

## WHERE IS COGNITION IF WE TALK ABOUT THE TEACHING OF ENGLISH AS AN INTERNATIONAL LANGUAGE?

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*Sin título*, Pollock, 1950<sup>1</sup>

### Abstract

This current piece of writing –placed, in disciplinary terms, between Psychology of learning and Methodology/Didactics- aims mainly at showing, in the light of present and updated authorized works, the unequivocal relation that is existent between the concept of distributed cognitions and task-based learning. The former was coined by Hutchins (1980's) and thoroughly developed by Salomon (1993) in his articles, among others. The latter is based on the claims put forward by Prabhu (1987) and Graddol (2006), and outlined in purely Vygotskian conceptions. Here, task-based learning is also analyzed within the framework of collaborative project work when dealing with the process of teaching-learning English as an International Language.

**Key words:** distributed cognitions, task-based learning, project work

### Resumen

El presente artículo –ubicado, en términos disciplinarios, entre la psicología del aprendizaje y la metodología/didáctica de lenguas diferentes a la lengua madre- tiene como principal objetivo mostrar, a la luz de la palabra actualizada de

<sup>1</sup> [http://www.allposters.es/-sp/Numero-32-1950-Posters\\_i1116897\\_.htm](http://www.allposters.es/-sp/Numero-32-1950-Posters_i1116897_.htm)

diferentes autores, la relación inequívoca que existe entre el concepto de cogniciones distribuidas y el aprendizaje basado en la resolución de tareas. El primero de los términos fue acuñado por Hutchins, en los ochenta, y desarrollado extensamente por Salomon (1993) en sus artículos, entre otros. El segundo, el aprendizaje basado en tareas, se basa en los principios expuestos por Prabhu (1987) y Graddol (2006), y es sustentado por concepciones netamente vygotskianas. Aquí, este enfoque es también analizado dentro del marco de proyectos colaborativos llevados a cabo durante proceso de enseñanza-aprendizaje del inglés como lengua internacional

**Palabras claves:** cogniciones distribuidas, aprendizaje basado en la resolución de tareas, trabajo por proyectos.

## **Distributed Cognitions and Constructivism versus Cognition**

In order to begin this article, it is required to assume that current methodological models should be understood as broader conceptions of more classic theories. It is in this way that we are setting ourselves in clear opposition to certain ideas put forward that claim that all trendy contributions substitute former beliefs. To analyze how the latest theoretical models are related to, as well as based on central constructivist ideas, set forth classic theories, does not mean to assimilate them. On the contrary, it let us picture them more meaningfully and, in consequence, situate them within a scientific tradition.

Many are the authors that have dedicated their time, and many are the books that have been written to study the topic of cognition and its place of location. If we bring up data edited nearly thirty years ago, we will come across beliefs that affirm that cognition only exists in the mind or brain of each human being. As Salomon plainly states in one of his treatises when trying to shed light on these controversial appreciations, for those academicians: «...(cognition) is a localized phenomenon that is best explained in terms of information processing at the level of the individual...» (Salomon, 1993:154) However, after profound and time-consuming investigations, nowadays, we come by a deep-seated change of perspective, and it is that change the one that has been labelled as “distributed cognitions”. What does this term involve? Why are these cognitions distributed? And, where are they distributed? This paper seeks to address these questions along the subsequent passages.

Before analyzing the concept that gives origin to this article, we will take a few lines to have a quick look at the new perspective on learning. Most recent investigations assert that cognitive change is not guaranteed merely by the encounter of new and previous knowledge. That is the reason why these new tendencies study the conditions in which these interactions and changes take place in order to be able to foster them. Thus, the pedagogic focus varies, considerably. The heart of the matter is not to research about learning as a phenomenon that happens, but the different ways to stimulate it. Knowing this, we may continue with the analysis of distributed cognitions.

The notion of distributed cognitions is the result of the basic socio-historical hypotheses by Vygotsky and has been analyzed in many works together with other topics such as *situated cognitions*<sup>2</sup>, collaborative learning, and the use of new information and communication technologies (ICT). The term distributed cognitions, firstly conceived by Ed Hutchins (1980's), highlights, from a new paradigm, the understanding of cognition not as an issue that only occurs in the mind or brain of each human being but as distributed, that is to say, as events that go beyond the human mind, that break barriers and are found in constant action and interaction with the knowledge possessed by other individuals, with any object involved in the context

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<sup>2</sup> When referring to situated cognitions, Brown, Collins & Duguid (1989) state that students use knowledge on situations that represent an authentic challenge for them. Knowledge is dependant on the activity and the context where it occurs, thus, situated.

where those people act out, with culture, with the setting, just to mention some factors. The theoretical developments related to these ideas deepen the study of the interactionist base described some passages above in this article, in view of the fact that the key point is to understand the characteristics that the contexts for learning should have in order to trigger the interactions we are looking for. This point could be seen from two different perspectives, that is, by analyzing the best conditions to activate previous knowledge and by examining the way students make use of the context to amplify their knowledge and skills. Cole and Egström, in 1993, were the first ones to assert the close connection that existed between the origins of the definition of distributed cognitions and the historical-cultural school of psychology. Here is a citation taken from Salomon to explain the key concept in this article:

Tradicionalmente el estudio de los procesos cognitivos, el desarrollo cognitivo y el cultivo de las habilidades y las competencias deseables desde el punto de vista educativo, ha tratado todo lo cognitivo como si fuese algo poseído y residiese en la cabeza de los individuos; los factores sociales, culturales y tecnológicos han sido relegados al papel de escenario o de fuentes externas. (...) Pero cuando se examina el comportamiento humano en situaciones en las que se resuelven problemas de la vida real y en otros contactos con el entorno social y tecnológico, aparece un fenómeno bastante diferente: las personas parecen pensar en conjunción o en asociación con otros, y con la ayuda de herramientas y medios que la cultura les proporciona. Los conocimientos, pareciera, no son herramientas vaciadas de contenido que se apliquen a este o a aquel problema; antes bien, aparecen en una situación que acometen grupos de personas y con las herramientas de que disponen (...) Considérese un equipo que trabaja en colaboración para programar una campaña política, un planificador económico que vuelca su pensamiento en una doble hoja computarizada o un alumno que estudia historia llenando fichas, señalando los márgenes de su libro de texto y trazando en un papel “redes” de hechos por recordar. Puede considerarse que el pensamiento de esos individuos no solamente incluye actividades cognitivas de «solista» sino también actividades distribuidas. (...) Lo que caracteriza esos actos cotidianos de pensamiento es que los entornos sociales y artificiales, que supuestamente están «fuera» de la cabeza de los individuos, no sólo son la fuente de estímulo y de guía, sino que en realidad son vehículos del pensamiento. Además, el ordenamiento, las funciones y las estructuras de esos entornos cambian durante el proceso, para convertirse en verdaderas partes del aprendizaje que resulta de la asociación cognitiva con ellos. Dicho con otras palabras: no es únicamente el «solista» el que aprende, sino «la persona-más» todo el sistema de factores interrelacionados...» (Salomon, 1993: 154-156)

Being aware of this and understanding that in the base of distributed cognitions we come across ideas such as: 1) Cultural mediation has a bi-directional effect, due to the fact that it modifies both, the context and the subject. At the same time, the two mentioned modify culture. 2) The cultural materials the authors refer to are concrete, as a machine or a computer could be, as well as symbolic, as language, the utmost tool, is. These cultural materials regulate actions with the environment and with us. 3) The interrelation that exists among people in a certain environment fosters cultural matters to go generation through generation, mediated by the artifacts aforesaid, allowing the mutual enrichment at the cognitive, affective, social and cultural level, among others; clearly, the ideas of the well-known author, Lev Vygotsky –writer who has become a hinge when we discuss about the teaching-learning of foreign/second languages- are the ones that surround and make more understandable the concept of distributed cognitions.

Just to refresh our memory on what Vygotsky and his followers have claimed, let us sum up the point under discussion stating that for social constructivism the act of learning consists in the acquisition of knowledge along with a change or modification of knowledge. In contrast to behaviorism-based theories, which used to allege in favor of a parallelism between external knowledge and acquired knowledge, social constructivism is concerned with the study and conceptualization of the changes produced in knowledge when acquisition takes place. The modification occurs both in the acquired knowledge and in the previous one intervening in the process; thus the acquired knowledge is transformed if compared with the external knowledge.

Analyzing this issue deeper, it could be said that social constructivism could be studied from its genetic base due to the fact that previous knowledge plays a very important and active role, acting out as the source from which the new acquisition will be built on. If the new knowledge is considerably beyond the student's current level of knowledge, including, of course, previous knowledge, it will not be acquired at all. In other words, the so famous Zone of Proximal Development has not been taken into consideration. The second base or aspect to be considered when analyzing constructivism is its interactionistic side. As it has been already mentioned, learning is the result of the interaction produced between new and previous knowledge. This result never equals the external knowledge, as already explained. Last but not least, social constructivism is said to be based on reconstructionism, as well. Learning requires the reconstructions and reorganization of existent knowledge. It is of no concern the amount of knowledge we are talking about, even as a minimum, it needs to be reordered. Rounding off, we could say that, in fact, initial investigations on the topic were centered on the first one mentioned, that is, the genetic base, trying to truly understand previous knowledge, whereas, nowadays, the focus seems to be changing towards the third one described in this passage, namely, reconstructionism, to fully understand how previous knowledge changes. This new emphasis implies variations at the level of methodology and didactic strategies, specifically, aspects we will thoroughly examine in the subsequent paragraphs, since it is more than necessary to pay special attention to ways of planning and sequencing contents to pave the way for reconstructions to occur in the student, and deeply evaluate the diverse forms of activating the student's previous knowledge.

Let us try to match Vygotskian conceptions with the new notion of distributed cognitions by means of an example: a six-year-old girl has lost one of her toys and asks for help to her father. Her father asks her where she saw it for the last time; the girl says: "I can't remember". So, he starts asking a series of questions: "did you have it in your bedroom? Outside? By your side?" To each question, the girl's answer is "no". When he asked: "in the car?" the girl replies: "I believe so", and there she goes to get her toy (Tharp & Gallimore, in Wertsch, 1991). Who remembered? The girl? Her father? From a Vygotskian perspective, the action of remembering does not belong to the girl, due to the fact that she could do it thanks to her father's aid. But it does not belong to her father, either, since it would have been almost impossible for him to try to find something that he had not lost. Considering the girl's limitations to solve a daily problem –finding a lost toy–, her father's assistance allows the girl to be able to organize her thoughts. In this way, and from a constructivist framework, it is considered that it was the social interaction between the father and his girl the one that permitted the act of remembering. The father's assistance, facing his daughter's drawbacks to solve a problem occurs within the interpsychological level of the mental function, in Vygotsky's words. The case presented explains the way an assisted subject, either by tools or by other subjects, is capable to fulfill tasks and/or resolve problems that he or she would not have been able to do, independently. Over time, these actions will move from the interpersonal to the intrapersonal level, to finally be internalized, being this the base of the concept of Zone of Proximal Development.

### **The Idea of Distributed Cognitions and its Implications in the lesson of EIL**

The big question is: as educators of the twenty first century, can we consider the term distributed cognitions as the guiding axis in our daily, educative job in the lesson of English as an International Language (EIL)? The answer is yes, and to this affirmative appreciation, we would personally add: it is highly recommended to put it into practice, always. Let us remember that when talking about distributed cognitions, researchers put the emphasis on how students can make use of the help got from the others to amplify their knowledge

and skills. It is also stated that working either with a paper and pencil, computers or with others helps not only in solving a task, but also in the development of mental skills, which derives in the fact that intelligence is distributed between the mind and the setting.

Taking into consideration the concept of Zone of Proximal Development, that is to say, to comprehend what the student is able to solve alone, individually, and what he can solve with the assistance of somebody who is beyond his current level of knowledge, it is claimed that what at the very beginning is distributed –or developed interpersonally-, over time, will become internalized, being part of the Zone of Actual Development. The other great query is: how? It is necessary to show a concrete, real and plausible example to be carried out in the classroom situation. The possibility of being able to elucidate this last interrogation will be our main concern in the following paragraph.

### **Distributed Cognitions and Collaborative Project Work in TEFL**

Project work is not something new in our teaching profession. Actually, this way of working has been implemented in diverse educational institutions for more than fifty years so far, not only in the area of foreign languages, but also in other subjects. Its root may be found in the works of famous researchers and psychologists, namely: Lev Vygotsky, Jerome Bruner, Jean Piaget and John Dewey. Nonetheless, the teaching-learning process of languages based on projects has shown its peak with the advent of task-based learning or real problems to be solved. In this approach, the emphasis lies on the communicative aspect of language as inclusive of the linguistic one (grammar, vocabulary, phonology, for example) (Canale, 1983), showing, in this way, that this renowned approach presents a shift in the understanding of the way in which content is taught: this sort of teaching practice stimulate students' participation and real communication in the target language, leaving aside a mechanical and memory-based teaching-learning method. Putting into practice project work –much better if it is cross-curricular- necessarily fosters collaborative work (Ribé & Vidal, 1993)

This change of conceptions coincides with the one remarked on all along the first passages of this article: the difference between the earliest notions of cognition and the new and fresh ideas about distributed cognitions. The perspective of distributed cognitions offers an advantage to mull over the process of learning, reconsidering human cognition in such a way as being conceived as distributed, beyond the individual himself, and this in different senses: considering other people, making use of symbolic means and taking profit from context and artifacts. In other words, it is crucial to understand the idea of distributed cognitions from Vygotsky's ideas. Whenever a person interacts with another person or objects, distributed cognitions will take place and the individual could eventually take profit from them, that is to say, distributed cognitions influence individual cognitions, triggering the occurrence of learning.

...puesto que Vygotsky (1978), a la vez que puso mucho el acento en la naturaleza socialmente distribuida de las cogniciones, vio en ello también un instrumento para cultivar las competencias del individuo...»; «...el aprendizaje despierta una variedad de procesos evolutivos que son capaces de operar sólo cuando el niño interactúa con personas de su entorno y en colaboración con sus pares. Cuando esos procesos se han internalizado, pasan a ser parte de sus logros evolutivos independientes... (Salomon, 1993: 90, 168)

In opposition to *weak* communicative approaches, we encounter *strong* versions these days, as well. The former are based on purely linguistic syllabuses, with a clear pre-selection of the language that the students are supposed to learn, and with emphasis on the product to be obtained. As an example, the so famous sequence *presentation-practice-production* can be depicted. Through this weak communicative approach to

the teaching-learning of an L2 or language different to the mother tongue, in our precise case, English as an International Language, a topic is introduced by the teacher with its subsequent manipulation, elicitation and systematization of the rule taught. Later, students are involved in pre-communicative practices to reinforce the new topic, to finally reach the so criticized free production step, stage where students are asked to produce, either in the written or in the oral medium, but compulsory using the language presented at the very beginning. On the contrary, a program of studies for the teaching-learning process of languages different to the mother tongue based on the resolution of tasks or genuine problems is procedural (Prabhu, 1987) since language is taught and emerges *through* authentic communications created with others, with equals, in a certain setting and mediated through varied objects (distributed cognition), rather than *to communicate* with others, later. This approach is said to be strong in nature, due to the fact that from the very beginning the new language is introduced through different tasks to solve, aided by the building of scaffolding on behalf of the educator, a scaffolding which is aimed to disappear when advancing in the Zone of Proximal Development and showing autonomy in performance. Maybe, the phrase that best describes this new position when trying to participate in the learning of a foreign language is the one put forward by Diana Larsen-Freeman (2000), which somehow states that we use English in order to learn it, rather than learning English in order to use it .

Coming back to project work, it is paramount to be serious enough when designing it, given that what occurs in the interpersonal set will be later internalized (intrapersonal area). Let us bear in mind that it is a holistic strategy, worth value in this global village we are living in, situation that faces us, as educators, with students with different learning styles, different cultural backgrounds, and different or multiple intelligences. A monotonous and homogeneous approach does not help our students to reach their maximum capacities, it does not assist them to advance along their Zone of Proximal Development, whereas a project work approach made up of tasks or problems to be solved with those *significant others* (other people and varied objects) lends them a hand to build on their individual and personal strengths and allows them to explore their interests within the corresponding syllabus.

Taking into account all the aforementioned, it is crystal clear that the content to be taught is the task itself. This task will activate the relevant background knowledge or *situated cognition*, shown through each student's contribution. On top of this, this task will represent a problem to be solved within the framework of a project work, which, from its essence, requires and needs relation and interrelation among participants for the creation of new knowledge (distributed cognition). All this should occur within a scenario of authenticity, global features and integration of language and contents, as well as purely personal aspects, such as each participant's character, experiences, and previous knowledge (Ribé & Vidal, 1993). It is this complex creation that must be understood as a moment in which assisting students is not dangerous at all. The educator can do it; other mates can also do it. Moreover, students can get assistance through the use of a calculator, a computer, a dictionary, or whatever. These *significant others* do not make the task easier for the students. On the contrary, their presence fosters the development of their situated capacities; their company encourages them to do it definitely more successfully than doing it in isolation, due to the distributed situation in which the act of learning takes place.

Hence, we, as educators of a new century that faces us with new challenges, must take a more constructive role: the role of understanding our students and sharing knowledge with each of them, paying attention to the individualities we meet and that are indispensable to solve a task and a project. All in all, we must consider what is demanded to be able to learn in a totally collaborative context and this encompasses the idea of distributed cognitions.

## Concluding

In conclusion, we insist on highlighting the intimate connection that exists between the notion of distributed cognitions and the latest communicative approaches based on the solution of collaborative projects in the area of English as an International Language. When Salomon tries to find the best way of defining distributed cognitions, the author refers as follows:

...distribución también significa compartir: compartir autoridad, lenguaje, experiencias, tareas y una herencia cultural. A diferencia del conocimiento y la capacidad que tradicionalmente se ha considerado que residían sólo dentro del individuo...«las cogniciones distribuidas no tienen un lugar único, dentro del individuo»...«están en medio de y se reúnen en un sistema que comprende un individuo y pares, docentes o herramientas suministradas por la cultura» (Salomon, G. 1993: 153-154)

To learn a foreign language by means of project work, made up of tasks to be solved is, in the end, to conceive the creation of knowledge as distributed cognitions, as the result of the constant interaction among human beings mediated by artifacts (the mother tongue, the target language, and material objects) to achieve a common aim, satisfying the individual necessities, as well as those that enrich ourselves as members of a culture.

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