

Vygostky theory and the reading stimulation on children in preschool age, using the computer as a didactical tool (1998). 4th International Conference on information, Systems analysis and informatics. Orlando Florida. (Paper presentation)

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Abstract

The present work is an investigation project in development. It is an experience that we come implementing in the nucleus of the central University of Venezuela with headquarters in the city of Barquisimeto, Estado Lara.

Starting from some concepts managed by the psychologist-educating Lev Vygostki that base their theory of the human development or their social-historical focus and their incidences on the education, such as; I develop and learning, half-filled action, social interaction, cooperative learning, area of next development in the children, among others. We have been interested in the application of this theoretical mark in a concrete reality of learning with children of preschooler age –4 years -, in computer science laboratory using computer as mediator instrument of learning.

In this sense, leaving of interpreting the learning concept and their such context which as it manages it the Vygostkiana theory, we have designed and carried out a first experimental pilot test where we try to check that it is possible to stimulate the area of next development in children of preschooler age in the reading area and in the formation of scientific concepts, using for it certain educational, previously evaluated software and adapted to the age and respective content.

In this first phase of our work we subjected to theoretical consideration the approaches which base the learning concept according to Vygostki, in way of assuming their posture like own. Also, by means of an estimate scale we achieve an instrument to evaluate the educational software for preschooler to use in the experience, it stops later on at one time to apply it to a sample of children during two sessions of 45 minutes each one of 4 weeks.

We understand perfectly the limitations of a work as which are devoted to make, the complexities of the theory of Vygostki they represent an interpretation challenge and mainly of their dialectical re-adaptation at these new times that we live, the preliminary results of the beginning of our investigation open us however, the possibility to be able to understand with more empirical and conceptual objectivity the effects that could have some elements that conform this author's perspective social-historical on the education and the learning.

Keywords: preschooler education, calculation, social-historical theory, educational software, learning.

1. INTRODUCTION

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Lev Vygostki bases its theory of the human development and intellectual in three basic elements; in the instrumental thing, since the man duty to be conceived as an active being that operates on its means, transforming it by means of the action of the instruments; in the historical thing, since the changes of the societies historically speaking necessarily bears to changes in the human nature and its behavior; and in the social thing (cultural) for that the man like being social interactua permanently in a mark of social relationships among people. In definitive, according to Vygostki, all human activity is socially half-filled, historically conditioned, because this activity she/he is born and it is developed in a half social one that is permanently transformed by historical changes.

In this social-historical perspective, the teaching-learning processes are that you observe them under an approach of social entirety. In the case of the properly this learning, it is worth.

To point out that this is not more than the result of the paper that you/they complete the cultural tools in the permanent elevation of the levels of intellectual operation and the individuals' development. In this sense, the development of the expression, the language and the thought of a boy, among others of their capacities, are the product of a process of social interaction, first to inter-psychological level and then to intra-psychological level.

In our work, leaving of interpreting the genetic-experimental method used by our author, we develop an experience starting from natural and spontaneous conversations, as well as of structured games (educational software) with 4 year-old children, with the

interest of discovering the real possibilities to stimulate certain areas reading cognitive and identification of signs and symbols, through a process of social interaction with objects and mediator people of course immersed in a historical and culturally predetermined educational reality.

The preliminary results of our brief experience, stop us the restlessness to deepen and to make a much completed investigation work, trying hypothetically with it to demonstrate that the theory of Vygostki if it is possible to apply it in differentiated educational contexts and modernized, and especially in the preschooler level.

2. THE DEVELOPMENT.

Some theoretical foundations.

To carry out our work we saw each other in the necessity of assuming some considerations that base the theses and principles of the author's theory in reference. In such a sense, we assume the approach with Vygostki that there is not independent world of the material reality, physics and perceptible, everything is born, it happens and she/he becomes matter, in consequence, sensations, emotions, thoughts, production, etc., she/he only can and it should be referred to the analysis of biological realities and of conduct. The maximum expression that organism and half is closely related dialectically, allows to understand each other that the man transforms the nature, as this, in turn, it transforms it to him in a process of permanent interaction. Of there that from the psychological point of view our author indicates us that organism and half can not be studied scattered, and that on the contrary it is necessary to observe them in a process of historical interaction to be able to understand the integrity of its composition, it indicates, for example, "that the behavior can only be understood as the history of the behavior."

In this perspective, for Vygostki the activity of the humans is socially half-filled and historically conditioned, since these activities are born and they conform to in social spaces that are objects of permanent transformations.

According to Luria (1978), pupil of Vygostki, the basic components of the focus of this theory can observe it starting from the following considerations: to one of the characteristics of the human feature is the use of the instruments in their transformation

process; the tools and the signs represent the material and physical means with which the one acts on the atmosphere, the tools represent a half instrumental one classic, they can be a hammer but also a computer. On the other hand, the signs, although they don't act about the external reality, if they make it about our internal reality, transforming our mental capacity, the language, the symbols, the numbers, etc., they are systems of signs, and these they are roads to think. B) although the tools and signs, besides representing a historical inheritance of the men, allow a bigger intervention of this on the means, it seems appropriate to think, then that the historical changes that affect to the societies, also affect the production systems and the culture transmission, generating social, political and spiritual processes differed by certain historical moments. C) In so much cultural or social theory, Vygostki, makes emphasis in the human being social paper and its effects on the construction of processes psychological superiors. From their optics, each person when arriving to the world meets with other people and with a complex universe of things. By means of a mediation process and social interaction that new member of the society will be competent (and maybe better than other) in the measure that he interprets the reality correctly. This way we share the interpretation of Luria, when she/he affirms that the theory of Lev. S. Vygostki is instrumental, historical and cultural (social).

Next, let us pass to revise some generalities of this theory about the approach on the education and especially of the learning concept, fundamental element used for our empirical work.

As we assume the learning concept.

For some theoretical of the learning (Pereira,1987, Pozo,1994), the theory of Vygostki is to locate it in a organist conception or in any event in a variant of this. Before the division of the idealistic psychology and the naturalist, necessary era to elaborate the theses of a scientific psychology that was based in an integrative reconciliation on the base of a dialectical conception of the relationships between the physiologic thing and the mental thing, being opposed, in consequence to the approach of reducing the learning concept to a mere accumulation of reflections or associations between stimuli and answers. Vygostki insisted that learning is to see it in a mark of global analysis and not for statement, qualitatively instead of quantitative, conscious and not only automatic. That is to say, the learning should not only be based in associative experiences, but rather it is necessary to consider the existence of features specifically human as it is the case of the conscience and the language that can not decrease to the associative thing that you/they are not unaware to the psychology, but that neither they can be studied backs of the physiologic stratum or mechanic.

The activity mediated by instruments, is the fundamental element in development intellectual's process and of the learning. Two lines, the natural one and the cultural one

that cross reciprocally in the course of the individual's development condition it socially. For example, parodying our author, a boy in their development early (before the two years) she/he works with the basic elementary processes of their thought, using the tools that it provides him the atmosphere in natural state; the primary perception, the involuntary memory, and the pre-verbal thoughts, among other basic elements are regulated by the environmental conditions that it surrounds them. However, the processes mental superiors that will allow him the symbolic prosecution with high levels of abstraction and where they begin to be developed the imagination and creation, the thought and the language, the memory and the logic and the auto-control, they are regulated by the line cultural deliberate product of a process of social interaction.

In consequence, it is clear the relationship that exists between development and learning, in this respect (Vygostki, 1978), it points out" **... the essential feature of our hypothesis is the notion that the evolutionary processes don't coincide with the processes of learning. On the contrary, the evolutionary process goes to tow of the learning process... We postulate that what believes the Area of Next Development is their essential feature of the learning, that is to say, the learning wakes up a series of internal evolutionary processes able to operate alone when the boy is in interaction with people of his environment and in cooperation with some fellow man.**" She/he adds that **"... from the beginning of the human life the learning this related with the development since is a necessary and universal aspect of the process of development of the culturally organized and specifically human psychological functions... the one on the way to the human being development is, partly, defined by the processes of maturation of the organism of the individual of the human species, but it is the learning what facilitates the awakening of internal processes of development that you/they would not take place if the individual is not in contact with a certain cultural atmosphere."** To conclude, according to Well (1996) **"... the development vector and learning of the fellow would go from the exterior of the subject to the interior, it would be an internalization process or transformation of the external, social actions, in internal, psychological actions. The fundamental law of the acquisition of the knowledge for Vygostki, would affirm that this always begins being object of social exchange, that is to say, it begins being interpersonal it stops next, internalize or to be made intra-personal."**

In synthesis, the relationships that are happened between development and learning and their social-cultural environment, allow us to point out that we assume the approach from the author when declaring that both concepts are in she/he becomes intimate relationship, the individual she/he acquires their learning worked by external mechanisms, action impelled by a Cultural context that is permanently fed by the activity generated by the psychological operation.

Now then, another of the concepts used in our investigation and that they represent the relationship genuinely up outlined it is the noted one for Vygostki like Area of Next Development. In their opinion, the area of next development "it is not another thing that the distance among the real level of development, determined by the capacity to solve a problem, and the level of development potential independently, certain through the resolution of a low problem the guide of an adult or in other more capable partners' collaboration". (Vygostki, 1978). Therefore, it is something like that as the distance that a person should travel (boy) among what already knows and what can make if the means provides him and she/he helps him with the resources that she/he needs, understanding each other that the resources are acquired through the social interaction with adults or partners that help him psychically to internalized new functions, data and information or to restructure those that she/he already has. For example, front a problematic case a boy can show different levels of abilities, understanding etc., depending in the way of making this task. This is what Vygostki calls "level of current development", that is to say, what the boy is able to make by itself. This resolution capacity independently of a problem it is what our author pointed out as the final products of the development, it is worth to say, the functions that have already matured in the boy. Now then, if this boy works a problematic case with other children with more abilities that those of him or with adults, they are evidenced, according to our author, executions to solve more complex problems, and this is it that the flame "level of development potential." This level or potential development is defined as those functions that they have not still matured, they are in maturation process and that through the stimuli they will achieve at one time certain to build a development mental superior prospectively.

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With these mentioned approaches we can postulate that what believes the Area of Next development is essentially the learning. It is worth to say, it is the learning that she/he wakes up in the boy a series of internal evolutionary processes in him that you/they are able to stimulate them and to operate interactively with other people of their environment or in cooperation with them. Then, once that the boy appropriates (to internalized) the product of these relationships, this he becomes partly of him stimulating it to evolve independently.

Starting from these relating ones theoretical we try to establish methodological relationship with an investigation experience where, by means of the use of an educational software and a field observation we could infer the possible consequences in the cognitive stimulation in a sample of 4 year-old children.

3. THE METHOD AND THE METHODOLOGICAL.

We systematize through a field observation and a bibliographical revision, a characterized simple methodology of work in the following way:

A group of 10 teachers of basic education during two months read and we discuss about some fundamental concepts of the theory of Vygostki, such as, the social-historical context in that you development the theory, the conception of area of next development, the mediation in the learning, the development and the learning, the formation of spontaneous concepts to scientific, the cooperative learning and the social interaction. These they allowed us, on one hand, to select and to structure a theoretical orientation base for the investigation work, and for other, to get ready to assume our list of mediators and observers when the work with the children.

We select several educational software with contents on deductions, reading, numbers, colors, etc. To the software of ALPHABET AND COLORS of UMI, READING and PRONUNCIATION of the Moppets, that of REASONING of Thinking Thing's, and that of ALPHABET AND GEOMETRIC FIGURES of Chimera. To this software we apply him an evaluation instrument, we compare it with a list that included the areas like: the presentation, the structure in the content, the evaluation or reinforcement of acquired behaviors the didactic aspects that stimulate the cognitive, the psychomotricity and the partner-affective thing. The general approaches for their selection were centered in the fact that they were in the category of good and regular, having ponderation in a scale of 100% from 50 to 95% respectively.

We work in the study pilot with 4 children during 2 weeks and with 8 hours of 45 minutes each one, for a total of 340 minutes. The characteristics of the children were the following ones; 4 years, second preschooler level, callow with the computer, without psycho-motrice apparent problems. The work with the computer was individualized, accompanying the boy during the whole process a mediator between him and the learning (teacher), an observer (teacher), besides the computer like instrument.

We design and we apply a guide of observation of the boy's activity in the handling of the software, from the point of view methodological two questions they interested us in the application of this, for an it leaves, to determine a point the entrance behavior from the children to the laboratory and the use of the machine, specifying their interest and moving reactions. Later on, in the second application of the instrument, to determine the entrance behaviors and exit in the later visits to the laboratory, trying to specify with it the advances obtained as for the aspects gotten up with the use of the software and the stimulation of the area of next development in the areas mentioned, also to observe where she/he was necessary to make the reinforcement of the respective learning for next opportunities.

When concluding each session, we use the strategy of sharing the learning, to such an effect, we converse in group (collective of learning) with the children so that they will express and they will comment about their experience lived during each session. With these sessions we observe some difficulties that had the children to follow some sequences and demands of some software, but we also specify the abilities in the handling of the keyboard and mouse, as well as the progressive identification that left having of some generalities of the structure of the computer. We met their particular interests on the games and their future demands. In definitive these sessions allowed us a re-encounter with the entirety and the context in which the experience was developed, but the most important thing was the fact that allowed us to socialize and interact the obtained learning.

Lastly, we wanted to make reference and to be ahead to one of the methodological conclusions of our study. Although we believe that we were a point far from having applied the genetic-experimental method used by Vygostki in their studies, we believe important to point out that we share with him the three fundamental characteristics of this method. First, the method and their results should give more value to the analysis of the processes in experimental situation that to the final results in itself. We observe this way in our experience that the children after certain domain of the software looked for alternatives to repeat the exercises in another way, in a same way when asking the mediator the why of certain situations they allowed to see the boy's interest in discovering a lot beyond what the software presented.

In second place, we believe in the necessity that the products of the investigation should be more explanatory than descriptive, for example, we are of the approach that the language that the boy can acquire in experiences like ours, they should be products of the socialization (where the school would have an important paper), and non consequence of the accumulation of its egocentric language or interiorized.

In third place, "to study something from the historical point of view means to study it in their process of change" (Vygostki,1978). Experiences of this cut, we should observe them starting from the context of change that you happens so much in our society, like in the level preschooler study object, and much more specifically in what is aspired from the point of view of the learning with the children of this age.

4. CONCLUSIONS AND PERSPECTIVES.

The body that sustains the theoretical bases of the positions of Lev. S. Vygostki, about its conception of the human development and the learning, represents a considerable contribution to study and to investigate on the problems and developments in the education.

We observe in our investigation work, important changes happened in the children that attended computer science laboratory, a qualitative advance in the learning from the first session until the last one. This advance was differentiated according to its personal characteristics, as well as conditioned by the degree of difficulty presented by the programs. In fact the children were able to reconstruct their spontaneous concepts about the computer, their programs and some contents of the matters seen. In this part it was important the list assumed by the mediator that through the verbal language and the established communication with the infant was able to improve the understanding of these in what was observed.

A process of social interrelation was propitiated, not alone with the mediator that directed the communication process, but also among the same children, where the trust, the opening to the I dialogue, etc., they allowed that these they will manifest in each session bigger spontaneity, creativity, ability in the handling of it schemes it and communication with their couples and speakers.

With the use of the contents of the software we aspired that we advanced more in the handling of the seriation categories, identification of numbers, colors, differentiation of figures and forms, determination of sounds, location of spaces and laterality, etc. However, we notice that maybe it was starting from the third session where these aspects mentioned up began to be managed by the children with certain property, overcoming to the initial limitations that it imposed the handling of it schemes it and the adaptation to the work.

Regrettably when the study pilot finishes, it is when to the children we observe him the handling of the contents of the software, era the moment when they begin to show dexterity in the handling of the seriation, the use of syllables, sounds, colors, numbers, to associate, etc. We can affirm with the results of this preliminary study that the four children acquired a level of knowledge above their study partners, they accelerated their learning process and undoubtedly the beginnings were given to have a superior level of learning with regard to their development; the handling of the computer, the trust and apparent tranquillity in the process, the verbal communication and asking the reason of the things permanently seen, the verbal exchange with their couples, the positive changes in the acquisition of the dexterity, etc., they are good indicators to deepen in the study.

To conclude we want to reiterate that our investigation is alone a rehearsal pilot, because, we consider that this work this to be made. Much is the search that it is necessary to carry out about the necessary understanding that it is necessary to have on the theory of Vygostki, their complexity and until their lacks –due to some critics -, it is

a challenge to deepen in their conceptions and to put them in practical. However, we write down ourselves with those that point out that the force of the theory of Vygostki resides in its evocation power, in its capacity to suggest investigation lines and different forms to approach the different ones problematic evolutionary-educational and in definitive to already associate the focus social-historical to other theories consolidated, as they are it the piagetianas and those of the prosecution of information, where we locate our work.

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