

# SOCIAL NATURE OF HUMAN LEARNING

By

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***Abstrak:** Para pakar pendidikan telah berabad-abad mencoba untuk mendefinisikan apa sebenarnya yang dimaksud dengan belajar. Dengan kata lain, mereka ingin mengetahui bagaimana sebenarnya proses belajar itu terjadi. Mereka berusaha untuk memahami apa itu berfikir, apa artinya mengetahui sesuatu, dan bagaimana pengetahuan yang ada pada diri masing-masing individu dapat direpresentasikan dan diimplementasikan. Banyak teori sudah dicetuskan untuk menerangkan hal demikian. Tulisan ini mencoba menjelaskan salah satu teori yang digali dari pakar-pakar pendidikan yang berasal dari Rusia. Teori tersebut biasa disebut dengan Activity Theory (Teori Aktivitas). Tulisan ini adalah sekelumit dari kajian pustaka yang merupakan bagian dari disertasi doktor penulis.*

## 1. Introduction

Well-articulated views that clearly answer the epistemological questions of human learning have exercised psychologists and educators for centuries. They have searched into the ontological and epistemological truths about human learning. They attempted to define what mind is, what it means to know something, and how our knowledge is represented and manifested. Many theories have been produced to explain the nature of human learning. One of the perspectives is Cultural-Historical Activity Theory -more commonly called, Activity Theory.

From the Activity Theory perspectives, learning opportunities only become learning 'events' when students fully engage with the activity systems including the use of Information Communication Technologies (ICT). This paper suggests that these students can only make meaning of their engagement with ICT and the subsequent changes in their ways of learning, when they

see the broader picture of how engagement with ICT not only takes place on a physical or material level, but is also strongly related to their historical and cultural context. A core element in such an approach is the view that human higher order functions are distributed across resources and are situated within specific social, cultural, and historical contexts of the ICT community (Angeli, 2008; Boer, Baalen, & Kumar, 2002; Lim, 2002; Cole & Engeström, 1993).

This paper is presented to answer the basic questions regarding the explanation of human learning. It is particularly to answer the following questions:

1. What is the origin of human thinking?
2. What theory is currently popular to explain the action of human learning?
3. What are the key points of sociocultural theory

## 2. Social Nature of Learning

The sociocultural theory of learning is a school of philosophical thought that embraces the primacy of human action, the interaction and involvement of individuals within communities, and the mediational power of technologies. This perspective is regarded as a theoretical framework for analyzing human practices or ‘what people do’ in context, instead of solitary individuals (Engeström, 1999). This is in contrast to the traditional theoretical orientation known as Cartesian Dualism. Cartesian orientation separates the mind from the body and treats the mind as a self-standing, independently operating entity (Grabber, 2004).

Cartesian research views the mind as disembodied and disembedded. The separation goes deeper than a mere difference between a part and the whole. Body and mind are two different structures. The body according to Cartesian proponents is best thought of as a machine (Fraser, 2005). It is mechanically automatic like a watch and does not think - the same as a watch’s gears and mainspring. The mind, by contrast, is essentially a *thinking* thing separated from context and any other physical property, and governed by reason rather than mechanical causation (Fraser, 2005).

Even though René Descartes (the founder of the Cartesian Dualism) claims that these two domains—body and mind—can causally interact with one another (Grabber, 2004), cognitive processes are thought of as residing inside the head isolated from their surroundings. Cartesian tradition focuses entirely on the *cogito*—the thinking self (Almog, 2008), rather than the *being* located within their surroundings and communities. For instance, the study of memory typically involves the examination of

how individuals memorize a body of knowledge, how they encode it and integrate it into the existing knowledge structures, and how they retrieve it from those structures (Grabber, 2004). The study of memory usually involves abstract tasks that are typically meaningless and likely to have very little connection with the real world (Grabber, 2004). As a consequence of such a tradition, “the actions of the individual do not seem to have any impact on the surrounding structures” (Engeström, 1999, p. 19).

In recent years, however, Cartesian Dualism has come under severe criticism from many quarters. Some of these criticisms are presented from the sociocultural perspectives of learning (Engeström, 1999; Wertsch, 1998; Hutchins, 1995; Lave & Wenger, 1991; Winograd & Flores, 1986). The sociocultural perspectives view consciousness as not being found in the individual head as much as in everyday practice (Lave & Wenger, 1991). Lave and Wenger elaborate further in stating that consciousness is manifested in what we do, in the communities that grow around us, in the tools we use and in our language and landscape. It is embedded in social and cultural backgrounds. The paragraphs that follow explore the historical overview of the sociocultural embeddedness of learning.

While the sociocultural theory in many ways has become synonymous with the theoretical work of Russian psychologist Lev S. Vygotsky (1896-1934), Valsiner and van-der-Veer (2000) show that it can be traced throughout the 19<sup>th</sup> century in Europe, especially among French psychologists who became fascinated with how *the idea* is socially constructed. The authors discuss several key theorists and how they relate to each other through the concept of *sociogenesis* – “the social genesis (i.e. development,

emergence) of the person” (Valsiner & van-der-Veer, 2000, p. 3). With the emphasis on *emergence* of psychological phenomena and social origin, sociogenesis is at the heart of sociocultural perspectives.

The roots of sociogenetics can be found in the work of several European and American scholars. For instance, the French psychologist Pierre Janet (1859-1947) argues that all mental acts are originally social. Janet maintains that all human conduct is originally related to actions when people carry out their daily lives with others and mingle with their surroundings. In this way, Janet strongly endorses culturally based and community based mental processes (Valsiner & van-der-Veer, 2000). In relation to Janet’s social mental origin, Leont’ev (2005b) introduces the concept of *labor*. He argues that mental acts are not formed by the brain but by labor. Labor is “a process of activity that connects men with nature” (Leontiev, 2005b, p. 59). When men do certain jobs, it is unavoidable for them to interact with the external features of nature including other people with whom they collaborate, the tools they employ, and the standard mechanisms they follow. Therefore, the activity “is realized not by a lone being, ... but under conditions of people’s joint activity” (p. 60). This is in sharp contrast with the Descartes’ ‘*cogito*’ which privileges theory over practice. The activity of men exist independently of a medium (Almog, 2008).

Similar ideas are expressed by James Mark Baldwin (1861-1934), a close intellectual partner of Janet. He shares the negation of Cartesian dualism of mind and body and argues for the unification of the person and social world. Through a dialectical view, he has no difficulties reconciling the personal and the social facets of

human development (Valsiner & van-der-Veer, 2000). Also, Baldwin was especially interested in relationships between the ‘outer’ and ‘inner’ experiences, and imitation processes. According to Baldwin this is not a matter of just copying a conduct, but a process where the subject has an *interest*, an orientation towards the goal. This process parallels Leont’ev’s notion of *activity* and *action* (cf. section 2.1.2 for further discussion). Leont’ev (2005) argues that an activity of a person is consistently associated with other activities to satisfy their goals. Leont’ev gives an example of maintaining a fire and hunting animals. A person who maintains a fire is connected with the need to cook the catch. “Fire is maintained because it is essential for something else, ... in this case, [the] nutritional matter” (Leontiev, 2005b, p. 61). In this example, a person cannot satisfy his/her *motive* by his/herself, instead, it is in collaboration with others. In this way, the joint activity is once again emphasized.

American pragmatism also holds sociogenetic views. John Dewey (1859-1952) is considered one of the founders of American Pragmatism. For instance, he addresses the teacher – learner relationship in exchange terms, calling attention to the social interaction between teacher and learner and how the teacher tries to reshape knowledge in accordance with the learner’s abilities and qualifications. This suggests a joint interpretation where the teach/learn and theory/practice dichotomy is suspended (Miettinen, 2006; Valsiner & van-der-Veer, 2000; Dewey, 1915). For Miettinen (2006), Dewey’s suspension of the teach/learn and theory/practice dichotomy indicates the negation of Cartesian Dualism. Dewey’s Pragmatism embraces the primacy of human action and the

practicalities of human involvement within the materiality of the world. He emphasizes that individuals and objects co-emerge and become transformed in practical activities. He says “we are at root practical beings, being engaged in exercise” (Dewey, 1991, p. 154).

In a sociogenetic view, *person*, according to Dewey (1938), is a dynamic concept and so is the environment which he/she interacts with. Context is not something static that determines an agent’s actions but “by acting upon its environment, the organism (in biological evolution) and the person (in social conduct) change that environment, and through it, change themselves” (Valsiner & van der Veer, 2000, p. 265). Also, when agents act upon the environment for some purpose, it changes and hence produces new functions to be exploited by agents. These observations are important because they imply a particular view of learning as a process where learner, peer and/or teacher and context engage in processes of transformation that produce certain functions. With his focus on the emergence of environments, humans as social organisms, and the mutually transformative potential of agents and environment, Dewey has contributed to a sociocultural perspective on learning (Miettinen, 2006). This is in a sharp contrast with Cartesian tradition, which posits learning in a single mind.

Much of what has been written above has been attributed to the Vygotskian tradition in psychology and education. Vygotsky (1896-1934) refines the theories of man as a tool-using social being and how language affords and constrains thinking (Vygotsky, 1978). However, he died before his theory formed a complete system. For example, his seminal concept of *zone of proximal development*, *ZPD*, was never

operationalized by Vygotsky (Kozulin, 1998; Wertsch, 1998).

Vygotsky uses the Russian linguist Aleksander Potebnya (1835 – 1891) as a source of ideas (Valsiner & van-der-Veer, 2000). Specifically, Potebnya’s notion that language externalizes and objectifies ideas became important to Vygotsky. This happens through three steps. The first is through the language of a particular culture, thus making ideas accessible to a community. Second, one single language is confining and by making use of a second or third language we transcend the constraints of the first. Third, words also objectify thoughts for the speaker and become a prerequisite for understanding the self (Valsiner & van-der-Veer, 2000). It is important to note that to Vygotsky, as well as Bakhtin (1981), the word is not a static entity. It changes according to user and context (Vygotsky, 1986). Through language, mental processes merge with cultural and social processes, but in a certain sequence:

*Every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level: first, between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals* (Vygotsky, 1978, p. 57, emphasis in original).

This has been referred to as “the general sociogenetic law of cognitive development” (Kinginger, 2002, p. 243). This theory holds that the characteristic of human mental functioning is based on the internalization of sociocultural means, namely, the *worlds* beyond the individual. The core of this theory is that all higher mental functions are the essence of internalized relations of a

social order, a basis for the social structure of the individual (Vygotsky, 1997). To Vygotsky, this approach is to overcome the divided conception of man as exemplified by the dualism of Descartes.

The above historical summary has presented a snapshot of the sociocultural embeddedness of learning. Various authors above embrace the concept of practical activity as a theoretical category that makes it possible to solve philosophical dilemmas that emerged from the Cartesian mind-body separation.

Engeström and Miettinen (1999) point out that pragmatism as introduced by Dewey has common features with Activity Theory, the theory adopted in the current paper. This theory, which constitutes a basis for understanding the nature of knowledge and reality, emphasizes the inseparability of mind and society. Engeström and Miettinen state that: *“the program of “transcending the dualisms” between thought and activity, theory and practice, facts and values has much in common with the theoretical aims of Activity Theory”* (Engeström & Miettinen, 1999, p. 5).

To this end, this paper identifies two important features of learning that can be derived from the above-mentioned concepts; namely, the students learn from multiple extensions of their engagement and from interaction with distributed virtual environments including networked communication and information retrieval. The second concept is that their learning is situated in a context, be it physical or cultural. These views, *distribution* and *situatedness*, integrate well with Activity Theory. In this framework, the students’ participation in the Virtual Learning Environments can be seen to act in a complex system of

actions, tools, members, rules, and a community (Engeström, 1999). The sections that follow firstly elaborate the origins of Activity Theory, and secondly outline the ontological and epistemological implication of sociogenesis.

### 3. Origins of Activity Theory

The origins of Activity Theory are associated with names such as Alexander R Luria, Lev S Vygotsky, and Aleksie N Leont’ev (Cole, 1999; Engeström, 1999; Nardi, 1996). In 1928, Luria’s work began the first Soviet publication to be published in English, with the well known premise that “man differs from animals in that he can make and use tools” (Luria as quoted by Cole, 1999, p. 89). Luria argues that tool use also changes the conditions of human existence and the structure of human psychological processes (Cole, 1999). The change in human thought that comes about through the use of a tool is ascribed to natural processes being complemented by indirect or mediated processes. Luria, therefore, recognized that human thinking is *culturally mediated*. Luria (cited in Daniels, Cole, & Wertsch, 2007, p. 3) states that:

We should not look for the explanation of behavior in the depths of the brain or the soul but in the external living conditions of persons and most of all in the external conditions of their societal life, in their social historical forms of existence.

In this way, human thinking is shaped by historical and cultural changes as a result of the tools used in the culture (material and mental tools, as well as symbolic tools such as language and art). He also describes the manner in which human brains interact flexibly with tools and symbols to adapt to and shape our environments – thus giving some of the first ‘neurological, physiological’

glimpses of ‘culture’ (Toulmin, 1999, p. 58).

A year later, in 1929, Vygotsky also focused on studying the change in human activity brought about by tool mediation and added that tool-mediated activities can lead to unique psychological functions (Vygotsky, 1978). Vygotsky’s formulation of a radically new theoretical concept that

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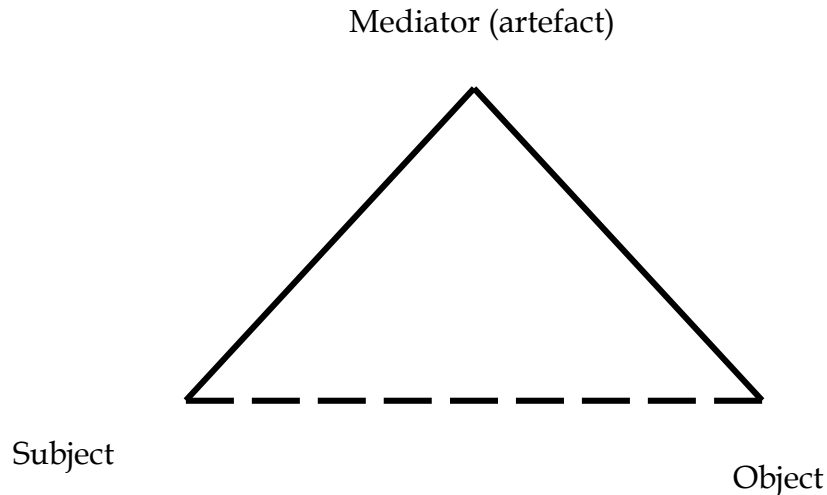
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**Triangle Model (Vygotsky, 1978, p. 40)**

In this model Vygotsky proposes that the human individual never reacts directly to the environment and that the relation between the human and the object is mediated by cultural means or artifacts which could include what Vygotsky referred to as signs and tools. This initiative is then explored further and adapted by Leont’ev after Vygotsky’s untimely death (Wertsch, 1998).

Leont’ev is the author who is mostly accredited with the formulation of the concept of *activity* as we understand it today within the field of Activity Theory (Engeström, 1999). Leont’ev conceptualizes activities as micro systems that are complex processes driven by objects and motives (Leontiev, 2005b). In relation to the social nature of human activities, Leont’ev argues that an activity never

an alternative to behaviourism and cognitivism is known as the model of *artifact-mediated* and *object orientated* action (Vygotsky, 1978, p. 40) as shown in the figure below.



stands alone by itself; rather, it is connected with other activities; “the action of a single given person [is] under conditions of the activity of other people, that is, it presumes a certain joint activity” (Leontiev, 2005b, p. 62). An object is seen as something that is realized through individual actions that are goal-driven. Leont’ev (2005a), furthermore, proposed that activities can be described on three levels or three “functionally subordinated hierarchical levels” (Kaptelinin, Nardi, & Macaulay, 1999, p. 29): the *activity* level, the *action* level, and the *operation* level.

Activities are seen by Leont’ev to consist of distinct actions or series of actions, which in turn consist of operations (Leontiev, 2005a). Activities are undertaken in order to

fulfill *motives*. Leont'ev explains that "the sign of an activity is that the object and the motive coincide" (2005b, p. 63); when the motive is taken away, the activities collapse. In other words, motives can be seen as major objectives in activities. For example, in the case of the current paper, the students' participation in the courses is meant to achieve success in their study. Such a relationship is described as *activity* and *motive*. When the 'success in their study' is removed from the context, constituting actions will never happen.

To accomplish one activity, an individual needs to perform several actions. Leont'ev defines action as "a process that is directed at a conscious goal" (Leontiev, 2005b, p. 62). It can be seen as a basic component of an activity (Leontiev, 2005a, p. 73). The goal of an action is an object that guides the action. Meanwhile, a goal can be broken down into sub-goals in order to meet a common goal (Leontiev, 2005b). For example, in order to gain success in their studies, the students are required to participate in several actions including discussion forums, giving group presentations, and writing essays.

As one moves down the levels of actions, one crosses the border between conscious and automatic processes, between *action* and *operation*. An action contains several operations. Leont'ev describes an operation as follow:

If the given content of an action emerges depending on the object (goal) of the action, then it is not an operation; if, on the other hand, the given content emerges in the action depending on the conditions in which the goal is given, then it is an *operation* (Leontiev, 2005a, p. 74).

In other words, *operations* can be described as functional sub-units of actions that are carried out

automatically (Kaptelinin, Nardi, & Macaulay, 1999). They do not have their own goals, but adjust actions to specific situations. Operations, to continue with the example above, may be the students logging on to their MUSO sites (the name of their online classroom; see also Section 4.4.3.1.), reading emails (not a discussion forum), and downloading files. However, as Kaptelinin et al. (1999) argue, operations can become action when goal orientation is involved. For example, reading emails can be actions when the students have obvious goals in doing this activity; or it becomes an operation when it turns into being routinized.

#### **4. Sociogenesis: The Ontology and Epistemology**

From the above outline of the emergence of sociocultural perspectives, the questions of ontology and epistemology become crucial to answer to establish a paradigmatic status. Even though there is ample work on ontology and epistemology *per se*, there has not been much work done on ontological and epistemological perspectives of learning relating to some status or value to what is learnt and how it is learnt. This makes it sometime difficult to see what is theoretically at stake and therefore results in misunderstandings as to what sociocultural perspectives essentially entail. If – as is often claimed – it is time to reconfigure education, its conceptual foundations must be addressed if we want to move beyond the debate only.

Brown, Collins, and Duguid (1989, p. 13), writing on the epistemology of situated cognition, make the connection between epistemology and classroom practices through a broad claim: "... much common educational practice is the victim of an inadequate epistemology.

A new epistemology might hold the key to a dramatic improvement in learning and a completely new perspective on education". What they say is that contexts contribute to the concepts people form. Concepts are not abstract but transferable between settings like, for example, authentic practices and classrooms. Knowledge and not just learning is situated and embedded in the world, and distributed among people and artifacts (Brown, Collins, & Duguid, 1989). However, in order to find out what such an epistemology entails, we have to look further, and not only at epistemology but at ontology as well.

When we trace the research tradition, according to Toulmin (1999), epistemology has been in deep crisis all through the 20th century. The reasons are chiefly found in the unproductive efforts to determine knowledge as the possession of individuals, as suggested by the Cartesian Dualism, "mental lives are trapped within our brains" (Toulmin, 1999, p. 57). Toulmin argues that epistemological philosophy seems to suffer from a "claustrophobic framework", and "the whole epistemological agenda now needs to be reformulated" (Toulmin, 1999, p. 54).

As has been indicated in the previous section, Descartes separates mind and body (Grabber, 2004); they represent two different categories, independent of each other. It follows that the (individual) mind is seen as being able to exist without matter. This is in direct opposition to a sociocultural ontology, which is, in essence, non dualist and refers to the mind as existing as a social entity. "Briefly, a theory of social practice emphasizes the relational interdependency of agent and world, activity, meaning, cognition, learning,

and knowing" (Lave & Wenger, 1991, p. 50).

In relevance to Lave and Wenger above, Packer and Goicoechea (2000) identify six key themes in the roots of sociocultural theory that have an ontological bearing:

(a) the person is constructed, (b) in a social context, (c) formed through practical activity, (d) and formed in relationships of desire and recognition, (e) that can split the person, and (f) motivating the search for identity (Packer & Goicoechea, 2000, p. 228).

In this way, the transformation of human identity is central and learning in this perspective is not so much about knowledge construction but as 'coming to be' through social practices, - "we must continually remake ourselves, and in doing so we make society and history" (Packer & Goicoechea, 2000, p. 231). This, in turn, makes learning an integrated aspect of ontology, not just epistemology. What is more, ontology and identity are not static entities, but in flux. Learning implies change in self, context and meaning, "Individuals operate not with schemata and procedures (as cognitive science models human behavior), but through attunements to constraints and affordances" (Packer & Goicoechea, 2000, p. 230). This is an "ontology of the person" (Packer, 2001, p. 494); what schools do and what becomes of a person who attends school are two aspects of the same ontological concern. Learning is thus not only related to knowledge but to knowing, i.e. "that school changes the kind of person a child becomes" (Packer, 2001, p. 511). *Transformation* becomes a socioculturally ontological metaphor.

At this point, Packer and Goicoechea (2000) argue that cognitive and constructivist ontology part with a sociocultural one. Mind as



culturally and historically made, the transformation of the individual through social practices, the dialectical relations between humans and their environment are ontological assumptions in a sociocultural perspective. "Learning entails both personal and social transformation – in short, ontological change" (Packer & Goicoechea, 2000, p. 235). In contrast, constructivists keep the dualism between the internal and the external. "What constructivists call learning is only part of a larger process of human change and transformation, the process called learning by socioculturalists" (Packer & Goicoechea, 2000, p. 238).

## 5. Conclusion

To summarize so far, a sociocultural ontology is process oriented, "where people shape the social world, and in so doing are themselves transformed" (Packer & Goicoechea, 2000, p. 234); hence "process is not only a guiding orientation, but is the fundamental nature of reality" (Sawyer, 2002, p. 295). It also views the individual as inseparable from the collective and context, underlining the distributed nature of learning over people and their environments. This is an antidualism ontological position.

To this end, the discussion has tried to make clear distinctions between dualist and empiricist perspectives in learning within sociocultural research tradition. The relevant discussion, in which the research paradigms are presented, and the opposing positions between positivist and interpretivist paradigms are outlined in order to present the arguments that the current perspective on learning has changed significantly in the new millennium.

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