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Areas of interest: creativity, imitation, basic design and architectural education

A DEVELOPMENTAL APPROACH FOR PROFESSIONAL GUIDANCE AND ORIENTATION:

A Research on Architecture and Design Programs for Children and Youth.

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ABSTRACT

There are certain qualifications that can be claimed as the prerequisites of academic and intellectual success in architectural education: Reasoning independent of factual content, physical or visual form. The capacity of considering more than one factor at the same time, manipulating and representing them physically and mentally in relation to each other; the capacity of coordinating diverse perspectives and objects – concepts simultaneously; the capacity of expressing itself through sensitivity, abstract and spatial thinking, and art.

According to Jean Piaget, those capacities are the characteristics of the last stage of cognitive development. Even grown up people who do not have adequate and proper socio-cultural experiences and interaction may not achieve this level. The help of rich spatial and intellectual experience, maturation, social interaction, culture and art, rich and qualified aesthetic and educational stimulus can develop those qualifications later on as well.

In this respect, the right time for measuring and assessing the capacity and potentials of candidates for architectural education, particularly those who have not meet diverse social and cultural experiences yet, may not be the last year of their high school-collage education.

There have been workshops and education programs for children and youth to develop a consciousness about their physical – architectural surrounding, sensitive and sensory experience/reflections of space, design culture, their rights and responsibilities in shaping and using city. The presence of these programs increases and intensifies the possibility of integrating architecture as art and the production of culture, into the daily life. The aim of this study is to discuss the goals, content, method and achievements of those programs and workshops with reference to their capacity to acquire the basic level of mental and psychological development essential for architectural education. Architecture and design workshops – programs for children and youth is examined with respect to the abilities to improve spatial and abstract thinking, their power to create a better understanding of spatial organization, and will to shape it consciously. As a consequence, this will lead us to discuss the potential of establishing measurable, assessable and developing base in students willing to be architect in the future.

Keywords: Architectural education, abstract and spatial thinking, cognitive development.

The basic goal of architectural education is to raise intellectuals who are capable of comprehending the relation between space defining and structural elements of architecture, of manipulating those by means of ratio and sensitivity, reproducing, representing and expressing through architectural media. During this education, students learn how to acquire and utilize the technical / technological knowledge to realize architectural space. The essence of the education is to learn for design, learn in design, and learn by design in experience.

Design is an instrument, a mortar, combining all that knowledge and skills in order to imagine, construct and realize architectural space. It is the unique way of unifying all rational aspects - technology, technique, material, economy, function, labor force - with experience, creativity and sensitivity within the form of Architecture. In this respect, the architectural education is composed of spatial design based studio experiences, and supportive programs considering cultural – historical background, and building technology.

Architectural education promises basic skills, knowledge and a kind of fictive experience to be entitled Architect. The schools of architecture offer diverse programs – methods – approaches to fulfill their promises for being a qualified and accredited architect. Although the programs and methods are diverse, the qualifications of a good architect are almost agreed universally. UIA, UNESCO, RIBA, and many other respected institutions declared, and have been updating, those qualifications. It is quite clear who can be architect. Then, the question is who should be encouraged and guided to be an architect? Testing particular skills and knowledge that are supposed to be the achievement of the professional education may not be a rational way of measuring and assessing professional interest and skills for guiding and orientation. Instead, their psychological, behavioral, cognitive readiness for expanding knowledge and experience field of architectural education should be evaluated.

It is of importance to define certain meta-cognitive skills and qualifications commonly associated with creativity, design, and perception in order to explain that issue of READINESS. Those skills have been cited and described in many ways in related literature on architectural education. Architecture as a discipline, however, usually underestimates them as the results of over 100-year works of other fields like educational sciences, learning and cognitive development. The efforts of many educators following the innovations in education and learning studies are appreciated. But, the common approach is that being an architect is enough to teach architecture, which is a false conscious. Many architect-educator, unfortunately, do not even know that the roots of modern architectural education, and particularly Basic Design Education, are established on the works on learning, creativity, motivation and development in early childhood (Varnelis, 1998; Lang, 1998). The theories of modern architectural education, methods, and pedagogical tools, in many cases, had been derived from the works of psychologists and educators considering the physiological, psychological, cognitive and emotional development of individual.

Architect-educators should realize that telling about architecture is not enough to make student learn about architecture and design. In order to be able to speak about learning design and architecture, to understand, facilitate and guide this learning process, it is compulsory to get help from educational sciences and psychology.

In this study that interdisciplinary support is provided from Jean Piaget, Swiss Biologist, the father of Genetic Epistemology, to explain those meta-cognitive skills. Jean Piaget's theory of child development is still a touchstone for all child development studies (Piaget and Inhelder, 1967; Piaget, 1971). By benefiting from Piaget's theory, the conditions of being ready for architectural design education can be stated as follows: ¹

¹ UIA declared a set of qualities associated with architectural design. The similarities are impressive. Ability to engage imagination, think creatively, innovate and provide design leadership. Ability to gather information, define problems, apply analyses and critical judgment and formulate strategies for action.

- Abstract thinking: reasoning independent of factual content, the capacity of dissociating form from contents completely, and representing them with concepts rather than real images or symbols.
- The capacity of considering, interrelating and manipulating more than one factor or variable simultaneously (combinatory nature of the operations).
- The ability of coordinating different perspectives, objects and his/her perspective.
- Being capable of expressing himself/herself as a self actualizing individual, communicating with others through sensitivity, art, design and architectural space.

Beside those cognitive skills, there should be certain qualifications related to being an intellectual and developing individual:

- Ability to perceive himself/herself as the active agent producing, transforming and using the city and architectural space.
- Ability to comprehend and use rights, freedoms and limits as a conscious citizen of today, not future.

Those skills and qualifications should be considered only as the prerequisites of architectural education. They are the characteristics of a developing individual in the way of realizing psychological, cognitive and behavioral potentials. By definition, university education requires those characteristics for intellectual and professional development. The most commonly cited problem of architectural education, however, is the lack of them in the first year students.

Despite the amount and diversity of the schools of architecture, the sameness of the problem is worthy of consideration. Because, as we know from the studies on child development, the speed, phases and levels of cognitive development and learning can vary according to the different geographies, cultures, social and economic conditions. But the development process, its structure and stages do not change (Piaget, Genetic Epistemology). The varieties are caused by social practices, education systems, language, and cultural transference, and so on so forth. The question is why different architecture schools in different countries do have the same problem despite the fact that every single society has its own developmental characteristics.

Before answering this question, it is necessary to explain how societies and individual reach that stage of their development. First of all, social and cultural practice, especially education system, should create opportunities for abstract thinking. Hypothetical reasoning, mental representation and manipulation of knowledge of an object without its physical form are the only way of producing /doing science, art, philosophy, developing theories through inductive and deductive thinking. Promoting those activities in social life and education would allow individuals to experience higher cognitive processes. That is to say, in such societies, individuals would have the necessary base, be armed with the cognitive – intellectual skills for spatial – design thinking.

Those must be the criteria for being eligible in architectural education. Is it possible to say that architecture schools have been evaluating the candidates with respect to those criteria? The tests and scales used in different schools should be subjected to an analysis in this respect. Now, it is possible to answer the question above. Architectural education suffers the same problem because they are testing knowledge base, which is supposed to be acquired by the education itself. On the contrary, entrance exams, tests or scales should be directed to the intellectual – cognitive readiness of the students. There are numerous researches on this subject, and the specialists had already developed number of instrument.

Ability to think three-dimensionally in the exploration of design.

Ability to reconcile divergent factors, integrate knowledge and apply skills in the creation of a design solution.

On the other hand, it could be ridiculous to measure high-level cognitive skills in individuals who could not have a rich stimulating environment that promotes abstract thinking experiences. As mentioned above, the lack of proper environment can inhibit, slow down or redirect the cognitive development.

Piaget's work, fortunately, show that experiences in early years can accelerate the development, and some high level achievements could be gained later on with proper support and education. Indeed, the mission of the first year studio is to help students to catch up their developmental process. In this respect, it could be possible to state that the professional guidance and orientation for the architectural design education should not be done just prior to the university education. Because, in many cases, education systems, and socio-cultural experiences do not support the development of cognitive – intellectual skills. There is, unfortunately, no proper and flexible instrument testing those skills in different cultures. It is a fact that timing and proper instruments are the keys for professional guidance and efficient use of human resources. A misguided potential would end up with personal and social disappointment,, and inefficiency.

The reason for decreasing quality in built and unbuilt environments, despite the increasing number of architects; for the transformation of spatial qualities as rights and needs into luxury and meta could be that education system, which is not capable of selecting and promoting eligible candidates. The capacity of the schools is determined by financial considerations. It is almost impossible to differentiate mediocre from talented. Then, main determinant of the quality in thee classroom, studio or workshop is the mediocre one. Consequently, the main goal of the education becomes to graduate professionals who can fulfill the minimum requirements of Architecture. To extend the program, or changing the structure, or renewing academic staff every year with, if possible, star architects cannot solve that problem.

The solution is in individuals, and societies, perceiving spatial quality as a right, and design as a way of life. This individual is an active agent of producing, changing, and sustaining livable environments. When s/he gets another social role / profession, s/he would demand quality, if becomes architect, planner, or designer could provide quality. The mission of architectural education is to prepare them for such a production, change and maintenance, rather than developing such a personality.

Social consciousness and cognitive maturity is a fertile ground for that education. This study aims to introduce and promote education programs and workshops for children and young people as the fertile ground of such an architectural education.

There are workshops and education programs, as such an opportunity, for children and youth to develop a consciousness about their physical – architectural surrounding, sensitive and sensory experience / reflections of space, design culture, their rights and responsibilities in shaping and using city. In many countries, such as Finland, Iceland, and Turkey, institutions have been trying to integrate those programs to their first and secondary level education systems as a part of their national education policies (Report, Finland, 2001). Beside this, they have been referred in the process of developing national policies of architecture. The existence of those programs increases the potential of integrating art, design and architecture into the daily life as a cultural production. In this context, it could be useful to discuss education programs for children and youth with respect to their capacity to develop skills and qualifications associated with architectural education.

Each organization, institution or the school defines its aims, Kent Architecture Center's definition could be used as a clear and comprehensive brief:

“The aim was to engage young people in the urban design process in the hope that the next generation might be better prepared to play an active role in future in shaping the built environment, whether as citizens, designers or built environment practitioners.” (Shaping Places, 2005)

Their environmental design education program is “essentially about how the environment has been shaped in the past and how it might be created in the future. It involves young people in thinking about change, visualizing possibilities for change and testing these out through the use of various types of modeling, primarily drawing, photography, constructions, and digital images. The significant starting point is how pupils experience their environment, how they are able to make sense of it, how they respond to it and what it means to them. How are they able to impact upon it? How do they see themselves as agents of change? How are they able to deal with the process of change confidently, creatively and responsibly?” (ibid, p.10)

Those programs should not be seen as mere “awareness activities”. They consider understanding – discovering design, discovering and learning by design. A joyful experience of learning, discovery, creativity, design, and play is the common objective for all. The methods, tools, participants are diverse. The scope of this study, however, covers the similarities and commons.

The learning environment is organized to motivate curiosity, creativity and active participation. Participants are informed about the topics by means of different media, like powerpoint presentations, in situ discussions, seminars, etc. They are encouraged to have sensual and emotional experience of natural and artificial material, texture, color and light. The very basic idea is to give them an opportunity to discover, learn, produce, change, represent and share their environment by using design and architecture. They do not play “designish” games on architecture. They try to expand their perspectives on the city, find out surprising points they have not realized before, understand the “worthy”.

Programs can have organized curriculums –*ARKKI Architecture School for Children and Youth, Finland*-. It could be a single activity around a scenario or real story – *Netherlands Architecture Institute, Sonnefeld House Experience*-. In some cases volunteers, architects, artists, designers, planners, meet children and young people for a workshop –*Chamber of Architects, Ankara Branch, Turkey, The Lighthouse, Scotland, arc en rêve centre d’architecture, France*-. Some programs are supported by local governments. Teachers are encouraged to work with architecture and urban issues. They produce projects for schoolyards, bus stops, etc –*City of Gothenburg, Sweden*-.

Education programs and workshops are organized around diverse topics, couple of them as follows: discovering near environment, streets, squares with different media in different scales; restoring schoolyards, bus stops; designing imaginary schools, houses, cities and building models, making drawings; Discovering urban history through drama, storytelling and short walks; building model cities through role playing games; particular experiences on structural systems, sustainable design, or energy efficiency.

Activities can have well structured/detailed programs –*Kent Architecture Center, Shaping Places*-. Preliminary presentations, info sheets, pedagogical tools, and evaluation are organized carefully. Or, only the topic and material are determined, and the activity takes shape within the process –*ROTTERDAMBAU Festival, the Netherlands*-. In such cases, careful monitoring and guidance are essential. According to the capacity, interest or motivation of the children, the tutor can change the strategy immediately. The evaluation criteria are usually the enthusiasm, the improved awareness, and their curiosity for the next activities declared by the participants.

Learning outcomes of the programs are the progress held by the participants. They learn something they do not know before, they become capable of doing, seeing, understanding many things they cannot before. Their increasing effort for more involvement, awareness, change and interaction are the achievements of those programs. Actually the main success will be achieved when two conscious agents of urban life, the citizens demanding spatial quality and the professionals of spatial production meet. The result will be better and sustainable urban life. We believe in that those kids are having great sensual, emotional,

physical experience on visual culture, design, and architecture. It may not be possible to evaluate the achievements of this experience with quantity. But that experience could help them to improve their intellectual and cognitive base that is essential for understanding and design architectural space.

Those children experience space as a network of relations, get to know the dynamics and agents of those relations. They imitate those relations, and the roles of the agents, internalize the spatial production and use. By this way, they comprehend the city as the product of culture. They construct a chain of conscious starting from their own spatial awareness toward the spatiality of whole life by means of experience, knowledge and curiosity.

Beside the socio-cultural ones, intellectual-cognitive dimension is the main concern of this study. First of all, children learn to derive knowledge from physical activities. This could be defined as the cognitive operations on concrete experiences. Their play with different materials, techniques, modes of representation and scale help them to coordinate number of dynamics simultaneously. Especially in teamworks, they learn how to deal with different point of views. All these achievements evolve to the ability of multilayered – multidimensional thinking.

It is a fact that these extracurricular activities support the social practices and formal education programs for developing cognitive – intellectual capacities essential for architectural design education. This support gain importance especially when it gets a key role in career decision processes of the young people. For sure, none of those programs aims to educate future architects or planners. On the other hand, if they choose to be, participants' experience would definitely help them to navigate in the dark waters of the first year design studio.

The feedbacks of those programs, however, could be provided before the first year studio actually. As mentioned above, the time and method of evaluating the candidates for architectural design education are contradictory issues. To assess young people in terms of knowledge base and intellectual background that are supposed to be the promise of education is not reasonable. The tests, scales, all other instruments to measure interest, creativity, and skills have a generalizing character. Beside that, it is almost impossible to develop a “TEST” to measure SENSITIVITY, the motivating essence of design. Sensitivity can be observed, experienced, but cannot measured with an instrument testing academic achievement, interest, or intention. Especially in such circumstances where necessary conditions for developing sensitivity, supported by intellectual – cognitive qualifications, knowledge base and experience, are not provided for children and young people.

Then the most agreeable solution would be promoting and improving extracurricular experiences on design and architecture for young people searching for the best career. Those education programs should be supported and enhanced as a part of professional guidance and orientation.

Those workshops and programs give children an opportunity to develop a consciousness about their physical – architectural surrounding, sensitive and sensory experience/reflections of space, design culture, their rights and responsibilities in shaping and using city. Beside the social issues, they offer a set of experience, which vital for cognitive skills on which architectural space design is established.

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