Designing for Children
- With focus on 'Play + Learn'

Designing an architecture educational package for children

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Abstract: It is argued that education can influence our sense of responsibility towards diverse aspects of life, including a sustainable future. Like adults, children can also contribute to the idea of preserving our cultural heritage if an appropriate architectural education is provided for them as well. However, teaching architecture to children differs fundamentally to that of adults. This paper reports on the design of one of the very first educational packages for teaching architecture to children in Iran. The architecture educational package, "ArchiKoo", is aimed at developing children's creativity and consists of program modules, and instructions.

Key words: Children education, Basic concepts of architecture, Educational tools.

1. Introduction

Regardless of age, gender and social class, all humans have unavoidable experiences and interactions with their immediate environment, which often resulted from an architectural design endeavor. Therefore, if an appropriate understanding of our immediate environment and homes is created, we would be in a much better position to assess the impact of the habitat on the qualities of our lives. However, not all people are lucky enough to be educated on architecture so as to have an understanding of these impacts, let alone our children.

The protection of cultural heritage, including our built environments and natural resources has recently attracted many attentions around the world. It is believed that if people and in particular, children are taught about architecture, this will stimulate a public awareness

within the society which, in turn, will help in protecting our cultural and environmental heritage. This approach is fairly new, that is, there are still many challenges in the formulation of a comprehensive educational model through which children can be educated on the basic concepts of architecture. This is to say that this unfathomed area lacks a well-defined plan and a clear response to the question “how can children be educated about the built environment”? For instance, should we take a more creative approach to teach the very concepts of architecture or should we take a more classic approach, resembling the educational system through which an architecture student is trained?

To this end, many countries have started initiatives, making children aware of their immediate environment so that they feel accountable for the processes shaping and influencing the environment. Amongst these initiatives are the programs through which the very basics of architecture are taught to children. Through architecture design education, children gain the ability to understand their role in evaluating the quality of the environment and its connections with their lives. Even though these initiatives have started in some countries like Finland and Sweden for some years now, but the first attempt was made in 2003 by the Cultural Division of ISA (Iran Society of Architects).

2. Education, children and architecture

Our personality is mostly formed during our childhood, making this period of life amongst one of the most important stages of our development as human beings (Minuchin & Shapiro, 1983). It is obvious that providing children with required facilities for proper education will result in better understanding of the world around them. In the early developmental stages of childhood, the toddlerhood, children do not have a thorough understanding of the space and elements forming an environment (Piaget, 1997). From age 7 onward, children start accepting more complicated data as they acquire more experiences and also take more responsibilities towards their normal duties. As they start learning how to read and write and do simple mathematical calculations, they gain a better understanding of the quantity, quality, and the shape of the environment and also, a stronger ability in apprehending different views and perspectives of an object or an environment. They can understand the distance between locations and main directions, e.g., left and right (Singer & Revenson, 1996). That is why many educational programs are designed to be started at age 7.

Education can help children to develop a clearer and more accurate understanding of their surroundings. Recent psychological approaches in education suggests that as children grow, their abilities also grow with their interest (Simplicio, 2000). These approaches also underpin the necessity of valuing concepts such as loving, peace, and the respect to the environment. Educating children involves at least two main variables: The children and the environment in which they grow (Spock, 1985). Children's internal motivation urges them to discover and consequently understand the environment. If children find an educational opportunity in which they can express their thoughts and experiences, they would accept it and enjoy the learning process which, in turn, assists them to be more creative and increases their abilities (Gura, 1992). Barnes (2002) re-emphasizes that the role of schools in the development of children's creative minds is a case in point: examples drawn are initiatives undertaken by associations and foundations of educational planning and the Design Council to teach design and problem solving techniques to children. Piaget (1997) introduces the understanding of space as the basis for many knowledge claims; however, architecture as a branch of artistic education which helps people to gain an understanding of space, has not yet found its true position in basic official education brought to children at schools.

The particular needs of children for proper education have also been emphasized in Istanbul Declaration on Human Settlements (UN, 1996) which alludes that children must be helped to be active members of a society such that a sustainable future is supported. The International Union of Architects (UIA) which represents over a million architects in 124 countries, also states that if children are not aware of the organization of cities and buildings where they live in, part of their rights are not honored (UIA, 2009). UIA's credo is that "Our children will build the future" and holds that like adult citizens, children can take an active part in shaping the world they live in, contributing to communities which provide a healthy and harmonious quality of life for all. UIA has also initiated a webpage in which many countries such as Austria, Australia, Costa Rica, Croatia, Finland, France, Germany, Ireland, Italy, Japan, Slovenia, Sweden, Turkey, and the UK, have already compiled material to support built environment education, and in particular concerning architecture design education for children. The objectives of these programs involve children's familiarization with the preservation of the environment as a national asset. Most of these programs are based on hands-on activities as well as practical methods of making. Materials, provided to children in some of these programs, are selected from natural resources. Even though these materials promote a more sustainable use of

resources, nevertheless children need more time shaping materials to their desired forms. Also, the procurement of these materials is not an easy task to deal with.

3. The experience

As mentioned, the first attempt in teaching architecture to children in Iran was made by the Cultural Division of Iran Society of Architects (ISA) in 2003. The module was called Kids' Architecture Workshop (KAW) and held at Iran Artists Organization in Tehran. KAW run in two separate twelve-session long programs, utilizing 4 to 10 instructors (1st & 2nd sessions respectively); who supervised more than 30 kids aged 5 to 12 in both programs. The key objective of the programs was to teach fundamentals of architecture to children in order to promote the general culture of architecture in Iran as well as making children responsive to their immediate environments, including living, working and educational settings. The main components of KAW were: 1) material familiarization [mostly clay for making adobes], 2) problem-solving [Cases were within the field of industrial design, i.e., designing an ergonomic chair], 3) Educational games, 4) Graphics and drawings, and finally 5) visits to residential, educational and historical places. Figure 1 shows the kids and instructors working at the workshop as well as visiting some places in Tehran.

Figure.1 "Kids Architecture Workshop"
(Photographs courtesy of ISA)

4. The design

By virtue of our rich experience gained through the course of KAW in Iran as well as an exhaustive review made on many methods being used to teach architecture to children in different countries around the world (UIA, 2009), we found out that the educational programs for teaching architecture to children still lack a cohesive approach when it comes to get children's hands on the job: i.e., designing, drawing and making. Therefore, it is decided to design a new educational tool for teaching architecture to children; the *ArchiKoo*: why not coming up with a simple approach that allows children to design, draw and make the spaces they dream of in a more self-exploratory fashion? Next, the design of *ArchiKoo* is explained.

ArchiKoo is a portmanteau word, conflating two abbreviated words "Architecture" and "*Koodak*"; the later means "child" in Persian. Therefore, it basically suggests a *glocal* (global-local) approach towards the education of architecture to children.

Based on our experiences and studies, we became convinced that material-free strategies for teaching architecture to children will not simply work: they like to change things and see the result. Also, it is very important to select suitable materials for the practices envisaged to be accomplished by children. Luckily, there is a diverse range of materials available; from the very raw materials, like clay and plaster in their powder state, to natural material like bamboo or stone, to prefabricated architectural elements like pre-manufactured doors and windows. However, it is of prime importance to understand that the very nature of education involves developing children's creativity through the embodiment of their ideas. As a result, materials must be flexible enough to allow children to create most forms of their choice. If prefabricated materials are chosen, it is wise to have them in plain forms, facilitating easy shaping. Mean while, children should not feel frustrated, trying to shape a material for so many times without reaching to their desired forms. Figure 1 shows a child working with rectangular blocks.

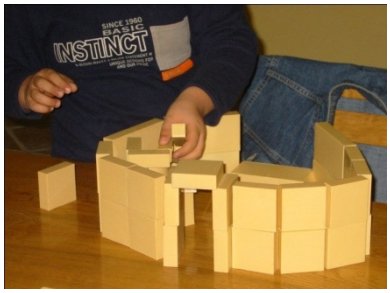

Figure.3 Frustration of a child making a curve-shaped wall using straight blocks
(Photograph courtesy of ISA)

ArchiKoo is not only a mere physical tool for teaching architecture; it is a comprehensive package consisting of physical elements including 2D & 3D toolkits such as Structural Elements Kit + Magnetic Shapes & Modules, Drawing Kit and Material Kit. We also went a step further which was to include ten detailed and graded educational instructions. These instructions help both groups of trainers and children to follow a step-by-step plan, ranging from simple to more complicated tasks of architectural design skills, covering aspects such as architectural plan, city elements, suburbs, neighborhood, building views, façade, shelters, constructional materials, methods, climatology, geography, habitat, culture and society, building elements such as windows, doors, rooms, ceilings, floors, walls and also on-the job training in aesthetics. The kit is also aimed at reaching goals such as enhancing children's memory and creativity; stimulating children's analytical assessment of the environment; and also supporting children's skills such as group activity as opposed to solo ones. Figure 2 shows the "ArchiKoo" toolkit, developed by the second author of this paper. The *Archikoo* is a conceptual proposal and still has not been prototyped for testing.

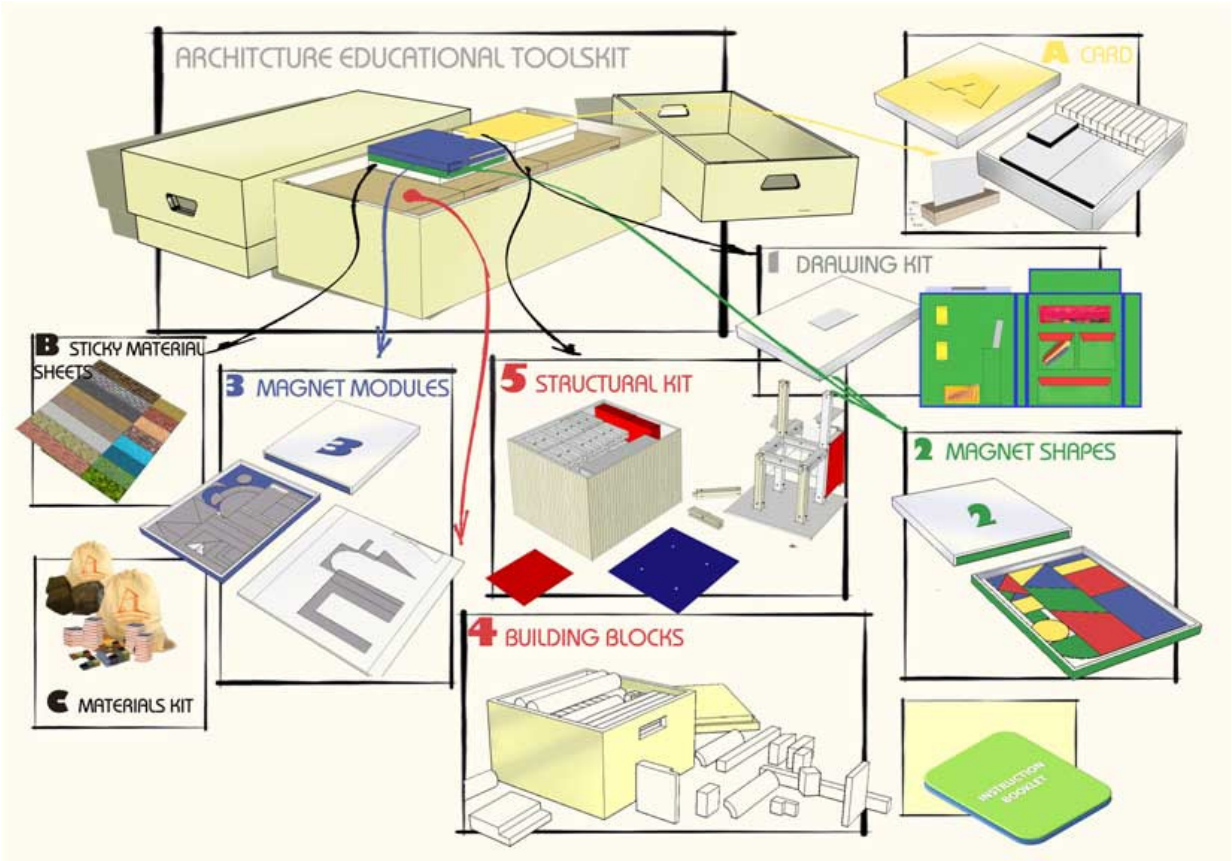

Figure.3 the *ArchiKoo* kit

6. Conclusions

It is argued that children, as small members of our society, can and should contribute to the built environment if an appropriate architectural education is provided for them. Nevertheless, this education must fundamentally differ to that of adults. This paper reports on the design of one of the very first educational packages for teaching architecture to children in Iran: the *ArchiKoo,* which is aimed at developing children's creativity and sense of responsibility towards the environment they live in. It is expected that children can develop their critical and analytical way of thinking through using the kit, doing the practices designed to that effect.

Whilst the concept of *ArchiKoo* cannot be exclusively called a brand-new idea in children's architectural education, its exclusivity is explained through its unique features in not mandating children to follow a pre-defined patterns compared to existing modules and educational tools. For instance, *ArchiKoo*'s Magnet Module indirectly guides children to incorporate right proportion in creating a façade for an exterior or its Building Blocks Module does not suggest any pre-defined structure, plan or façade for a building: children would receive a sense of these concepts while creating the space themselves. As a result, children are free to create their own frame of understanding of the space and extending their wings of imagination to create any environment they like. Because the *ArchiKoo* is a comprehensive package exclusively designed to be used by children for their architectural education, some basic concepts of art, including the understanding of colors, proportions, scales, and structures, can also be learned. *ArchiKoo* is designed to bridge the gap existing between the objectives of an educational program and their intended users' limitations as well as potentials.

Considering the indicative length for full papers, this paper could only afford us to narrow down our focus only on portraying the general approach taken towards the problem rather than explaining each component of *ArchiKoo* in full details.

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