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**SOME GUIDING MARKS FOR UNDERTAKING  
CONSTRUCTIVIST LEARNING AT PRESCHOOL AGE**

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**Abstract**

It is already known that the matter of learning has been analysed according to various theoretical models of reference for the field of psychology: behaviourism, cognitivism, humanism and constructivism. These interpretational models have highlighted the state of theoretical and practical research at a given moment, focusing on various principles regarding the processuality of human learning, as well as on other aspects of learning. Unavoidably, this drew both adepts and criticism. With the passing of time, these theoretical trends have had the effect of emphasising certain rules in the comprehension of the learning process, of the didactic strategies which allowed varied references to the child's potential. Starting from the research carried out by Piaget, Vygotsky or Bruner, the Constructivist paradigm approaches the learning process in terms of an action of building knowledge for the child. Along these lines, our paper aims at highlighting the importance of promoting the Constructivist principles at preschool age. Focus is laid on the possibility of activating learning through children's experience, through their motivation for discovering knowledge. The results of the present investigation reveal that promoting teaching strategies based on learning through discovery and problem-solving prompt children to rearrange and restructure information by capitalizing on previous acquisitions. This aspect becomes reality as soon as the child starts going to kindergarten.

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## 1. Introduction

Generalist and superficial reference to school stages may erroneously induce the idea that preschool is a transient stage without major implications on the further development of the child, all the



more that it is not circumscribed to what we term compulsory education, and that the activities in the kindergarten are carried out with the help of the didactic game, and learning is not an activity the child is aware of. In truth, things are anything like this, quite the contrary, as a matter of fact. Preschool age has overwhelming importance for children's physical, cognitive and social-affective development. It offers challenges for the preschooler by enlarging their manifestation space, by making them interact with new people and, naturally, by providing them a wide area of information in the form of knowledge. The fact that at the age of 3 the preschooler has already acquired language (which normally occurs around 2 years) opens the opportunity for the preschooler to ask questions and be given answers regarding everything that seems to be of interest at that age.

Preschool is an age when family holds a prevalent role in the rearing process, but the family's efforts are now focused on fulfilling care, nourishment and healthcare. Although family also has an educative function, this is rather diffusely exercised. An essential role in this respect is that of the kindergarten, as an institution specialising in educating 3 to 6-7-year old children. The planned, systematic and coherent character of kindergarten activities ensures the bases for the psychic development of the pre-schooler.

Preschool education is inscribed into the wider concept of early education, together with pre-preschool education. Consequently, extremely relevant are aspects which pertain to the particularities of the learning process at this age, to the quantity of information acquired and, especially, to the way in which it is delivered to the child and to the way of capitalizing the preschool curriculum. The objectives of preschool education come under the purposes of early education (0-6/7 years):

- To freely, integrally and harmoniously develop the child's personality, according to his/her rhythm and needs and supporting his/her individual and creative formation;
- To develop the child's ability to interact with other children, with adults and with the environment in view of acquiring new knowledge, skills, attitudes and behaviour;
- To encourage the child's explorations, exercises, attempts and experimentations as autonomous learning experiences;
  - To help the child discover one's own identity, autonomy and develop a positive self-image;
  - To support the child in acquiring the necessary knowledge, abilities, skills and attitudes useful for their entering the school system and for their entire life (cf. *Curriculum for early education of 3 to 6/7-year old children*, 2008, p. 9).

Through the contents of the activities they carry out, kindergartens aim at the physical development of the child (fine and gross motor skills, senso-motoric development, personal health and hygiene), the cognitive development (logical thinking, solving problems, acquisition of mathematic knowledge and skills, knowledge and comprehension of the surrounding world), language and communication (including the bases for reading and writing), the socio-emotional development (skills for interacting with the others), as well as the development of the learning abilities and attitudes (curiosity, initiative, creativity, persistence in carrying out an activity). These acquisitions represent an image of the schooling aptitudes, being real predictors for the ulterior acquisition of knowledge and skills. That being the case, we consider of utmost importance the manner in which the learning activities in kindergarten are

designed and carried out, the extent to which they meet the needs of the pre-schooler and to which they are adequate to age particularities and individual necessities, at the same time.

The design of the didactic act in kindergarten must especially observe the learning particularities at preschool age. Psychology provides numerous theoretical paradigms which have influenced the learning (and teaching) process, each of them promoting discrete principles and ways of action, relating to the child's potential in different ways and capitalizing it accordingly. These theoretical paradigms have generated discrete didactic approaches.

Present-day preschool education and its curriculum capitalizes on the patterns of Constructivist learning, with emphasis on building knowledge in children, on their active involvement in the knowledge acquisition process. This being the case, the present paper aims at outlining the traits and importance of the constructivist model at preschool age.

## **2. Constructivist Theoretical Patterns**

Unlike the innate paradigm, which holds that intelligence is inherently related to thinking, Constructivism promotes the idea of individually-assumed learning, of learning construed as an active undertaking of building knowledge, capitalizing on the child's experience and motivation. Analysing the Constructivist learning model, Glasersfeld (1995) assesses that knowledge 'is not passively received but constructed by the subject'.

But what is learning? Psychologists claim that 'learning is different from the behavioural changes as a result of organism maturation, which are also repertoire enrichments, but in which experience or the interaction with the environment do not play a significant part' (Doron & Parot, 1991, p. 109). From our point of view, learning is a long-term, individually-assumed, evolutionary process which capitalizes on bio-psychic progress as well as on the potentially formative experiences in the social and educational environment, generating relatively stable quantitative and qualitative transformations at the level of the psychic-behavioural development of an individual. According to this perception, Constructivism would be the theoretical pattern which provides the most adequate response to learning requirements.

Emerging as a continuation of Cognitivism, the Constructivist learning pattern has been individualized by various theorists in the field, such as Piaget, Bruner and Vygotsky. In the following lines, we will outline the most important aspects of Constructivist learning theories.

Authoring the theory of psychogenesis of intellectual operations, Piaget asserts in his studies that thinking occurs at first at the level of concrete action, only then coming to mental operations. Promoter of a cognitive Constructivism, Piaget claims that the knowledge-building process involves the child's interaction with the environment. Thus, the adaptation mechanism based on assimilation and reproduction becomes important. While accommodation presupposes the transformation of the organism depending on the pressure exercised by the environment, assimilation entails repetition, aiming at altering the environment according to the needs of the organism. 'Assimilation is, by and large, the use of external environment by the subject in view of feeding their hereditary or acquired schemes' (Piaget, 1976, p. 288). It is also Piaget (1965) who considers learning a permanent process, depending on the level of individual development. He delineates four stages in constant succession: sensorimotor stage (0-2 years), preoperational stage (2-7 years), concrete operational stage (7/8-11/12 years) and formal operational stage

(11/12-14/15). According to this classification, the pre-schooler is at the preoperational stage, more precisely, at the pre-conceptual thinking stage (2-4 years), when the child acquires language and interiorizes motor schemes, followed by the intuitive thinking stage (4-7 years), when the action schemes turn supplier, symbolic thinking occurs and the child coordinates his/ her actions with the help of language.

Piaget pleads for involving the child in situations of concrete experimentation, of active involvement, considering that the exercise and the experience acquired while acting on objects represent complex and essential factors in the mental development of the child. Piaget and Inhelder (1966, p. 130) identify two types of experience:

- a) physical experience of object manipulation;
- b) logical-mathematical experience related to object manipulation in view of knowing the result of action coordination.

Supporter of a contextualised or social Cognitivism, Vîgotsky emphasises the social aspects of learning, considering that learning is produced as a result of the interaction with the other. He is the author of the concept of 'the zone of proximal development', which he defines as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers' (Vîgotski, 1978, p. 86). In his opinion, the child's ability of solving problems by himself indicates the acquisition of a certain level of maturity, being the end of the development process. Also, Vîgotsky insists on the need of re-evaluating the role of imitation in learning. It is only the independent activity what indicates the level of mental development, and not the imitative one. To support his claims, Vîgotsky provides an example from learning mathematics. In his opinion, if a child encounters difficulties in solving an arithmetic problem and the teacher solves it on the blackboard, the child may immediately understand it. But if the teacher solved an advanced mathematics problem, the child would not be able to understand its solution, no matter how much s/he would imitate it.

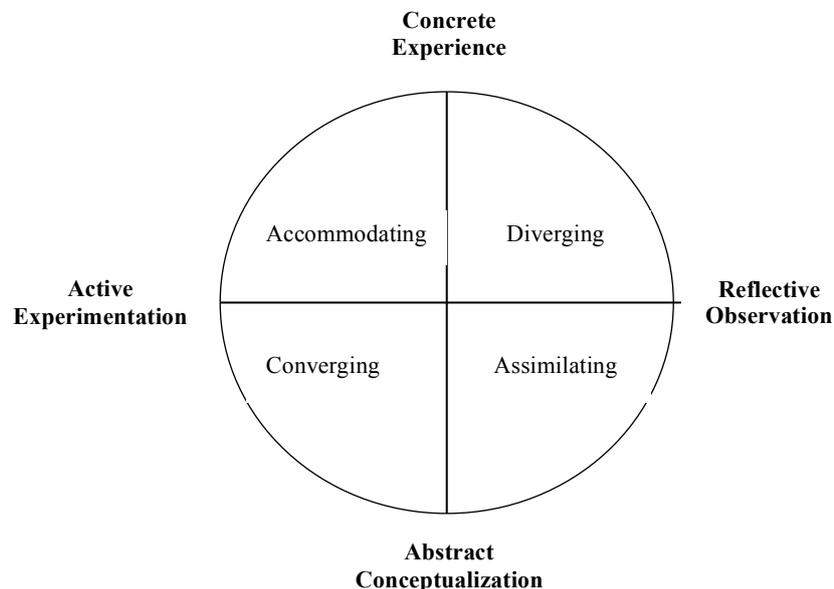
Also particularly interesting is Bruner's approach (1970, p. 17), who regards the promotion of guided learning as essential. Bruner considers that intellectual development is based on the following principles:

- it involves the ability of the individuals to explain, to themselves and the others through words and symbols what they have done or will do;
- it is based on the systematic interaction between learner and his guide;
- it is characterised by the increase in the individual's ability to operate with more alternatives at the same time.

In other words, learning only occurs when the individual is aware of the action, when the action is logical and when a feedback is received from an adult. Bruner also considers that real learning occurs when the child capitalizes three ways of acquiring knowledge: active (through action, exercise), iconic (through sensorial and perceptive stimulation, through images) and symbolic (through words).

Walking in the steps of Dewey, Lewin and Piaget, David Kolb (1984) proposes the *theory of Experiential learning*, attempting to explain the way in which an individual learns and develops. His theory underlines the role of experience in the learning process. He believes that learning is 'the process by which knowledge is created through the transformation of experience. Knowledge results from the

combination of accumulation and transformation of experience' (Kolb, 1984, p. 41). His theory illustrates two ways of accumulating experience (concrete experience and abstract conceptualization), as well as two means of transforming experience: reflective observation and active experimentation, as seen in Figure 1.



**Fig. 1.** The Experiential Learning Cycle and Basic Learning Styles (Kolb, D.A., 1984)

Concrete experience is the foundation of observation and reflection, which turn into abstract concepts with implications for the future actions which will generate new experiences. Kolb also identifies four types of learning: divergent, assimilating, convergent and accommodating. The *divergent* type is characteristic to people who rely on concrete experience and observation, having special cultural interests and performing in group activities which require sharing of ideas. The assimilating type capitalizes on observation and abstract conceptualization and characterizes individuals interested in concepts, theories, who are rather supporters of concision and logic than of the practical value of ideas. The individuals characterized by the *convergent* type of learning combine conceptualisation with active experimentation, being interested in identifying solutions and practical applicability of theories, in experimentation and laboratory work. In the case of the *accommodating* type of learning, concrete experience and active experimentation are dominant. The individuals characterized by this learning style are permanently in search of experimentation and heavily rely on their relationship with the others. Actually, these learning types describe distinct personalities, capable of pursuing distinct careers.

These theories, as many others, reverberate at the level of educational practice, each of the conceptual models presented promoting a discrete learning-teaching strategy. The formal learning process at preschool age capitalizes on these theoretical prescriptions, according to the child's intellectual possibilities and to his needs for development.

### **3. Constructivist Approach To Learning At Preschool Level**

Through its structure and contents, the current preschool curriculum aims at adequately observing the objectives of early education, the European trends in the field, and the particularities of the preschooler's learning process. Nevertheless, the simple design of a curriculum based on the principles of

educational activism turns inoperable without the adequate involvement of the preschool teacher. This is the reason why, in the school year 2015-16, we undertook a study whose major *aim* was that of emphasising the role of the activities of learning through discovery in the preschooler's learning and development process. The working *hypothesis* was that the cognitive, socio-affective and creative development of the preschooler was influenced by the designing and carrying out of the learning activities in the kindergarten.

The main means of inquiry used were: experiment, systematic observation, analysis of the activity results, socio-metric methods. The research applied to a sample of 97 subjects, preschoolers enrolled at the "medium group" [up to 5-year olds] in various kindergartens of Galati County. The average age of the subjects is of 4.8 years.

Our research considered the following variables:

a) Dependent variables: knowledge and moral-civic behaviour, socialising skills, language development, creativity level;

b) Independent variable: learning activities based on active strategies of learning through discovery.

The learning activities were designed and carried out by preschool teachers under our supervision. The tools used in the research were also made by the preschool teachers, being applied after our approval. The pre-test and post-test stages entailed evaluation through oral and practical tests, accompanied by observation, these tests referring to three experiential domains: Language and Communication, Man and Society and Aesthetics-Creativity. Therefore, at the moral-civic level, moral values, moral and civic representations and knowledge of good and evil were assessed. Furthermore, at the language level, the quality and quantity of the vocabulary in various situations was evaluated, as well as the language development from the phonetic and grammatical point of view. In what the socio-affective plane is concerned, the typology of the relationships between preschoolers and the interaction skills during curricular activities were tested. Lastly, at the level of creativity, we tested the pre-schooler's ability of artistic expression in terms of fluidity, flexibility and originality.

During the experimental stage, the learning activities in the kindergarten were designed and carried out in an integrative manner, capitalizing on all the activities provided by the curriculum: personal development activities, experiential domains activities, freely chosen activities.

For example, in order to imprint a moral-civic behaviour to children, we insisted on the moral values (politeness, gratefulness, sincerity, altruism), which were discussed and exemplified during personal development activities. For the formation of moral representations of truth, justice, fairness, courage, industriousness, etc. we capitalized on children's literature, accompanied by role-playing, dramatization, and image reading. Also, in the scientific circle, the preschoolers were involved in observational and experimental activities of plant and animal care. The following items were used: natural objects (leaves, vegetables, seeds, flowers), toys, living animals (fish, rabbits), as well as illustrative materials. In the Art circle they carried out activities for toys reconditioning and recycling of materials. There were also curricular and extracurricular activities (artistic, practical, planting trees, collecting waste, etc.) and interactive teaching strategies which entailed child-child interaction, as well as interaction between children and preschool teacher.

In order to develop the children's socializing skills, experimental activities of group work were carried out, alongside with fun activities, volunteering and role-plays. For language acquisition, the activities carried out capitalized on the didactic game, with the following objectives: development of the oral communication skills, language expressiveness, and vocabulary enrichment. For activating the artistic creativity, aesthetic and creative values were actuated, especially with the help of modelling clay pottery and painting (stone painting, painting with the fingers, overlapping technique, imprinting technique, etc.) with an imposed theme or at the choice of the preschoolers.

The activities carried out had significantly better results than those undertaken during pre-test, in the sense that the preschoolers developed practical skills, socializing abilities, and understood the meaning of the information they gathered, implicitly displaying a higher level of active and aware involvement in the activity. However, they still depend on the adult, either for setting their task or for accomplishing these tasks and receiving feedback.

#### **4. Conclusions**

The research undertaken sought to highlight the role of the activities of learning through discovery in the preschooler's learning and development process from the perspective of constructivist learning. The results obtained are important for understanding the mechanisms of learning at preschool age, constituting an essential reference in designing learning experiences in kindergarten. They provide clear evidence that preschool teaches acting, experiencing, helping them to understand the reality around him. Constructivism advocates for children's active involvement in the learning process. At the educational level, this principle translates in creating learning situations which prompt the child to experiment, to exercise, either independently or in group, to actuate previous knowledge and experiences while acquiring new information. The active strategies, such as learning through discovery, become capital tools of building knowledge. The results of the present research confirm Piaget's and Vîgotsky's theories. Preschoolers need an adult for talk fulfillment and not for providing pre-established knowledge to them. From this perspective, it is necessary that we move beyond the traditionalist patterns of preschool education and promote an empiric-centered learning model in which the child has the main role, while the preschool teacher only acts as a coordinator. It is equally important that we refer to age and individual particularities in the case of preschoolers. The tasks and the texts used should observe the child's level of understanding and should be accompanied by illustrative materials. In complete agreement with Piaget's conclusions, we may state that the preschooler needs to experiment and understand by acting. The learning activities in the kindergarten should develop the children's curiosity, ability to understand and creativity, as major factors for their future schooling. Also our research has certain limitations related to the sample size and that we have not applied standardized tools to measure the dependent variables. Although the results cannot be extrapolated to the entire population of preschoolers we believe that they highlight a reality validated by actual experience in kindergarten. For this reason we believe that the training of teachers from kindergarten need to pay attention to the prospects of learning approach at preschool age, as a step to understanding the mode of designing further activities in kindergarten.

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