

## **Presenting Design Strategies of Children Garden Complex with an Approach to Growth Psychology**

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### **Abstract**

*Different factors are involved in effective designing. Audiences of the project are the most important one which are really effective in the formation of the design. Thus, the audience of the projects must be identified to satisfy his desires. Children are the main audiences of this research. They are assumed as humans who have special rights, thoughts and emotions. Since, environments of the attendance of children are effective in the personality of children and his behavior, the design of the environments must be based upon theoretical principles of desires and features of children and perception of the environment by them, considering the effect of environment on the growth of the children.*

*This paper uses a descriptive-analytical method based upon the principles and collecting data through library methods such as books, articles, thesis to investigate growth desires of the child and proper answer to them in an architectural space. Since, the quality of architectural space is quite important to better performance of activities and satisfying desires of children to have a better growth. Thus, new resolutions have been proposed to design the garden house of children such as space designing like drawing, theatre, game space, and exhibitions for presenting children art pieces. This has been done by evaluating properties of children in pre-operational period as described by piaget. Hierarchical designing and linear design of spaces, transparent spaces, central yard, furniture designing, garden designing with trees of different colors, using various kinds of color, texture and using ramp in spaces are such resolutions which were proposed.*

**Keywords:** Child, psychology, growth-cognition, garden-house, Piaget

## **Introduction**

Architecture of the children spaces must be based upon small criteria and compatible with their needs. Before considering any kind of space facilities, the children and his understanding must be recognized and get familiar with his thoughts and spirit. The children need to be emotionally satisfied and have an emotional binding with physical and social medium. Thus, the appropriate environment, having necessary stimulus and incentives will be compatible with every stage of the growth of the child.

In designing, the most useful trick in order to have an emotional binding between the child and surrounding and avoiding unsatisfied feelings is to consider his dependencies and physical, emotional disposition of children in growing stages (Erfani moghadam, 1385). Thus, it can be said that designing shouldn't be imposed to children but must be designed according to his personalities (Kroner, 1385). Thus, considering growth-desires of the child and finding a proper answer for satisfying such desires can help him grow properly.

## **Methodology**

The current method of this research is analytical-descriptive. To have a theoretical approach, we have focused on the library and internet resources. By studying thesis, books and articles we have extracted growth features of children from the viewpoint of piaget. After evaluating them, we have proposed new ways to design the garden-houses of children.

## **Theoretical principles and approaches**

### **Recognizing growth**

Recognition is a wide, comprehensive concept. It is referred to mental activities which are involved in acquiring, processing, organizing and using such knowledge (Masen and college, 1379). Conventional definition about recognizing limit them to procedures, and precise intelligent productions. Such imagination includes high-level psychological entities such as knowledge, self-conscious, intelligence, imagination, creation, conceptualization, classifying, symbolization, and dream (follower, 1997). Recognizing growth refers to the fact that children increase their imagination and memorial skills. They regulate their daily task and reach self-actualization in their world (Bjorklund, 2004). Recognizing growth refers to regular changes which happens through the process (knowing, understanding, memorial and thinking) (Seif, 1392). In daily language, recognizing is seen as knowing. But in psychological terms, it means learning flows and how to organize, store and implementing such information (Lotf Abadi, 1393). Matters such as intelligence, mental abilities, information processing, its speed, attention, memory, creativity, solving problems, and such matters are included in the growing aspect of the human being (Berk, 1389).

### **Growth recognizing features of children**

Acquiring cognition skills relies on social and physical skills, in which children explore the world by them and express their understanding from the world. Cognition skills play a prominent role in all growth fields and all activities of children. Children may not say(express) what they say or what they

understand, but their understanding may change by what they are doing. Thus, their opportunities for learning cognition skills will be acquired by activities (Alen,Hart, 1373).

### John piaget 's theory

In the world of psychology, it's hard to find somebody like john piaget. He is the most comprehensive theorist of mental growth. Almost all researches concerning thinking of children cite piaget's works. (krane, 1389) He has made the most effective theory about children in middle 20<sup>th</sup> century (Cristinan, colleagues, 1385). Piaget considers the human being as a whole. He argues that cognition is a dynamic current. He believes that cognition is due to the mutual relation of mental talents of human being with the environment. His famous theory concern the theory of cognition-understanding growth design, The understanding-cognition growth of the child depends upon the natural growth. Such growth consist of different periods and different stages, in which every stage is a complement to the previous stage (Seif, colleagues, 1392).

### Cognition growth stages from the viewpoint of piaget

Table.1 Piaget assumes the following 4 stages which is written in

First period: (Birthday to 2 years old)	(sensing, movement) intelligence: Children organize their physical activities such as sucking, striking to encounter with their close world
Second period: 2-7 years old	Pre-operational thinking: children learn how to use symbols, and internal imagination. But, their thoughts are illogical and irregular. In this stage, thinking of children are different with adults.
Third period: 7-11 years old	Objective operation: Children can develop regular thinking. This ability is feasible only through objects and tangible activities
Fourth year: 11 years old to adulthood	Formal operations: Youth can develop regular theoretic thinking.

Source: krane, 1389

Since our studies concerns children in the age range of 3-6 years old which is included in the pre-operational stage, we elaborate the features of such period:

### Pre-operational stage

It takes 2-7 years. It is the second period of cognition growth from the viewpoint of piaget. It is actually divided into two secondary stages: symbolic performance and intuitional thinking. In the stage of symbolic performance which happens between 2-4 years old, the child acquires the ability of mental representation of the subject which doesn't exist. This ability develop the mental world of the child to new dimensions. Designs of children are fantasy and innovative. The stage of intuitional thinking, which is the second stage of pre-operational thinking, begins by 4 years old and last for 7 years old. In this stage, the child uses elementary reasoning and asks for the answers of all questions. Piaget calls this stage an intuitional stage in which the child never trusts his knowledge and cognition (Biabangard,

1386). Piaget argues that symbols stem from mental imitation. Since symbols are based upon the personal experiences of the child, they have special quality for different children. Symbols can't substitute the objects directly. But they represent the personal knowledge of those objects (Dadsetan, Mansur, 1369).

Pre-operational thinking includes growth of symbolic thinking, language skills and abilities in which the children can many real concepts in this stage. But they still can't understand abstract thinking. Self-biased thinking exists in this stage. It means that children say such things without considering others (Burning, 1999). Children Self-biased thinking are not utterly due to the personal interpreting of words, but it may be due to the mental limitation of them in simultaneous thinking of different subjects, that they can't think simultaneously to several subjects or talk about them. Children may acquire significant advancement, but their operational thinking has two major limitation which are self-biased and animating illusion (Alizadeh, 1390).

## **Properties of pre-operational thinking**

### **1- Representation**

The major transformations of the pre-operational period are related to the ability of representation of objects and events. Several kinds of representation play a prominent role, which are listed as follows:

#### **1-1 Delayed imitation**

Imitation from objects and events which doesn't exit right there. The importance of delayed imitation is that it indicated the ability of the child over mental representation of the imitated behavior (remembering). Since the child tries to repeat his previous behavior, imitation is seen as such a construction outside the ego (Vadzures, 1387).

#### **1-2 Symbolic game**

The nature of symbolic games is their being imitational. But they are a kind of expressing oneself as well. The difference is that the audience of such expression is the child himself. Thus, there is no intention for communicating with others. The action of symbolic games is satisfying yourself. For such end, the facts change in a manner to satisfy the wishes (Piaget, 1967). Symbols are made for expressing the experiences of the children's life. Such experiences can't be formulated with language. Thus, when the language is not adequate for the child, he uses symbolic game as a field of thought, and interests (Vadzures, 1387).

#### **1-3 Painting**

Use of the child from pastel, pencil and brush has no result except some chaos drawing at the beginning. The child has no concept out of drawing, although such drawing may lead into meaningful shapes rarely. In the progress of the pre-operational stage, children try to represent several things through drawing, and to approach their efforts into reality (Vadzureth, 1387).

### **1-4 Mental images**

The same symbolic representations are seen as objects and conceptual experiences, although such drawing is not precise versions of experiences. Thus, mental images are not objective and precise versions of stored perception in mind. But, as paintings are similar with the main issue, they are a big part of the mental images, and such an imitation of perceptions. Essentially, there is such a correspondence between them and similarity perceptions. Thus, mental images can be seen as equivalent to symbols. In the progress of pre-operational stage, the nature of mental images is static. According to the ideas of piaget and Inhelder, mental images are related to the motion, which appear in the objective operation level (Next level) Thus, Mental images are similar to the paintings or photos (static ones) rather than the films (Piaget and Inhelder, 1969).

### **1-5 Verbal language**

The only transparent transformation in the pre-operational stage, is the verbal language transformation, which is the last form of representation. In the second year, they begin using words instead of object symbols (Vadzureth, 1387).

### **2- Self-biasing**

It is defined as the inability of recognizing the symbolic viewpoint of others from the viewpoints of oneself (Brek,1389). Being egocentric is observable in all territories of the life of the child. It is manifested as the inability of accepting the viewpoints of others: Inability of seeing what others see. (Spatial egocentric), inability of understanding what others understand, and imagination of what others imagine. (Cognition of egocentric) Inability of sensing what others sense. (emotional egocentric) inability of following group's rule (social egocentric) (Pour husein, 1393). Being egocentric means that the child can't accept the role of the others, nor does he understand others. Such children believe that everybody think as they think. They believe that their thoughts are the only thoughts that can exist, and thus they must be essentially true. Even if the child encounters evidences that contradict with his thoughts, he concludes that his evidences are incorrect. Since he believes that his thoughts are right. He assumes that his thoughts are correct unless he doubts over his thoughts by opposition of his thoughts with the others. The main source of the verification of the thoughts of the child is his social interaction which makes him opposition with others. Certainly, for such a child, comparing his thoughts with others is the only way to prove his ideas. Thus, social interaction with adults is the main factor which plays an important role in the extinction of being egocentric (Vadzureth, 1387).

### **3- Being one dimensional**

It consists of the interest over one dimension of event and ignoring the rest of the dimensions (Karimi,1386). The child is unable to check all driving aspects and decentralizing visual searches. Thus, the child who is decentralized can only internalize limited aspects of the events. It sounds that all cognition activities are governed by perceptual aspects. Perceptual evaluation dominates over cognition evaluation. If we ask a 4-5 years old child to compare two rows of objects, in which one of them consists of 9 objects and the other one includes only 7 objects (Although being longer). The mentioned

child chooses the row which includes more objects. Such problem are seen even if they know that 9 is more than 7. Thus, perceptual evaluation dominates over cognition evaluation (Vadzureth, 1387).

#### **4- Lack of transformation**

It means the inability of the person over concentrating on the procedure from one state to another. (Karimi, 1386). The child attends the existing elements of the chain (or sequence) as he observes a chain of changing or a subsequence of states. He never takes care of one transformation which makes one state out of another one. In order to examine the child, we give a snail to the child from different points of the jungle. Every time a different snail is given to the child. The child can't recognize if all the snails were similar or different. Thus, the child can't restore one event from the other one. (One snail from the other one) (Vadzureth, 1387).

#### **5- Irreversibility**

Irreversibility includes inability over taking a series of stages in a problem after returning to the starting point (Berk, 1389). Children can't understand the subject in the pre-operational stage, that each kind of changing the position, form, sequence etc can be mentally reversed. It means that it returns to the initial position, sequence and initial value (Peterson, fleton Collins, 1381). For example, we show two rows of coins to two children in which they have equal length, and each row is consisted of 8 coins. The child claims that in each row, the number of coins is equal. We increase the distance of the coins of a row. Now, he doesn't believe that the number of coins in each row is equal anymore. The judgment of the child is due to the fact that he can't reverse the action of prolonging in a reverse manner (Vadzureth, 1387). Children acquire their knowledge about space and causality based upon their action in the environment. The environment consists of elements and physical sequences. When the child takes the elements and sequences into action, construction and discovering physical concepts become feasible. Concepts or knowledge can't be discovered directly based upon the existing sample of the environment. But they must be invented by the child himself (Vadzureth, 1387).

#### **6- Mental storing**

Mental storing is acquiring a clear concept about the fact that the quantity of a substance will be always fixed regardless of the surface changing. For example if we put 8 coins subsequently, and increase their distance to make a longer row, the number of coins will be 8 again. Children can't store mentally. They can't be conscious over the main dimension after confronting the changes of the irrelevant dimensions. According to the ideas of piaget, mental storing structures can't become existed without direct training or reinforcement techniques. Active experience of the child is the solving key of such matter (Vadzureth, 1387).

#### **Child and architecture**

Architecture can train people through the spaces it creates. The burden of such responsibility is more due to the sensitivity and affection of children in designing relevant spaces. The objective is to prepare such an environment and effective parameter to achieve potential existential capabilities to recognize physical and personality aspects and achieving perfect growth. The role of physical environment on the growth of the child can be seen as a substrate for the formation of existential

temples and general design of his existential aspects. On the other hand it is seen as an effective parameter to plan and develop mental resources, cognition content and physical skills. Environment and appropriate substrate for the children growth are those spaces which are designed to satisfy their intention in addition to satisfying their existential desires in growth which are compatible with their abilities. Another important issue which is effective in keeping the bonds and making a mentally secure feeling is transparency and correspondence with cognition and perceptual abilities. The child wishes to have a variable space to be able to leave his trace right there. Movement, destroying, construction, etc are such activities which makes him to be able to make desirable world to him. This world is not utterly a geometrical district, but an effective and active space which is involved in the personality of the child and satisfy security and freedom of the child. Such space can become smaller or bigger in terms of the age of the child. The child finds himself in such space. It must be said that such space is not a normal space, but it is a dynamic and alive reality. The space should not impose itself to the child, but instead it must be formed in proportion to his personality (Kroner, 1385). Given objects and proper shapes, you can help dynamic mind of the child, his growth and his expression by considering the consciousness of the meanings of shapes (Asadullah kia, 1381).

## Discussion and conclusion

Table. 2 Presenting designing resolutions

Properties of child	Properties of space	Ideas and designing resolution
Mental images	Space for nurturing magination power	Space design to draw paintings, making story and creative theatre
Symbolic game Verbal language	A chance to express oneself (thoughts, interests, etc)	Space designing for theatre, poetry, telling stories and public drawing (Exhibition with tent structures)
Delayed imitation	Space for mental representation (Imitating what have been seen)	Space for performing theatre
Being egocentric	Spaces which makes the child doubt his thoughts	Spaces for regular group games
Being one-dimensional	Not using elements	Designing space such that the child doesn't encounter different spaces suddenly (hierarchical designing and linear designing of spaces)
Ability of being multi-dimensional	Designing such that the child participate in all events happening in the room (even visual participation)	Designing transparent spaces inside the complex using wide windows designing, central yard and separating spaces with furniture instead of walls
Irreversibility	Designing spaces such that the child can change the position, shape and sequence,,,, and making it to the initial state	Designing walls which are applicable by separating them by furniture. (Full and empty spaces)
Mental storage	Spaces to understand the concept that the quantity of a substance can be fixed without surface changes	Making spaces for flower games of children

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