

# AN EMPIRIC-COMPARATIVE STUDY CONCERNING THE IMPLICATIONS OF COGNITIVE CONSTRUCTIVISM ON TEACHING THEORY

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## **Abstract**

Given it has been earlier known that constructivism as a way of learning, has been always explained slightly from a wider range of theoretical perspective, the fact that all of them, in one way or another describe it via activities leading to cognitive development as behaviorism, qualifies the process as rather vague and sometime complex to be comprehended by the academic community. To clarify this description of the phenomenon, I would recall the fact that the teaching theory, deals with description of the amount of knowledge which is uncertain, and on the other hand, the learning process towards knowledge, consists of the construction of the process of knowledge itself.

In the process, the learners are the object of acquisition of new knowledge, which is acquired via the activity of constructing further knowledge, using their cognitive initiatives. In these learning circumstances, the teachers help and support them, by delivering knowledge, which the common language names them, as leaders who push learner towards a stronger Cognitive-Constructivist Learning Interaction (CCLI). This interactivity ends up with the higher degree of acquired language knowledge output. As a result, this research, aims to reveal and explain further the implication of cognitive-constructivist approach of the teaching theory, with our learners attending undergraduate education.

**Keywords:** *Cognitive-Constructivist, Undergraduate education, Implication, Learning theory.*

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## **Introduction**

As linguists and researchers, following the TREE scheme of blended teaching combining teaching and research, and on the other hand as behaviorists, we usually try to recall the fact that knowledge remains in a way a passively gained behavioral repertoire, fulfilled on cognitive constructivist's activities within the brain of the learner. In other words, the gained knowledge, results to be constructed on active basis, which as an approach, that puts the learners in the game of operating with the account of knowledge, which is predominantly acquired via new knowledge up building over the previously existing cognitive structures.<sup>41</sup> Furthermore, constructivism, as an efficient approach, theoretically is described as a new cognitive theory, which although unaware to its existence in our real life teaching environment, in silence and slowly, has been introduced a couple of decades, ago, i.e. after the fall of communism.

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<sup>41</sup> Bjorklund, D. (2018). "A Meta theory for Cognitive Development (Revisited)". *Child Development*. p. 201-211.

If closely looked on, it has had its implications in the whole learning process at all levels of education. Based upon what was stated above, we may say that the bridging process from behaviorism to cognitivist, and after on, to constructivist learning, should not be seen as an epistemological leap or some kind of progress made by the learning psychology, but if carefully analyzed on the field, it reveals facts which qualify it as a way of transforming and changing the traditional education. This can be qualified as a revolution of the way of teaching as a complex process, affecting the way how we interpret and describe the new trends of teaching. These are the new trends of theoretical interpretation during the teaching process, which slowly undergo an evolution.

Departing from this fact, Cognitive Constructivism, results to have a deep and crucial recognition to student's learning, which as such, has resulted to turn traditional teaching perception and definition towards a fully remarkable change. This qualification of the new approach is already generating a deep effect on the overall teaching practice, in particular with the undergraduate English Language and Literature students. Given these learning entourage, researching on the phenomena, with the course of the time, we may notice the fact of full introduction of the constructivist theory, as much as we need, and consider it may be of use to the students.

Following this teaching philosophy and teaching practice this teaching blend, has led to systematic studies which at great amount, produce rich research results. The researchers conclusion (me as the author of this paper), is that constructivist approach in the teaching theory, proves to have a pretty important class and individual guiding effect my teaching, as well as other lecturers' teaching attitudes, leading many of us towards a new and fundamental education reform. Furthermore, this research endeavor aims to verify that the implications of constructivist teaching theory in Undergraduate education level teaching are seen as theoretical additional phenomena which get the learning closer to the learners.

## **1.1. Research Methods and Hypothesis**

### **The Origin and Place of Constructivism in Teaching Theory**

As we all know, all theoretical thoughts have their origin, foundations, background and their continuation. The case of constructivist learning theory has pretty much the same status, and as such it does not make any exception whatsoever, as its origin, in general is known to involve both psychology as well as philosophy. In order to have it better clarified, we must depart from the fact that the origin of Philosophical Constructivism, seen through the prism of a newly constructed thought, nowadays to scientists and young researchers, represents a new way and concept of the learning philosophy. In this regard, we may say that some researchers depart from the fact that the first constructivist Socrates, who founded the concept. Furthermore, his famous oath of "Hippocrates", has an eternal value, which as such it has always been seen as an efficient model for constructivist teaching.<sup>42</sup> On the other hand, Kant's studies dealing with the integration of rationalism and empiricism in the teaching process reflect and give a stronger input to constructivism.

This can be explained by the fact that according to him, and to his definition of the phenomenon, "a subject cannot directly open toward the external world, i.e. to the behaviorist influence in the teaching process no matter whether it is of a formal or informal model. Given this

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<sup>42</sup> Dung, Y., (2008). Constructivism teaching theory and the implication. Journal of Shenyang College of Education Press. p. 22-30.

key approach to the learning process, the possibility relies in the approach which involves the internally constructed basic cognitive rules, the momentum which generates in the subject the action of organizing and coordinating the learning experiences in a “larger acquisition picture” , which as such usually develops and strengthens further on the knowledge quantum.

Given this, at a later stage, in the process we encounter cognitive activities which encompass and activate the transfer of structuralism methodology, which as an additional value, traces the way towards the so called post-structuralism, in the learning process input.<sup>43</sup> Given the chain of functionality of the elements stated above, we may conclude that during the continuation happens the break or the ruling out the status of rationalism from the process.

## **1.2. The Psychological Traces of Constructivism in the Teaching theory**

Seen from the psychological point of view, and in order to shoot a clearer picture to the research and learning advancement and development of these phenomena, we must not forget the input given by Vygotsky and Piagét. Both of them, although from different departing points, support and develop the experimental learning theory. Both of them, in a way, strengthen and put the focus on concerns related to generation and reformation as well as modeling and designing of the concept of experiences. In this particular case, the famous Piaget, has non to match his status of being the champion of the modern constructivism. We say this, as it was him, the one who, at the early 70-ties of the last century, integrated decisively the so called “concepts of assimilation & conformability in the theory of learning.”

His achievement is the establishment of the balance in the process as whole, which he has managed to implement via recognition means and actions oriented towards the subject, which is the point when the subject affects the object by his performance or as it is known scientifically “object performance” in language learning terminology. Practically it can be described as the action of the recognition structure, which reflects the interaction of a stable balance between both, the subject as well as the object. Always, based upon psychological ideas, Piaget considers that all knowledge quantum, in one way or another, has the so called “external origin and students’ “, cognitive development to the material taught, is usually actualized via a natural way, in the process of receiving knowledge, the learner is offered.

On the other hand, by the end of the 20th century, the Russian Vygotsky, came up with a new discovery which is related to the historical foundation of the base, which would enable the engineering or the formation of modern constructivism.<sup>44</sup> According to Vygotsky’s discovery concerning the phenomena, the learning began to be seen rather as a social construction, whereas on the other hand, the individual learning is seen to be put under the control and the influence of some kind of historical as well as social background of the learner, whether it was a child or an adult.

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<sup>43</sup> Jeng, Z., (2007). Implications of constructivism theory on teaching. Research on Education Tsinghua University Press. p. 212-225.

<sup>44</sup> Matthews, M. (2000). Constructivism seen through Science Education: A Philosophical Examination. Dordrecht: Springer Science Press & Business Media. p. 212-225.

### **1.3. Some Key Points of View Concerning Constructivist Learning Theory Seen From Cognitive Aspects**

The fact that knowledge as a source of information and a fertile field for conducting research, it in this context has to be seen only as explanation and assumption, aiming to decipher the Constructivist Learning Theory (CLTH), but it never should be seen as the ultimate explanation for all issues related to its nature. Furthermore, contradictorily, as usually happens with the development of the human kind and its alienation from the old fashioned ways of approaching things, it will be left aside and eliminated, and as consequence, new assumption concerning research related to the issue, will appear on the research surface.<sup>45</sup>

This can be explained by the fact that researchers but scholars and students dealing with this kind of topics, are familiar with the fact that knowledge simply is not able to summarize the rules of the world in a precise way! Furthermore, in the practice of teaching and learning, we face the realistic fact that we cannot directly apply the gained information or the knowledge to certain problems, whenever we would like that to happen.

### **1.4. Issued Related to the Impact on the Learning Process**

As for some long time period, the Learning is being seen as a complex process throughout which, the individual learners, build and construct their cognitive structures. The term “construction of the existing structures in our mind” is an action of a multifold nature. It may be defined as initiative action, as a conscious, as well as a self-organized and simultaneous recognition of things we know on our own way. In other words, in the practical context of learning, it may be defined as “an interaction” which moves forth and back between the subject and the object. This ‘double binary movement’ during the learning process, represents the construction of the “Knowledge Operational Framework (KOF)”.

In this regard, it is crucial to note that this knowledge building operation, is step by step, completed when the learner uses h/h interaction of active learner, combining the old information and the new one at the same time. In these learning circumstances, any pure external stimulation involvement, whatsoever, seems to be useless, thus meaningless. This is the point, in which we have now other choice, but recalling the momentum when learners themselves, codify, process, as well as construct, their own comprehensibility to the new information to which they are exposed, which in the theoretical aspect may be defined as the point of a learning based upon clear understandings. A learning which works on their earlier learning experiences, involving both innateness as well as behaviorist activities), may be defined and called a real learning.

## **2.1. Data Gathering Part**

### **Implications on the Learners i.e. the University Students**

In order to be able to explain this effect to the process, we all as researchers and professors, should be aware of the fact that students usually start attending respective classes, cherishing the feeling that they have some previous knowledge, upon which using generativist constructivism,

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<sup>45</sup> Nula, F. Ifrziak, G. (2006). Philosophy, Science, Education and Culture. Springer Science Press & Business Media. p. 222-128.

will up build their existing rich experiences. In order to do this, they usually recall their thoughts and opinions, recalling events from the daily life, which in some cases, in one way or another may be even more complex events referring to complex universal issues. But again, the fact that learners, i.e. students, in particular cases or circumstances, are not enough familiar with some of the issues, and as well they do not have previous experiences, they find the way to acquire knowledge.<sup>46</sup>

They do this by creating or constructing special explanations or descriptions as well as assumptions, which as such, usually are based upon their earlier experiences, as well as the cognitive abilities they involve to solve the learning barriers and issues which they encounter during the process they are exposed to. Although this, by some scholars and researches who investigate these issues, may be seen as not enough clarified, they should not see it as an illogical guess, assumption or perception, instead, they should perceive it as a logical assumption. This is an assumption which must be based on previous students' learning experiences.

For this reason, the process of teaching, by both, teaching theoreticians as well as practitioners, must identify and take into consideration students' earlier knowledge and the experience, from the perspective of the point in which the newly gained knowledge occurs. This is the momentum, when they should introduce their students, to the complex processes of generating new knowledge structures, which have to originate from the earlier acquired information or knowledge. As in this paper I'm discussing a rich empirical database, analyzed via a detailed and functional comparative method, to some of the readers or the students who are not enough familiar with describing the continuation of the process, my description how it works in the theory of learning, seems vague and enough unclear.

This conclusion has been noticed and explained by the fact that to the major part of them, in particular to those who attend the course Research Methodology in ELT and Linguistics, (7<sup>th</sup> semester) the assimilation of a Project outline and the content of each section of the project, may seem clear, they are not able to explain theoretically, which was the way they followed to reach this point of acquaintance to the issue. In order to get this clearly explained, below I'll give an example which describes the way the learners act when it comes into question the theoretical part of the learning process to be comprehended.

## **2.2. Example From Real Life Environment**

In my case, as their professor, I usually present a class problem to measure the length of the "Project outline" they are supposed to submit at the end of the term as a seminar paper. To avoid this overall confusion among these students, I've selected the approach of introducing the problem to them seen from the technical aspect which involves the five stages of development of a project construct. Doing this, being aware they have this previous knowledge what are these five stages of the project outline, I release them allowing them to reflect and to construct their own methods of measurement. This inventive constructivist cognitive method based on their choice, strengthen their freedom to introduce the project draft step by step, of course starting from the very title to the conclusions they have envisaged.

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<sup>46</sup> Lave, J., Wenger, E., (1998). Advantages of Situated Learning: Seen through Peripheral Participation. Cambridge University Press. p. 175-186.

In these operating circumstances, the attention and the value are placed on the process of learning, seeing it exclusively via the experience and interaction between the earlier knowledge and the new one they are exposed at a given moment. The learning results occur at the moment when the students gain exposure to a wider frame of actions, where they implement their own learning and working perspectives. Given this, the construction of knowledge which is based upon a comprehensive view of learning, is the one which works at best with adult learners, in this particular case the UG at University level. In the modern learning theories it has been defined as a “Student-centered learning”, and as such it has been qualified as the core learning technique which targets the essence of the information or knowledge, planned to be transferred to the learners.

### **3.1. Data analytical Part**

#### **Some Implications Concerning Constructivist Theory on Classroom Teaching with UG Students**

As stated earlier, as lecturers of respective courses, we are familiar with the fact that constructivist way of learning seen from theoretical perspective, to many well-built professionally teachers and lecturers, is a way towards a clarification of a teaching process based on steps which put forward some fresher and newly deciphered explanations which shed more light to the functionality of the process itself. To get closer to this theory, in one way or another, we as lecturers and the students on the other side, welcome it as a way to ease the process via theoretical explanations as to how teaching works best. This means that we always have to stick to the fact that we must offer more humanism cares, to the learners, aiming this way to create a more favorable and attractive teaching milieu, for all students.

This explanation has to be seen as a way aiming to put to work by emphasizing this type of instructions, and see them as initiatives leading to stronger and more efficient interaction in the teaching process.<sup>47</sup> On the other hand, making the impact stronger, students have to focus their cognitive constructivist activity towards of “grabbing new knowledge.” This action usually is based upon content exploration, as well as cooperative learning. Both of these steps must be based on cognitive (earlier) knowledge and experiences, and finally result joined by means of interactive actions.

Given all these components and walking steps, to professors and students following the TREE concept of teaching, learning and research, via “cognitive ability”, in the teaching terminology, is known as strengthening of the process which is led by well-defined aims to continuation. In other words, it means that this way professors, offer UG, as well as MA students, a model of an efficient and positive technique, which defines and strengthens teaching and learning values such as; the attitude, the affection as well as the habit in the way how they percept learning as a complex process.

Now, it is clear that the above stated new ideas, have already resulted with constructing and completing even more concisely the Generativist Constructivist model of teaching theory, which is more and more seen as a “cohesive teaching and learning system (CTLS)”, which as such seems to give teaching a boost forward, and making it inseparable with the teaching practice, opening this way to further research action which cannot do without teaching theory as an alternative to

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<sup>47</sup> May, G., (2007). Teaching study on the reform of UG education. Future and Development. p. 166-169.

the TREE concept. Cognitivist constructivist theory in teaching, have taken hold and have become key technique in many parts of the developed world, whereas in our country, (focusing my home institution), this agile concept, in particular cases, where teaching is predominantly of the model “research based”, it gives results in terms of focusing as well as improving the overall efficiency of the students comprehensive scale.

Seen with the eyes of a researcher, we must be able to see the today’s teaching process as undergoing reforms, which are introduced not only within the teaching theory, but on the professors or teachers views as well. This tells us that the traditional teaching, where we as lecturers, present, talk, analyze, explain, in many cases students find it as an arid mode, which from time to time becomes annoying to them.

### **3.2. What Stands on the Start of this Model of Teaching as a process?**

This is an issue which we all as teachers, whether we wanted or not, face it from time to time. The issue which bothers us in general is the one related to the way how this concept works when it comes to its interactivity with the students’ previous knowledge, their way of thinking and the experiences they have gained, as well as issues such as the learning habits, which we usually consider in order to make the ground clearer as to how much theoretical Constructivist teaching approach we have to invest.

This can be clarified, by New Cognitive Psychology Approaches (NCPA), which has resulted to prove or show that learning is an interactive process of new knowledge and previous or old knowledge, accumulated via cognitive activities of our brain. It is so, because we all are familiar with the fact that the old knowledge we have accumulated, as well as the techniques, we have done that, are craved in our memory system towards enriching the learning in general. Given this, they all are part of an important internal set of conditions, which found in the schemes of internal brain interactivity, create study and learning impact.<sup>48</sup>

The relevance of this conception, to some theoreticians goes even to further and say that if we would put all educational psychology shrank into one single principle, and then we would conclude that the only important factor affecting learning quantum, is the fact what the learners have previously known concerning a given subject or topic. Being familiar with this discovery, the teaching process has no other option rather than being solidly efficient.” It is the point when we as linguists and lecturers, face the verified fact that Constructivist Learning Theory, is the one which in a clear way pictures the big picture of this theory in a more detailed way. In the practice of teaching, this imposes the need of a previous analysis of curriculum standards and textbooks, which after being closed as an analytical step towards better teaching and learning, fully confirm the teaching aims and objectives we have set with the syllabus of the respective course.

### **3.3. Implications on Changes Concerning Teaching Habits, From Traditional, to the Ones Leading Towards Communication improvement**

As we all are familiar with, in traditional way of teaching, professors and lecturers, seen from many aspects of the way they do the business, have the comfort of enjoying the independent and authoritative position. It is a teaching entourage which gives us the glimpse of teaching without

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<sup>48</sup> May, G., (2007). Teaching study on the reform of UG education. Future and Development. p.122-130.

asking for students' wishes and preferences, which is teachers, in a way do not regard neither respect nor on the other hand, care for students what it needed to be done in order to make them feel better and fitter into the acquirement process of the new materials.

This rather selfish and authoritative attitude is known to have led to frictions and misunderstandings even gaps, between teachers and students, which in cases at UG studies, they have rarely but obviously have led to realistic conflicts. These are sad phenomena, which have been following teaching with the course of the time, and in many cases in order to express the desperation of the parties in the conflict, many researchers and professors have commented the situation, sometimes even uncomfortable for further development.

In this regard, I'd quote an ancient teacher to have said: "People with more knowledge are teachers and with morals are examples."<sup>49</sup> His quotation means that we all as teachers, must give more respects to students, give them the word as much as possible, giving them chances to express their ideas, thoughts and productivity, which as such are steps which build up trust within them, both as individual as well as a target group. This level of cooperation raises the level of interactivity in the teaching process as one of the key elements to reach aims and objectives in the process. Furthermore, this strengthens the relationship between these two key subjects involved in the process.

## **Conclusions:**

### **Issues Related to Creation of a Better 'Teaching Entourage'**

Cognitive Constructivist learning theory, is known to strengthen the requirements towards "plunging into the depth of the content we convey" to learners. In the practical context of teaching and learning, in real life environment, it may be seen as a process where we work and the students learn in real or half- real learning entourage following the model of non-structural learning. As a phenomenon, this practical explanation unveils issues reflecting acquainted non- structural knowledge, based upon the impact of the gathered cognitive data of students' acquired in the previous learning experiences. Furthermore, given that traditional teaching is more focusing structural knowledge model of learning (free learning), as such it avoids or eliminates the non-structural knowledge, which is the students' experiences gained in real life environment of learning.<sup>50</sup>

This clear distinction between the two approaches, is contradictory in the sense of juxtaposition on one to another, but seen from the perspective of the outcomes they assure with the learners i.e. UG students, they in a way "build bridges of cooperation and transfer of knowledge", which combines both sources, i.e. the new knowledge as well as the knowledge the students have acquired at earlier stages of their learning.<sup>51</sup> This interactivity can be described as the propeller which strengthens the students' ability towards an efficient learning problem solving.

And to assure even better that this is the way we should consider and strengthen, as well as summing up these phenomena, we can easily formulate the final conclusion concerning Cognitivist

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<sup>49</sup> Piaget, J., (1971). *Psychology and Epistemology: Towards a Theory of Knowledge*, New York: Grossman Press. p. 123-130.

<sup>50</sup> Piaget, J., (1971). *Psychology and Epistemology: Towards a Theory of Knowledge*, New York: Grossman Press. p. 201-222.

<sup>51</sup> Steffe, L. P., Gale, J. (2008). *The Process of Constructivism in Education*, Routledge Press. p. 50-55.



constructivism in the teaching and learning theory nowadays has become much debated issue among the TREE.

This means that as a descriptive process based on qualitative methods of research, it works as a machine which both from inside, as well as from the outside perspective, reaches success in terms of the creation and advancement of many new thoughts and views, which all together are defined as climbing the scale of creativity in learning between all the attendees.

One last thing to say, is the fact that this scale of theoretical analysis concerning language acquisition and learning as a process, when it comes to language learning, is more meaningful and professional with more experienced teachers, than new freshmen teachers, which barely have a couple of years of experience in the complex field of teaching. This conclusion might be detected by the fact that experienced teacher, produce their own theoretical practice and implement its fruits in the process, by an efficient so called “Aggressive Cognitive Constructivism (ACC)”, which may be explained no other, but as originating from the experience they have gained across the long years of their involvement in the process of language teaching an acquisition.

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