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Children's participation in built environment design: The case of "Play Without Barriers" project

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Abstract

Since participation theory became a crucial issue in various disciplines after late 1960's, creating actual participatory processes generated an important question of debate. Today, in recent conditions the validity of urban design or local governing policies are evaluated depending on how much importance they attached to participatory approaches and social governance models. The earlier individuals start to involve participation into their lives, the more conscious they become. Therefore, participatory projects should consider the existence of youth and children in urban life and built environment design.

This paper discusses the effects of built-environment education on the young participants while introducing a brief explanation of an educational model named "Play Without Barriers" (PWB), supported by several shareholders and which is designed also as a child participation project. PWB is a long term project which expanded into three years and came up with concrete results such as a playground project designed by its users, children, who participated a 27 week long educational program. From the beginning of the project, the participants (children aged between 8-14) found the chance to work with all of these shareholders, represent their ideas and get involved in the whole process.

The general outline of the paper includes a literature review on the pros and cons of built environment education and participatory design, discussion of a case study (PWB) while mentioning the methods used in the education and application phases of this project, followed by a criticism of the process and declaration of the outcomes.

Keywords

Built environment education, Participation, Urban awareness, Children and architecture.

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1. Introduction

The built environment[1] depends on several dynamics such as politics, economics, design, human rights, all of which are deeply related with the discipline of architecture. As far as built environment has a multi-disciplinary context, the decisions affecting the quality of the built environment are taken by individuals from different professions. Each member of society, consciously or unconsciously, becomes determinant in the decision-making process by using his/her individual initiative. This initiative might be taken in urban management or in law-making as a legislator, as a member of an NGO or as a simple citizen in voting for urban policies or simply shaping his/her private properties. When all of these decisions come together, they form the urban quality of the built environment. Therefore, every single person, including children, ought to be aware of built-environment issues, independent of being a professional or not. It can be asserted that the quality and sustainability of the built environment depend on the public's acceptation of urban culture.

An efficient way to create awareness of the built environment is to actualize educational programs for the public about urban consciousness. This is required in order to procure ideal circumstances where each citizen fulfills his/her responsibilities about the built environment. Magliocco (2003) claims that in order to make "architecture", architectural education is not always an obligation, but the education of the public on built environment is a must. It should not be assumed that the importance of a qualified architectural education for the professionals is underestimated. But without consciousness of the public, the quality of the professionals is not enough to shape the urban environment. The quality of architectural environment is directly proportionate to the consciousness and participation of both the professionals and the users.

Built environment education[2], which will be examined thoroughly in the following chapters, aims to raise consciousness on environmental issues and motivate children and youth to take active roles as responsible public figures (Otero & Mira, 2003). In the Belgrade Charter (UNESCO, 1975), it was stated that the major target group of built environment education included pre-school, primary, secondary and higher education students as well as their teachers. One of the fastest and efficient ways to reach the entire public derives from attracting the children's attention and having them spread these facts to their social sphere. Based on this assumption, in order to constitute social benefit, different models of built environment education programs for children are being arranged all over the world by many institutions such as the Chamber of Architects, NGOs, municipalities, universities, museums, art institutions and private initiatives.

Built environment education also has crucial importance in involving the citizens into the urban decision taking processes through public participation. There are many aspects of participation. In the scope of this paper the educational benefits of the participatory process will be examined. The case study discussed in this essay is called "Play Without Barriers" (PWB). It is developed as a voluntary-based urban school aiming to create consciousness of the built environment and inclusion of young people into the development of their living environments. The content and the methodology of the educational schedule are briefly explained in the following chapters and in the conclusion; the qualitative outcomes of the project are evaluated.

2. Literature review

PWB Project, which is examined within the scope of this article, aims to develop the urban consciousness of the participants provided by a long-term educational program. Raising the urban awareness of the participants, they are expected to work in collaboration with the other actors taking place in the design process of the urban environment. The final result of this collaboration is expected to be a concrete design product that will be a part of the urban image. Being a part of this design process requires a satisfactory level of knowledge on these issues. Therefore, in order to determine the accurate methodology of the PWB Project, the

literature review was focused on two main topics. The first of these topics was "built environment education", and the second was "children participation in built environment", which is a necessity for supplying proper background for conscious participation.

2.1. Built environment education (B.E.E.)

The evolution of the concept of "built environment education" is parallel with the participation theory examined in the previous section. The current social and political conjuncture has caused new concepts, needs and interests to be shared on the social platform. The polyphonic and interdisciplinary approach which has transformed most of the disciplines in 1970's was also effective in built environment education. In this period, both artistic and scientific methods have changed, and interactive systems have started to be applied in all fields. Many professionals have started to define their professional identity through their relationship with other disciplines, creating an environment for interesting cross-sections. The intensification of interdisciplinary studies has also accelerated the development of built environmental education models.

Social transformation in the 1970s, the "citizen rights" of the individual, the importance of local policies and the fact that the citizen became an effective figure in the determination of local policies also brought a new opening to built environment education in terms of "participatory democracy". With the development of social policies, the user became a more active figure in the formation of architectural and urban space, and this has necessitated him to take part in these design processes. Therefore, the fact that the user became a partner in these critical decisions has created the need for environmental awareness and built environment education has become an inevitable necessity for the formation of qualified urban spaces and living environments.

The basic framework of built environment education was developed in the Belgrade Conference on Environmental Education (1975) and the Tbilisi Intergovernmental Conference on Environmental Education (1977). The common point of the publications published at the end of these two conferences is the subject of each individual's right to create a respectful stance towards the environment by equipping them with the necessary knowledge, skills and awareness. The aim of environmental education is to turn students into active citizens who are part of a democratic society (Otero & Mira, 2003).

Built environment education brings together many social factors due to its scope and method. Creating environmental sensitivity, enriching the educational content using different tools, completing the areas missing in the conventional education curriculum, and ensuring that a person exists as an active citizen in social life and acquiring a participatory identity in the decisions affecting his own life are among the basic objectives of built environment education. Built environmental education stands at the intersection point of these objectives, which we can collect under three main topics: environment, education and participation. Bishop, Adams and Keen (1992) expressed the intellectual scheme of the built environment education they define in the relations of "society and participation", "children and education", "human and environment" with a cluster diagram (Figure 1).

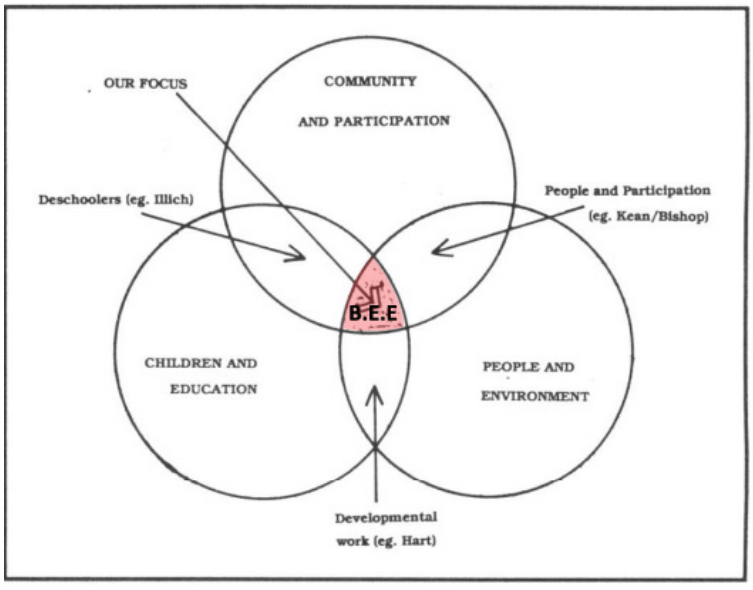

Figure 1. *Interaction of fields in B.E.E. (Bishop, Adams and Keen, 1992).*

Horelli (1997) mentions the importance of the existence of multi-stakeholders in built environment education. This is directly related with the participatory nature of B.E.E. The inclusion of various disciplines in the educational process, increases the quality of the educational schedule. Horelli also asserts that the least recognized one of 3P (Provision, Protection, Participation) formula which was mentioned in UN Convention of Rights of the Child is "participation". Therefore, a functional B.E.E. program should put the participatory approach forward. Because as Horelli refers from Alanen (1997) and Valantine (1997) *"the new sociology of childhood regards children as social actors and interactive agents who engage with people, institutions and ideologies, and who forge a place for themselves in their social worlds"*.

Sutton and Kemp (2002) emphasize that built environment education, which implemented with a participatory approach, is beneficial in the development of the child's creative thinking, aesthetic judgment, awareness of social inequalities, social communication skills and ability to design change. As a result of the application of the products of B.E.E activities, the children can also find the opportunity to balance the dominance of adults on the built environment. Because almost all of the places where children carry out activities that shape their social lives are shaped according to the decisions made by adults.

If the education process has an operational quality in itself, this will contribute to the formation of environmental awareness. If the student / participant can also have an influence in deciding on the scope and method of the schedule, and if the outcome of the educational program is aimed to solve an actual problem, this process might be described as an "action" (Jensen and Schnack, 1997).

B.E.E. Programs have been carried out for long years in many countries through various channels. These training programs include short and long-term trainings of architectural associations through volunteer architects, studies organized by non-governmental organizations, programs organized by municipalities, projects carried out with a university partnership, programs run by various museums and art institutions, workshops organized by private institutions and individuals.

These programs have some subjective qualities required by the conditions they are in, but they meet at a number of common points (Arın, 2018). According to this:

- The creation of sustainable, qualified living environments is possible by creating social awareness about the built environment. Achieving this goal in the long term is possible with B.E.E. programs to be provided from an early age.
- B.E.E. programs for children make it possible to reach larger masses by reaching their families and close environments.
- The discipline of architecture has a wide educational potential due to its rich content. B.E.E. programs for children can be used as a tool to create environmental awareness as well as supporting the courses in primary and secondary education curricula.
- B.E.E. programs contribute to the development of the participants' skills of creativity, experimentation, thinking in three dimensions, developing visual memory, using different expression techniques, and establishing interdisciplinary relationships. In addition, it provides an environment for them to improve their social communication and self-expression skills.
- B.E.E. programs encourage individuals to gain an active citizen identity starting from an early age.

Considering all these factors, the dissemination of B.E.E. models as an informal education system that supports formal education is important for the establishment of active citizenship awareness, the development of urban culture and the creation of qualified living environments.

2.2. Children participation in built environment

In her frequently referred article, Arnstein (1969) states that "the idea of citizen participation is a little like eating spinach: no one is against it in principle because it is good for you". In most cases participatory projects are

praised as they are reflections of democratic culture, and these projects are supported by institutions holding power mechanisms. But the main dilemma is whether this support is sincere or a pseudo attempt chosen by authorities in order to polish their images. The real citizen participation projects force the authorities to share their power with the participants. If the authorities tend to stay in their comfort zone and prevent from sharing their power to decide; the participatory projects stay on the "pseudo" side, which are defined as non-participation and tokenism in Arnstein's ladder. When "children participation" is the subject of discussion, the administrators' attitude becomes even more mimicking. As far as children are generally considered incapable of making decisions on their own behalf, the general inclination in children projects is working for children, rather than working with them. Hart (1997) adapted Arnstein's ladder into children participation, and there is a similar segregation between participation and non-participation.

Built environment education is directly related with the urban culture and the city which is the collective production of the urban dwellers. According to Harvey (2012), the right to the city is the urban dweller's right to reinvent and reshape the city according to his/her needs and wishes. But this right is a collective right, not an individual one. The urban dweller should be aware of the fact that the city does not belong to an individual, but to the whole society.

Awakening urban consciousness is only possible by promoting the values of the built environment at the early stages of human life. Built environment awareness becomes a part of the natural flow of life, only in case the child grows up with these values. But there is a general tendency to exclude children from built environment decisions, even though their lives are directly affected by them. As in many other fields, adults are making decisions about the built environment on behalf of children. But having a voice in the shaping process of his/her own built environment independent from the individual's age, gender, race is an issue that should be evaluated in the frame of civic rights (Hart, 1997; UNICEF, 1989). From this perspective, children should be included in the urban design process as active participants. It is a public responsibility to set the necessary platforms for child participation.

Being one of the pioneer researchers in the field of "children participation", Driskell (2002) claims that a major misbelief about child participation is that having been children years ago, adults assume that they have the ability to think and decide on behalf of children. But the point that escaped the attention is that "being a child / young" is an unstable context which changes in time. No one else can fully understand what it is like being a child in today's world, rather than themselves. Therefore, adults should take a facilitative role instead of being an oppressive leader in participation projects, considering that the needs and perception of children might have evaluated through time.

Banerjee, Uhm & Bahl (2014) claim that child's experience of space differentiates from adult's in several ways. Children's perception of scale, their vivid and varied experiences obtained from previous mental associations or memories, their perceptions shaped by more tactile instead of visual qualities of the surrounding environment are the main reasons of this differentiation. This situation reveals the urge for involving children in the design process of urban space especially when the subject is directly related with them.

There are a number of programs all over the world that come out with the assertion of being a children's participation project. But the important thing is to create a meaningful participation which includes the interactive participation of the children on the subjects affecting their individual and social lives. This participation process should be structured by the pursuits, aims and competencies of the children instead of passivizing them. An ideal participation project should have some specific qualities. It should be transparent, have a voluntary component, promote children to present their ideas, let them understand the whole process with all its aspects, offer the opportunity of build-

ing up the structure of the activity to children and let the children see the results of their participation and efforts (Chawla, 2001). By this way children might feel the sense of belonging to the project, totally understand the importance of their existence in the participation process. This transparency and awareness lead to success of the project, in which children become determinant.

The common approach, which ignores the rights of children as equal citizens, is the main reason why children participation projects generally fail to reach a satisfying level. But according to the 1989 United Nations Convention on the Rights of the Child, children have the rights to get a proper education, to be active participants of the social and cultural life, to have a word in any kind of field affecting them and to declare his/her ideas. Since the 1990's in the field of architecture there have been various short term and long term children participation projects which include children into the design process. Freeman & Tranter (2011) claim that children participation projects should not focus on making research about children, but making research with / by children. Professionals have to avoid alienating children from the design process.

Knowles-Yanez (2005) argues that including children in community decisions should be considered within youth activism, public participation, children's rights, experiential education and sustainability. She summarizes the benefits of including children in planning processes as: enabling personal and intellectual growth of the individual, turning the participant's ideas into action and creating a new platform for the community development. The collaborative projects where children find an opportunity to express their ideas on urban design and architecture would benefit both the children and the professional designers. Children should find a way to put their mark on urban environment through participation projects, instead of dealing with abstract projects that neither come out with concrete results nor go further than stalling them.

İncedayı (2002) identifies "participation" as the "initial step on the way to democracy" as participation is the main constraint of the concept of the democratization process. Along with being against giving privileges to a specific class, democracy intends to include all citizens into the decision-making processes that directly affect his/her life style. Therefore, built environment education should be provided for an extended age and social class span including all members of the urban community. In order to evolve urban awareness into a habitual reflex, it is important to start this education at an early age. Speaking of democracy, children should not be excluded from the common ground. Beckman's (2010) words briefly summarize the importance of involving children into urban issues through education and participation: *"It is a question of democracy; we mostly live in an urban setting and that is a man-made environment, influenced by different persons throughout history. We must give the students a belief that they can, through democratic processes, have a say in how the city will change."*

Referring to all of these factors explained above, it might be claimed that a successful built environment education model ought to be shaped both as a medium for creating awareness on environmental issues and also a direct way of participating in environmental design. Providing a proper environmental education and including children and youth in the urban decision-making process, generally assumed to be a "grown-up subject", is also important for letting children gain their self-confidence, which is important also for their social development.

The potential of built environment education supported by various disciplines, one of which is architecture, provides the range of knowledge that children require for their cognitive development. Meskanen (2010) states that: *"Through architecture education it is possible to support the child's natural inclination to be curious, study his/her surrounding, as well as make observations and conclusions from them. Architectural education links together sciences and arts, and supports the development of creativity."*

Sanoff (2008) defines IAP2 (The International Association for Public Participation) which was founded in 1990, as a union that seeks to promote and improve the practice of public participation in relation to individuals, governments, institutions, and other entities that affect the public interest in nations throughout the world. In 2006, IAP2 released a toolbox explaining the methods of public participation. According to this toolbox there are various methods used in public participation projects. For informing, fact sheets, open houses, web sites might be used; for consulting, public comments, surveys, focus groups, public meetings might be used; for involving, workshops and deliberative polling might be used; for collaborating, citizen advisory committees, consensus building, participatory decision making might be used and for empowering citizen juries, ballots and delegated decision might be used. Beyond these flyers, web-sites, TV programs, briefings, fairs, call-centers, information-centers, technical reports, forums, periodical meetings, educational activities, symposiums, charrettes are the other tools that might be used in public participation (IAP2, 2006).

In PWB project, in order to maintain a healthy participation process, a number of these methods were used. There was a focus group collaborating with professionals, there were periodical weekly meetings as a part of built environment education, there were workshops bringing the shareholders and participants together and decision taking mechanism was delegated partly to the participants. After explaining participation and built environment education approaches briefly until this point, the following chapters will focus on the whole process of PWB Project which is basically a children participation project using educational methods as a tool for participation.

3. Methodology of the case study: "Play Without Barriers" (PWB) poject

Participatory process is crucially important in urban design in order to construct a common good, promote sustainability of the project by establishing sense of belonging between the user and urban space. From this point of view, it might be assumed that including the potential users into the design process will raise the quality of the public space.

Considering all of the necessary criteria for a successful example explained in the previous chapters, a built environment education program called "Play Without Barriers" (PWB) was organized in Nilüfer (Bursa, Turkey). Bursa is the fourth biggest city of Turkey and located in the northwest part of the country. Nilüfer is a relatively new district of Bursa developed largely over the last few decades.

PWB is an educational participatory project, which tends to transfer built environment culture to the participants whereas include them in the designing process of an urban space. By this way, a playground will be designed with the contribution of its potential users for the common interest of city-dwellers. This project had education and realization phases. The project was coordinated by the Nilüfer Kent Konseyi (Nilüfer City Council)[3]. The author's participation in the project was as the coordinator and instructor in the educational phase. There were also other shareholders involved in the project including the Departments of Architecture and Education from universities in Bursa and Istanbul (Bursa Technical University, Istanbul Technical University, Uludağ University), the Nilüfer Municipality, the District National Education Directorate (under the Ministry of National Education), the Chamber of Architects - Bursa Branch, the Chamber of Landscape Architects - Bursa Branch, and "Bizim Ev" Social Life Support Center for the Disabled. The variety of the shareholders nourished the participatory character of the project. This project was conducted by the collaboration of a number of civil initiatives, academics and supported by the local government. From this aspect PWB is a pioneering example for Turkey in the field of citizen participation.

Our research questions in this project focus on:

- How can children get involved in urban participation?
- How can children become aware of their city-rights as a dweller and be encouraged to use these rights?

- How do children's designs of a playground differentiate from adults' depending on their perception and experience?
- How can children's design approach be reflected to real space?

3.1. The objectives of the PWB project

The main objective of the PWB Project was to provoke urban awareness and to transform this program into an "urban culture school" over the long term. This should not be confused with vocational education. Instead, PWB aimed to provide necessary knowledge for all urban dwellers in order to consciously participate in the urban design. The secondary goal of the project was to develop a preliminary design for a playground accessible for all children having different physical and mental abilities. Ward (1977) states that children are bored of standard playgrounds designed by adults and which do not consider the needs and tastes of the real users: children. In this case, they (the children) have to interpret the urban space in their own way. Regarding to the deficiency of satisfactory child spaces in urban environment, an educational schedule was designed in order to give the proper theoretical and practical knowledge necessary for requiring children, the potential users of the playground, produce a design for their own needs.

In the PWB example, the Nilüfer Municipality, one of the shareholders, perceived this educational program aiming to obtain a final product as an opportunity to have the young users participate in the urban planning process and made use of it by sponsoring the application phase. The playground site in the Municipality's property was assigned to the project that would be obtained from the works of the participants at the end of the educational phase. In this way instead of making an imaginary design, the participants experienced all stages of a realistic architectural / urban design process.

3.2. Participants of the PWB project

As explained in the previous section, the PWB Project aimed to let the children design a playground for themselves in which both disabled children and children without any disabilities would be able to play together. The project took its name from this specific purpose. The children who would attend to this program were chosen according to several criteria. The first criterion was to create an inclusive playground in which everybody could feel himself/herself involved. This could only be managed by applying universal design principles and letting people express their ideas on behalf of themselves, not anybody else. This meant disabled children should also find a way to present their demands. A total number of 30 attendees were planned, 6 of whom were disabled. The disabled children attended the project with the support of "Bizim Ev" Social Life Support Center for the Disabled. The second criterion was to involve the actual users of an urban space in the designing process. Therefore, the attendees of the program were chosen from among the residents and the students attending the schools nearby the project site. The third criterion was the age of the participants. They were between 8-14 years old, as this group was the most appropriate group to learn and benefit from the built environment education, while also being the potential age group to use the playground.

3.3 The implementation process of PWB project

The PWB Project had two phases. The initial one was the educational phase, and the following one was the realization phase. In the educational phase, the participant children attended periodic seminars and workshops about environmental issues based on architecture and landscape design. At the end of this phase, these participants produced a preliminary design by teamwork. The application phase was the process of transforming the children's preliminary design decisions into a quality playground in the urban environment. The most distinctive feature of this project was that the playground design proposed by participating children would be applied on an urban site. The technical procedure of the project was conducted by the responsible departments of the munici-

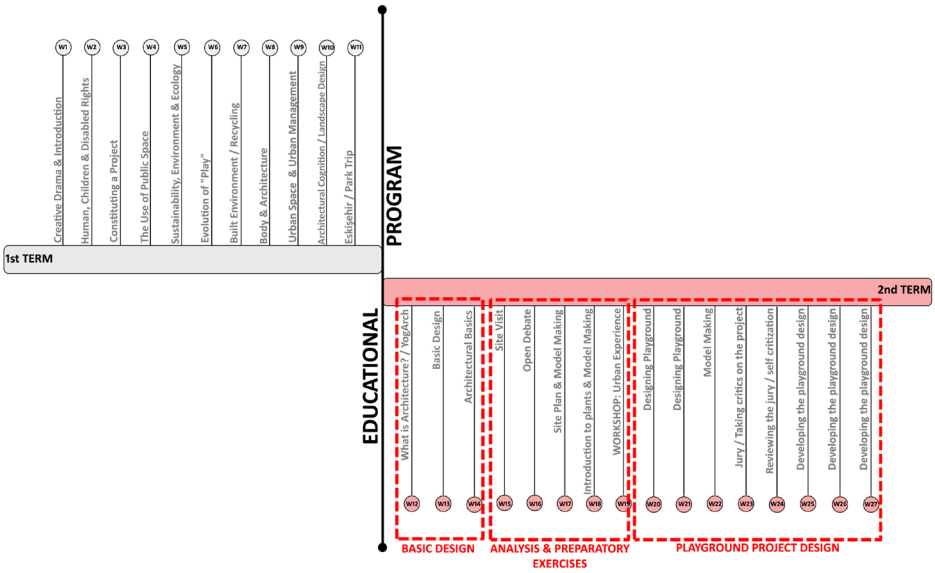

Figure 2. *Weekly schedule of the educational program.*

pality and during this process, periodic meetings were held with the attendance of the technical groups, educators and the participant children. The main intention was to involve the participants, who were the designers of the playground project, also in the application phase. As soon as the technical drawings were prepared by the responsible departments of the municipality, the construction started on 22.04.2014. The playground officially opened on 06.10.2016. In the scope of this article the educational phase of PWB will be examined thoroughly.

4.Discussion: The educational phase of PWB project

Educational phase of PWB involves the modeling of an educational schedule, the implementation of this schedule with the participants for 27 weeks and obtaining a playground design project during implementation of the educational program. In this chapter the educational schedule and the playground project, which is the final design product of this program, will be explained.

4.1. The educational schedule of PWB project

The first term of the educational schedule included 11 weeks, the second one included 16 weeks. All of these weeks had a sequential complementary context and might be observed under four main sections. The first section was between the 1st and 11th weeks involving theoretical exercises and seminars. The second section was between the 12th and 14th weeks involving basic design exercises. The third section was between the 15th and 19th weeks involving analysis and preparatory exercises for the playground. The fourth and last section was between the 20th and 27th weeks and included the design exercises of the playground (Figure 2).

The first ten weeks were theoretical seminars related with the design knowledge on various subjects, and the last week of the first term was a trip to a city park in order to examine real world examples. Each week there was a meeting on Saturday that lasted for 3-4 hours. Each of the seminars was given by experts of that topic.

The second term consisted of interrelated practical exercises that aimed to teach methods of design and representational techniques. The educational curriculum of the second term was planned to make the participants experience the design process of the playground project step by step. There were generally two professional designers each week in workshop-place to explain the task and help the participants without over-shaping their creativity. The methodology of these design activities was based on brain storming, team work, face to face education, table crits and self-representational techniques.

In the first section, which lasted for 11 weeks[4] , the basic theoretical background needed in the design process was given. The topics of the seminars were chosen in order to create a general urban awareness and supply necessary information about the built environment and an inclusive playground design. This theoretical knowledge was helpful for the designing process and essential to constitute urban consciousness. This theoretical background also nourished the participants' capacity of being a part of team-work. When all of the various topics mentioned in the seminars came together, they formed an essential cognitive development for the following design process.

The second section was based on various exercises that would share information about basic design principles and give clues about the ways and instruments of design. This section lasted for 3 weeks[5] . These basic design exercises were useful for understanding structural principles of architectural elements and spatial concepts, gaining hand skills, learning architectural representation techniques and some concepts like scale important for presenting an architectural design idea.

The third section included analysis and preparatory exercises before continuing to the design of the playground. They were about analyzing the project site and neighborhood, and setting the principal goals of the design. This section lasted for 5 weeks[6]. Depending on the data collected during the exercises of this section, participants prepared a three-dimensional site model which would be the basis for their design activities. These exercises enabled the participants to go through all stages of the environmental and architectural design process from the beginning. They experienced collecting data from the site and observing the characteristics of a project site, analyzing the needs, developing their ability to express themselves in public, doing research on a topic and presenting it to others and getting used to working harmoniously and productively with other individuals.

The fourth section lasted for 8 weeks[7]. The aim of this section was to develop the ability to design for a specific purpose, learn all factors affecting an architectural design, experience all different levels in the architectural design process (initial sketches, making up a requirement list, conceptual design, jury evaluation, redesigning the project, etc.), gathering a playground project at the end of a collaborative study as a final product. The children used various expression methods such as drawing, writing, model making, taking photographs, discussing in groups, etc…in order to visualize their design ideas. Besides the sessions in the classroom, the group made visits to a greenhouse and several times experienced outdoor playing activities that were turned into a part of the educational schedule in order to make children recognize the play opportunities that the natural environment offered, as they were mostly isolated from nature in their daily life being captured by technology. The participants worked in groups in order to consider other users' needs besides their own.

At the beginning of each meeting the participants received a sheet explaining the context of the workshop, aimed outcomes, hints that should be considered and the materials that would be used. During the workshops the participants were encouraged to express their ideas by question and answer method supported by table-crits, face to face communication and group discussions. The data collected from the questionnaires (searching the qualitative outcomes) applied each week were used for analyzing the process. Meanwhile the notes taken during the discussions, the video and camera shots were archived in order to document the project.

4.2. The final product of the PWB project educational phase

At the end of the educational phase, the participant children designed a playground project and prepared a 1/50 scaled model of it as a cooperative effort (Figure 3). The model and drawing charts prepared by children were exhibited to public and the residents living by the project area, at the end of the educational phase.

Figure 3. *1/50 scaled model of the PWB playground.*

Figure 4. *The Sense Labyrinth.*

Figure 5. *Giant ground chess.*

The participants developed various design alternatives during the whole process, but at the end they came up with a cooperative design that was found to be optimal for the needs of all users and convenient for the site. The design principles of this playground were to protect the existing natural characteristics and texture, design play areas that enable various play scenarios instead of sticking to stereotype play equipment, use the recreational opportunities that nature offers and develop a playground in which everybody with different physical and mental abilities, both children and adults, would share the joy of playing.

The participants' effort to create inclusive play spaces is also remarkable. There are distinctive play opportunities designed with this sensitivity. For example, the sense labyrinth is shaped by fragrant plants shorter than human length in order to activate sense of smell. The user might find the exit by following the change of smell which makes it easier for the visually impaired to find the way out. Also the width of the routes of the labyrinth is designed according to the spatial needs of a wheel-chair user (Figure 4).

The design principles of giant ground-chess make it possible for the visually impaired to use it. Both the checked ground and the diverse colored pieces are supported with different textures which make it easier to perceive by touching (both by foot and hand). Also the metal pins located on top of the pieces support the tactile perception (Figure 3).

The sand hill is designed as a meeting point for the children using wheelchairs and the ones who are able to walk. On one side there is a small sand hill which combines with a sand table on the opposite side. The children who climb the hill might play together with the ones who approach the sand table by following the rubber coated trail (Figure 6).

During the educational process, the participants were introduced to various examples of playground projects worldwide. The instructors avoided directing participants to the playscape zones of a playground, on purpose. The aim of this attitude is to motivate participants' design of the playground project accord-

ing to their creativities, personal experiences, tastes and needs. At the end, it is observed that the cooperative project that the participants designed instinctually turned out to embody all sorts of play zones that are classified to be present in an ideal playground. These zones ought to support the physical, cognitive, emotional and social development of children (Hart, 1993). Theoretically, an open-air playground should offer various play activities such as functional, symbolic and constructive play (Frost, 1992). From this perspective, the design elements of the PWB playground might be classified under these activity zones. A mud pond, climbing walls and trampolines are serving gross-motor development by presenting functional activities. The toy hospital and the sense labyrinth are spaces for manipulative play, whereas the geodesic dome is for open-space play, the tree houses for personal play, the tunnels and hills for nature play. All of these serve for symbolic and constructive play according to Frost's classification. Besides these there is a remarkable concern about the use of natural materials, creating an inclusive play environment and benefiting from the natural texture of the site. Depending on these facts, it might be assumed that the PWB playground has a qualified spatial potential including various play zones that are designed through transformation of the developmental needs of the child firsthand.

The design data is collected by the education team by various archival methods. The scaled model of the playground area and the playing equipment are photographed and also physically archived. The drawings, the questionnaires, the decoding of the interviews with the participants were all analyzed and archived. These were all shared with the realization team (the voluntary members of Academic Chambers and the technical staff of the local government) in order to acquire the most accurate application project. Also the data collected from the workshops are arranged as posters and shared with the residents living in the neighborhood of the playground area in accord with the transparency of the process. By this way the potential users were informed from the project before the construction process was started.

Figure 6. *Sand hill.*

4.3. The application phase of the PWB project

Once the playground project design was completed by the participant children, the application phase of the project, which is the most unique quality of the PWB Project, started. Most of other built environment education programs focus on design issues and ignore public participation. But when children personally experience a participatory urban design process and find the opportunity to work with various actors in this process, they feel themselves more involved. As far as the municipality, where the project site is located, was one of the shareholders of the project, the building (application) phase became easier to realize. Between 16.07.2014 and 22.04.2015 there were many meetings that brought all of the shareholders together. In some of these meetings the participant children also existed and witnessed the application of the project production process. The details of the playground features designed by chil-

Figure 7. *Application project of PWB playground.*

dren are solved at the end of long discussions held between technical people responsible for the application process, play equipment producers, educators and the coordinators of the educational process and the participant children. The construction drawings (Figure 7) were prepared by professional architects and landscape architects working at the Municipality with the technical support of members of the Chamber of Architects.

Until the ground-breaking ceremony, which was held on 22.04.2015, a number of revisions were made in the project until the technical staff and the participant children (designers) arrived at an agreement. The building process was proceeded by the contractors and supervised by the Municipality. This process lasted for approximately one and a half years. During this term, the participant children visited the project site and examined the building process and collaborated in some of them. For example, a mosaic workshop was held for the decoration of the entrance gate of the playground, and some of the project participants worked together with other children from the neighborhood (Figure 8). By this way, the participants of the PWB project and the potential users of the playground got involved in the construction process, either. Such kind of an inclusion make the participants perceive that they become a part of the solution of a real-life urban design problem, rather than dealing with an abstract design project. The realization process is extremely important for the success of citizen participation project as stated by Irvin & Stansbury (2004). The participants expect to get return on their efforts. Otherwise they feel stalled and lose their trust in the participatory process. Therefore, including the participants in each step of the realization phase and providing them the opportunity to witness the progress of the project is necessary.

When the construction process was over, the playground (Figure 9) opened on 06.10.2016 and has been actively used by the residents of the neighborhood and students from the nearby schools since then.

Figure 8. *Participants attendance during the application phase of PWB.*

Figure 9. *The air view of PWB Playground.*

5. Findings and results of PWB project

In order to evaluate the results of the PWB project, some questionnaires were conducted with the participants at the beginning, throughout the educational process and when the project was completed.

According to the answers that the participants gave to the questionnaire that was made at the beginning of the project, the participants weren't aware of user impact in built environment, user-participation approaches in urban design, citizen's rights and responsibilities arouse just because of living in the city and also they were complaining about the boredom of the child spaces designed by adults. However, according to the answers that the participants gave to the questionnaire that was made when the project was completed, the participants started to see themselves as crucial actors in the formation of built environment as being the users of it, their common life perception got stronger, they developed «city right» consciousness and they found a platform to mention their critics about urban problems, offer their solutions for these and show their contribution.

According to Polineva Rajeva (2017), some the main objectives of built environment education are to increase students` awareness of the spaces they live in and their understanding of the relation between people`s activities and changes in our environment both natural and built; to give children a possibility to exercise their sensitivity, imagination, taste and critical judgment; to develop children`s skills for observing, analyzing and problem-solving; to develop children`s skills for working in a team and communicating and to give students an opportunity to experiment with different techniques and real materials. When the pre and post-education questionnaires are examined, it might be seen that most of these objectives are realized in the case of PWB. During this long term program, the participant children found the chance to examine their living environment and the needs of different dwellers of this urban environment. In the setting of a mini-design studio, the participants found a chance to discuss, observe, analyze and develop solutions for a specific design problem. The feedback from the participants and their parents show that the competence earned as a result of this hard work, was reflected to their daily-lives and attitudes. Working in groups, they found the chance to develop solutions for the problems they determined. The post-educational data collected from children show that they learned to empathize with other people and establish a dialogue in order to solve common problems, due to the team working experience. During the process, the participants tried many expressional methods in order to narrate their ideas and make them possible to implement. This helped them improve their self-expression and communication skills.

The main difference of PWB from similar B.E.E. projects is that the educational process is handled as a long-term whole and the product that is revealed at the end of this process is implemented in urban space. In our country, projects related to environmental education, which have been leaded especially in the last three decades, have been carried out within many different institutions and organizations. However, most of these projects are shaped as short-term workshops. The emergence of a playground design project, which was entirely designed by children, has enabled PWB to be a unique example that concretely includes children in urban participation processes. The diversity of the project shareholders and the local government being one of them made it easier to implement the final design project. Also, an important fact that about PWB is that, the design project obtained during the educational phase was also constructed on site. By this way the participants' efforts weren't wasted. Correspondingly, their beliefs in participatory projects became stronger. Opposite practices cause negative prejudices against participation projects in the society by decreasing the motivation of the participants, as mentioned in previous literature review.

The model created with PWB combines B.E.E. and children / user participation in urban design processes.

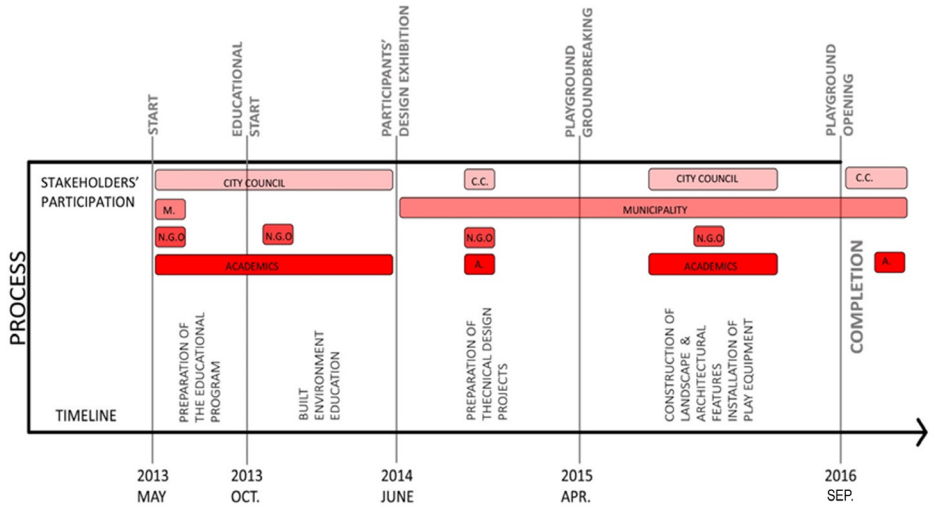

Figure 10. *The work sharing schema of PWB shareholders.*

The different components that make up the social structure of the city have come together in this context as project shareholders. In addition to the participants (children), which are the main keystone of the project, the meeting of other shareholders (academic environment, professional chambers, city council, municipality) on a common platform strengthens the participatory aspect of the project and increases its functionality. All shareholders have stated within the scope of the protocol signed at the beginning of the project, at what stages they can support the project process within their authority, responsibility and knowledge. Accordingly, all shareholders have contributed at different stages to the project process, ranging from the design of this social responsibility project to the implementation of the playground design revealed at the end (Figure 10). After the construction was finalized the meetings of the Child Assembly of the Nilüfer City Council started to take place in PWB Center which is located in the playground as a part of the participants' design. In some of these meetings, there are workshops focused on urban design issues. This situation supports the sustainability of the playground.

B.E.E. might be considered as a method that local government can use to ensure user / citizen participation in the design of the built environment. The implementation of the products of the participatory process proves that the ideas of the citizens' are really valuable. Such projects also enable citizens to establish a bond of belonging with the city. Within the scope of PWB, children and individuals with disabilities, which we can count among the disadvantaged groups in terms of direct representation, had the chance to express their opinions and contribute to the urban design process.

This long-term education project, which brings together participants from different social and cultural backgrounds, with different physical abilities, has also contributed greatly to the social development of children. In the programs that have similar goals but are designed for shorter periods, every participant cannot find the opportunity to express him/herself equally; within the scope of a long-term project such as PWB, participants can find an environment where they can easily express themselves.

6. Conclusion

Built environment education is related with being a part of urban culture rather than being a vocational education. Being born as a dweller, it is a natural right and responsibility of the citizen (regardless of his/her age) to be a part of shaping the built environment. There is a general tendency to exclude children from urban design participation projects, asserting that they are not mature enough. But the final products of PWB prove that when necessary conditions are supplied, along with proper cognition and education, children might become as

willing, successful and responsible as adults about urban participation. Furthermore, children might be evaluated as more creative compared to adults, as their minds are not as yet totally ruined by stereotypes.

Another important aspect of the project is to encourage children to participate in the public issues that are related to them before reaching adulthood. Being conscious about these subjects and being accepted as equal participants would raise the children's self-esteem and benefit their social development. According to Granath (2001), participation shifted from "object-oriented" to "process-oriented" way. In long term, participation supports the diffusion of democracy culture in public and improvement of citizens through learning.

Built environment education is crucial for the 21st century because it is about understanding not only the built environment itself but also the principles of design and participation. The main malfunction come across in participatory projects can be summarized under two topics. The first one is that of ignoring the necessity of informing the participants about the issues where input is expected and the cognitive infrastructure is to be set. In most urban participation cases, the inhabitants who have no information about urban culture are expected to get involved with the process. In such cases the applicability of the ideas becomes risky. The second one is not being able to actualize the participation projects for various reasons (for example, the outcomes which are not possible to realize as explained previously or the neglecting attitude of the authorities). Generally, patronizing projects are applied instead of the ones obtained from the participatory process. This attitude results in the disenchantment of the participants and prevents them from being involved in future projects. But as Arnstein (1969) stated, participation should be a process in which "nobodies" become "somebodies" with enough power to make target institutions responsive to their views, aspirations and needs. Starting from this point of view, the PWB Project is designed in order to eliminate these two deficiencies. The educational phase is constructed with the aim of raising awareness of the individuals on urban and built environment issues. The application phase proves that the sacrifice and the efforts of the participants are appreciated. The variety of the shareholders of PWB supports the democratic culture notion trying to be spread as a side effect of the project. Meanwhile, since the local municipality was also one of the shareholders, it became easier to solve legal and financial problems in the application phase of the playground. Besides these positive effects, it must be indicated that the large number of the shareholders caused the application phase to progress slowly at some points. Bringing all the shareholders together and reaching a consensus required more time than it had been planned in the beginning.

In this study, it is attempted to make children become aware of their city-rights as dwellers and encourage them to use these rights by supporting them with a built environment education program providing the necessary knowledge and foundation. At the end, it occurred that the benefits of such a project are not limited only to children. As far as children are the best way to reach a wider populace starting from their family and neighborhood, the knowledge provided in these educational programs will rapidly spread out among the society. Built environment education is important for all members of the urban society not for designing the urban environment according to their taste but for noticing the difference between qualified and unqualified environments and being able to use their civic rights to live in a qualified built environment. At the end of the educational phase of PWB, the participants understood that they were some of the main actors shaping the built environment. They developed a civic identity and a civic praxis. As mentioned in the previous chapters, PWB aimed to raise awareness on urbanism and citizenship, make urban youth take actions against urban issues related to the public life. Therefore, it can be assumed that PWB achieved most of its goals by strengthening the common life perception, making children and youth request their demands about built en-

vironment and present solutions for the problems they criticize, encouraging the participants to enhance civic engagement with urban life. Lee (2006) states that design experts design with users in concrete space, rather than designing for users from the abstract space in participatory projects. Based on this point of view, including the real users in the design process is the main motto of PWB Project, as a key to create "living" spaces.

Another important benefit of the project was making the participants put themselves in other people's shoes. As a group working together, all participants (both abled and disabled children) searched for the ways of creating play spaces that they would all enjoy playing together. The original playing spaces / equipment designed by the participants which are explained in the previous chapter (such as sense labyrinth, sand hill, ground chess) show the participants' sincere approach to obtain inclusive play spaces. Regarding these outcomes, it might be predicted that if there would be an opportunity to maintain this type of project with larger groups, the urban culture could be widely disseminated. In this case, with a more conscious urban community, it would be possible to retrieve a more qualified and sustainable built environment from which all citizens and institutions would benefit.

Endnotes

[1] Built environment: Human-made surroundings that provide the setting for human activity

[2] Built environment education is based on the development of spatial perception and awareness and also transfer of knowledge about the built environment.

[3] The City Council is a civic initiative which aims to promote every citizen without any discrimination to become involved in local government mechanisms and encourage them to take an active role; bringing various working groups formed on a voluntary basis together under the same roof.

[4] between 26.10.2013 – 18.01.2014.

[5] between 15.02.2014 – 01.03.2014.

[6] between 08.03.2014 – 05.04.2014.

[7] between 12.04.2014 – 31.05.2014.

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