher first gained momentum in Europe in the early 1990s, and later came to Brazil as a proposal for differentiated teacher training. As a result of its importance to education, this theme has been addressed by international and national researchers (Schön, 1992, 2000; Alarcão, 1996; Zeichner, 1993, 2008, Geraldi, Fiorentini, & Pereira, 1998; Pimenta & Ghedin, 2002, Shigunov Neto & Fortunato, 2017).

Donald Schön's studies, theoretically based on John Dewey's Theory of Inquiry, were first published in the United States, and later in several languages, such as Portuguese. The object of study of his works refers to reflection in action and reflection on action, that is, the professionals when reflecting on their professional practice present conditions to make the best decisions and to improve their own practice.

The origins of the term 'reflective practice' refer to the early 20th century in the United States with the publication and dissemination in the academy of John Dewey's research on reflective teaching.

The reflective thinking model, embodied in the reflective action proposed by Dewey in the 1960s, became a major work in the 1990s with the rescue of his concepts by consecrated national and international researchers who sought to break with the model of technical rationality which caused distance between theory and practice, hitherto present within the academy (Shigunov Neto, 2017).

Although this conception was historical, it became a major idea in the initial and continuing teacher training courses in the 1990s, when Donald Schön crystallized the term 'reflective professional', leading educators to complement the idea of 'reflective teacher' (Shigunov Neto, 2017).

Schön developed much of his studies from the theory proposed by John Dewey, especially published in the work *How we think*, which dates from 1910. Dewey's studies on the act of thinking signal that the act of reflection can occur in different degrees of complexity, from the most rudimentary to the most complex. For Dewey there is a close and complex relationship between pedagogical practice and reflective thinking. Through reflective teaching proposed by John Dewey it would be possible to teach and learn, therefore, reflective thinking would be a mediator between teaching and action (Zeichner, 1993).

The author points out that contemporaneity has brought numerous transformations, even with profound consequences for professionals, as professional practices have become unstable, unpredictable and indeterminate. At a previous historical moment, the professional formation was based theoretically in the model of technical rationality, that provided a coherent and effective formation for predictable and stable environments.

However, at the present time, this model of professional training is not more effective than when it was implemented and widely used in earlier times. In this sense, it is necessary to present a 'new' model of

professional training that provides conditions to train and create the professional skills necessary for the exercise of the trade in undetermined, complex, uncertain and unique environments.

Therefore, in the model of technical rationality the professional uses previous techniques and experiences to carry out the activities of his craft. However, in times of uncertainty and unpredictability this model of vocational training no longer meets the professional needs. Thus, the reflective professional model proposed by Donald Schön presented as a possible professional training solution, in order to effectively and efficiently enable professionals to work in unstable environments.

Donald Schön's preoccupation with the professional training offered at universities refers to the problem of the impossibility of the knowledge taught in the school banks to be incapable of instrumentalizing the future professionals to exercise their professional practice in adverse and uncertain situations. That is, it expresses its concern with a professional curriculum that is no longer able to train and prepare future professionals for competent performance in uncertain areas of professional practice (Maciel, Shigunov Neto, & Lapolli, 2009).

Thus, the problem formulated by Schön and which became the starting point of his research was: is it possible to construct a curriculum that provides a solid professional formation capable of responding to the complex, unstable, uncertain and conflicting situations generated in the pedagogical practice? Therefore, Schön admits that there is a crisis in the professional formation and in the knowledge produced on the professional practice in the contemporaneity.

In this sense, the educational proposal of Schön presents a solid valuation of the reflection in practice and of the experience in the professional formation, that is, there is a concern with the development of the capacity for reflection.

Critical and historical analysis makes it possible to refer to the genesis of the concept of reflective teacher, that is, the proposals of the idealizer of the concept, the American researcher Donald Schön.

From the 1990s onwards, the expression 'reflective teacher' has taken a prominent place in the educational environment, however, due to the misappropriation, irresponsible transposition of the concept, there was, in the specific case of Brazil, a misrepresentation of the concept. The term reflection was treated under two prisms, on the one hand it was taken as an adjective and on the other hand had as a theoretical movement of understanding the labor of teaching (Alarcão, 1996; Pimenta & Ghedin, 2002; Maciel et al., 2009).

Donald Schön's pedagogical ideals were widely disseminated in the United States, Europe and later in Brazil, motivated by the questioning of professional training and the need for curricular reforms that were based on the capacity for reflection in unstable and uncertain situations that were increasingly frequent in postmodern societies. In this sense, the proposals of Schön were rescued for the theme of teacher training, because in times of uncertainties it seems that teachers' teaching practice is accentuated to occur in ambiguous school situations and full of uncertainties, needs and conflicts. Therefore, the transplantation of Schön's pedagogical ideals for the formation of the reflective teacher aimed a reflective pedagogical practice consubstantiated in school institutions (Maciel et al., 2009).

Schön's thinking penetrated the Brazilian academic milieu through the text entitled 'Forming Teachers as Reflective Professionals' published in the book of the renowned Portuguese researcher António Nóvoa *Teachers and their Formation* edited in 1992.

For Donald Schön, the development of a reflective practice is based on three central ideas: knowledge in action; reflection on action and reflection on reflection in action.

Schön's proposal for teacher training starts from the assumption of a reflective professional based on the premise of learning in action or learning by doing. Therefore, his proposal as a reflective teacher contrasts with the model of technical rationality so widespread in the educational area.

The transposition of Schön's reflective professional proposal for the formation of the reflective teacher was motivated by the profound transformations that occurred within the school institutions that imposed efficient and effective answers to the daily pedagogical problems for the model of technical rationality could no longer give the necessary answers to educational problems. Through the model of practical rationality of Donald Schön, the reflective teacher presents the necessary requirements to make a diagnosis about his pedagogical practice and to implement the necessary changes for the teaching performance of quality. This process is only possible to the extent that practice, experience and knowledge are the basic requirements for pedagogical intervention, rather than techniques as it was previously in the model of technical rationality. Therefore, the reflective teacher model presents conditions for diagnosis and pedagogical intervention guided by practice, experience and pedagogical knowledge. However, according to Maciel et al. (2009), two



fundamental questions must be addressed and criticized by educational theorists: 1) Schön regards reflective activity as a solitary and isolated process of the process, which certainly creates a serious problem, since this situation makes it impossible to make a real diagnosis of the situation; 2) Donald Schön's proposal focuses only on the activity itself without taking into account the contextual dimension surrounding the teaching activity.

After the analysis of Leontiev's Theory of Activity and the proposal of Donald Schön's Reflective Professor, we can move forward in an attempt to understand the common points between the two proposals and how they can contribute to the improvement of theories about teacher formation.

## Teacher formation from the perspective of Leontiev and Donald Schön

After analyzing the foundations of Vygotsky's historical-cultural psychology, Leontiev's Theory of Activity and the proposal of Donald Schön's reflective teacher, it is possible to ask some questions: What type of teacher training and pedagogical practice is necessary for real learning from the students? How can these proposals influence initial and continuing teacher education and teachers' pedagogical practice? Considering the understanding of the learning process present in Vygotsky and Leontiev's theories of historical-cultural psychology, how should the pedagogical activity of the teacher be in the classroom?

We understand that the answers to these and many other questions about teacher education, especially the continued formation of teachers, can be found in a performance different from the traditional one, in one that there is no polarization between subject and object in the teaching process, but the dialectical relation is sought. The pedagogical relationship is thus established:

Teacher → Student → Teacher → Student.

In this complex process, what matters is the differentiated baggage of students and teachers that relate with each other, rescuing qualities of both in the process of teacher training. The teacher and student play a key role in the learning process. There is no exclusivity of one over the other, since both jointly determine the pace and methodology to be adopted in this complex process. In this sense, as both actively participate in the process of construction and reconstruction of knowledge, research will play an extremely important role. That is, the research will be the pedagogical tool that will substantiate this complex process.

In addition to guaranteeing the student's appropriation of knowledge in a planned way, another element of the social significance of the pedagogical activity is the formation of the student's critical posture, allowing the learner to also have access to the process of knowledge production. The student is not only the object of teacher's activity, but mainly its subject, and is constituted as such in the teaching/learning activity insofar as he or she actively and intentionally participates in the process of appropriation of knowledge, surpassing the spontaneous and daily acquisition of knowledge (Asbahr, 2005, p. 114).

Being the role of the teachers one of mediating the learning process they must start from the historical knowledge that their students bring and provide conditions for new knowledge to be produced in the interaction of students with their colleagues and students with the teacher. This means that the teaching-learning process provides the transformation of the student and also of the teacher, through the knowledge produced together.

The social significance of the pedagogical activity in the educator is precisely to provide the conditions for the students to learn, or rather to engage in learning activities. In order to do so, the teacher is responsible for organizing situations conducive to learning, taking into account the contents to be transmitted and the best way to do so. The teacher is therefore the mediator between knowledge and the student, between human-genetic cultural products and human beings in development. Both Vygotsky (1988) and Leontiev (1978) emphasize the mediating character of the work of the teacher (responsible adult or more experienced child) in the process of appropriation of cultural products (Asbahr, 2005, p. 113).

Libâneo and Freitas (2006), when analyzing the theoretical contributions of the cultural-historical theory present in the works of Vygotsky, Leontiev and Davydov indicate their contributions to the understanding of the process and the existing relationships in the teaching and learning process. Although they affirm that new and in-depth research on the pedagogical practice of teachers is necessary, they indicate that the professional activity of teachers must be understood and analyzed taking into consideration three aspects: 1) the theoretical-critical appropriation of the objects of knowledge, through theoretical thinking and considering the contexts in which the teaching action occurs; 2) the appropriation of methodologies of

actions and ways of acting that facilitate the work and act of teaching; 3) the consideration of the social, political and institutional contexts that influence school and pedagogical practice of teachers.

As Longarezi et al. (2011) rightly point out, there is a very close relation between the foundations of Leontiev's Theory of Activity and in-service teacher training, since in considering work as the trigger for human development, one can presuppose that man can only develop in the main activity of his material life, at work. In the case of the teacher the work is the teaching itself, in that sense its development occurs in its pedagogical practice and in the relationship with other men.

Following this same line of reasoning, we understand that the proposal of Donald Schön's Reflective Professor is also closely related to Leontiev's Theory of Activity by considering that the teacher improves when reflecting on and about his pedagogical practice. Therefore, this reflection on his pedagogical practice approaches the foundations of Leontiev's Theory of Activity, since he proposes that man is formed in the main activity of his material life.

## Conclusion

This study sought to establish a parallel between Alexis Leontiev's "Theory of Activity" and Donald Schön's Reflective Teacher in an attempt to understand what is common between the two theories from the perspective of teacher training. Leontiev, a follower of Vygotsky's theories and cultural-historical theory, understands that human development occurs in the work and social relations established by men in their environments. Schön, on the other hand, considers that formation of teachers occurs in their practice and in their reflection on this pedagogical practice and therefore, as Leontiev also proposes, in their main activity, work.

The proposal of Donald Schön's reflective teacher is closely related to Leontiev's Theory of Activity, considering that the teacher improves when reflecting on and about his pedagogical practice. Therefore, in reflecting on his pedagogical practice, he approaches the foundations of Leontiev's Theory of Activity which proposes that man is formed in the main activity of his material life.

Accordingly, we believe that new studies can and should be carried out to deepen the possible contributions of the theories discussed here, thus enabling an improvement of teachers' pedagogical practice.

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