THE IMPORTANCE OF PRESCHOOLERS' EXPERIENCE IN KINDERGARTEN DESIGN

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A number of studies have revealed that experiences gained during preschool years have a great impact on the subsequent accomplishments of an individual, and that kindergartens have a major influence on child development since these are places where children spend most of their preschool time. Early childhood education has a special importance among all other education processes because development is shaped at a large extent during the 0-6 year period of children. During the first three years, care for children is given at various establishments, such as kindergartens and day care centers, but especially at home, and various programmes are carried out to support early childhood development. Preschool education is based on programmes delivered at playschools or preschools for children aged 3 to 6, in order to give children a better start in life. In Turkey, preschool education is delivered generally by official and private independent playschools (for children 36-72 months of age) or in playschools that are established within schools (for children 60-72 months of age).

The process of preschool education contributes with short and long term influences on children and society since early childhood development is viewed as a key to social development. The quality of the physical and social environment affects child development in this education process. In order to improve the conditions of the physical environment, designers can try to reach best design solutions, by getting children's ideas about their educational environment. In a study conducted at a kindergarten in Bursa, it was assumed that the ideas of preschool students about the physical environment in kindergartens can help designers to gain knowledge about children's requirements and this may spearhead new designs and inventions for supporting healthy child development (**1**). The questions that the children were asked in the study aimed to learn children's evaluations and expectations about their settings. The most important result reached in the study was the observation of the ability of 5 year-old (between 48-60 months of age) and 6 year-old (between 60-72

months of age) group of children to construct successful verbal statements about their physical environment by referring to their own experience. In short, our research has revealed that designers can obtain important data for the design process by consulting children. It can thus be concluded that understanding children's ideas on the space they use must be a policy for meeting children's needs and improving the conditions in preschool environments.

INTRODUCTION: SOCIAL VALUE OF PRESCHOOL EDUCATION

Preschool education is a process in which children leave the restricted home atmosphere to join a wider social network. High-quality education contributes to a child's intellectual, social, physical and emotional development (Cirhinlioğlu, 2001). The process running between the ages of 0 and 6 is one of the periods with fastest physical, intellectual and social development. Children gain most of their basic motor skills and abilities as a part of physical development in the preschool period. Moreover, this is the period when personality, social sensitivity and creativity start to be shaped. It is known that the development process that takes place in this period greatly affects subsequent years and that 60-70% of learning ability is gained in the preschool period (Başal, 1998; Berk, 2003; Bilgin, 2006; Poyraz and Dere, 2001).

In recent years, preschool education has been enjoying growing interest and popularity. The increase in the rate of working women, the acknowledgement of the importance of preschool education for the future of societies, the desire of families for their children to make a better start at school and in life, and the observation of long-term positive effects of high-quality early childhood programs can be cited as reasons for the growing demand for preschool education (Wortham, 2003). Considering that today's children spend most of their time in school buildings and that the interest in preschool education has grown, the physical attributes of such buildings will certainly gain importance based on their effect on child development.

It has been found out that the physical environment in education buildings has a great impact on children's behavior. Interaction with the physical environment is as important for children's learning as people that surround them in their daily life (Maxwell, 2007). As Nicholson (2005) points out, children discover the world through their senses. Thus, by nourishing senses and emotions, architecture plays an important role in child development (Day, 2007). Day further indicates that the sensual input during childhood is necessary in preparing for adulthood, and expresses discontent for the current negligence of the importance of design. Similarly, Walden (2009) claims that children's senses should be stimulated in educational environments, and that new experiences and entertainment opportunities should be offered to children by means of a variety of materials (Walden, 2009). According to Olds (2001), a well-planned preschool activity plan will guide children towards discovering and using materials. In fact, preschool education environments are spaces capable of offering children a rich variety of stimulants, using both indoors and outdoors. Especially carefully designed outdoor playing areas have proven to contribute to children's physical health, mental development and social intelligence (Herrington, 2008). As Dudek (2000) indicates, a successful design for children's facilities is "a design that gives the child opportunities to discover, develop and learn". In short, well-equipped

preschool education space offers ideal physical environment that supports children's development by providing both indoor and outdoor areas.

The advantages gained by children in the process of preschool education are viewed as a key to community development, in short and long terms. Jacques van der Gaag (2006) indicates that the experience gained during early childhood would ensure important acquisitions in terms of long-term development of a society. The short-term benefits of early childhood development include mental development (higher IQ, practical reasoning, oculo-manual coordination, readiness for reading, …), health (lower risks of getting sick, less digestion disorders, less growth inhibition, better hygiene and healthcare, …), and social development (better developed perception of personality, lower aggressiveness, more interactive playing, better relations with peers and parents, more social compatibility, …). The long-term effects of such gains on society, on the other hand, are described as "human development" and "economic growth". Therefore, early childhood development programs should be considered as a contribution to long-term economic development strategies. Shonkof (2009) claims that the foundations of a successful society are laid during early childhood development. It is emphasized that children, who are given the opportunity to reach high quality education programmes during early childhood years, will have a greater chance to become healthy and successful adults in society.

Parallel to the growing awareness in the importance of early childhood education, life-long learning approaches, which accept learning needs to be continuous for social development, have gained importance starting from the 1990s. This approach has created a need to reconstruct education systems, to increase resources for education and to make legal regulations in various countries. The goal is to teach people how to ensure that learning will continue throughout the course of life. In this context, the most important period is accepted to be the preschool period, where the foundations of human development are laid; and supporting preschool education is considered as one of the primary goals of the approach. Increasing the quality and influence of education is accepted to be the foundation of a life-long learning approach, and therefore it is given a special importance (DPT, 2009).

DEVELOPING THE PHYSICAL ENVIRONMENT BASED ON CHILDREN'S IDEAS

Implementing successful educational spaces that will support child development is a task that requires knowledge of children's needs, development process and the educational program. A number of studies (Clark, 2005; Dudek, 2002; Jilk, 2005; Prakash ve Fielding, 2007, Sorrel and Sorrel, 2005) claim that "participation in design" processes need to be activated in order to ensure this. For example, Jilk (2005) argues that the most important issue related with the design of the physical environment of children's education facilities is to give teachers and students the opportunity to create their own learning environment instead of designing everything for them. According to Jilk, an environment is not complete without participation and opportunities should be provided for participation. According to Prakash and Fielding (2007) in order to overcome static solutions that inhibit learning, it is necessary to think for which types of activities an education environment will be used and to understand user experiences. Clark (2005) draws attention to the question

of identifying the real users of the education environment during the design process and stresses the necessity of participation in the design process.

The concepts of "Child Involvement and Contribution" or "Child Perspective" have gained more importance in children studies, political programs and practical pedagogical activities since 1990s (Skivenes and Strandbu, 2006). The importance of participation can be better understood in relation to the convention on the rights of the child. The agreement is a human rights document accepted and ratified to the widest extent in history. In fact, it has been ratified by 191 countries, all except two members of the United Nations. Signed in 1989, the Convention on the Rights of the Child has accepted, for the first time that children have the right to participate in decision-making processes that may be relevant to their lives and to influence decisions taken in their regard. The basic principles that guide children's rights in the convention are non-discrimination, best interests of the child, right to life, survival and development, and participation. In the convention, participation has been defined as the right of the child to express his or her own views freely in all matters affecting the child (**2**). The 12th Article of Children's Rights Agreement, which explains the rights of children to express their views on issues related with them, indicates that adults need to respect the rights of children, that children have the right to be consulted, that they should be able to reach information, and that they have the freedom to speak, select and change the decisions related with them (Holmes, 2005).

Participation has different definitions in various sources. For example, Skivenes and Strandbu (2006) explain that the central element of participation is children being evaluated as "individuals, with opinions, interests, and viewpoints that they should be able to express". Another observation defines participation as the ability of children to take part in decision making, activities and processes on matters that relate to them (Şener, 2006).

A variety of large and small scale design participation initiatives have been undertaken to get the views of children on the characteristics of the spaces they use, based on the belief that children are one of the groups that comprise a society (Francis and Lorenzo, 2002; Hart, 1992; Sheat and Beer, 1989; Sorrel and Sorrel, 2005). Efforts to integrate children into design initiatives have increased as participation gained significant popularity in urban planning and design. International organizations like UNICEF view the issue of making cities more friendly and sustainable as the best way to support children's participation. Projects such as UNICEF's "Child Friendly Cities" and UNESCO's "Growing Up in Cities" are significant initiatives in this field. It is noted that in some cities in the United States and in Italy, children's views make their way into planning and policies (Francis and Lorenzo, 2002). In addition to large-scale initiatives concerning the whole city, a variety of smaller projects have been conducted in educational environments. Important initiatives in this context include "Joinupdesignforschools" in UK, "Architects in Schools" in US and "1000 Mimar 1000 Okulda" (*1000 Architects in 1000 Schools*) in Turkey. Participation initiatives are an important experience that supports child development. For instance, in the context of the "Joinupdesignforschools" initiative, children's experience in participatory design is viewed as a process supporting their skills. Among children, this process has been described as a "life changing experience" (Sorrel and Sorrel, 2005).

Participation initiatives are important experiences that support child development. For instance, in the context of the "Joinupdesignforschools" initiative, children's experience of participating in design is viewed as a process supporting their skills. In this study, the skills that children gain from participation have been defined in three levels, namely individual, cognitive and working skills. "Individual skills" have been defined as individual awareness, openness to new ideas, organization, motivation and responsibility; "cognitive skills" have been defined as creativity, problem solving, practical thinking, spatial awareness, aesthetic judgment, observation and evaluation; "working skills" have been defined as cooperation, collectivism, organization, citizenship, communication; and the most important skill gained has been defined as self-confidence. While it was expressed that the students were not expected to gain similar skills equally, the important issue was to get in contact with all children. Among children, this process has been described as a "life changing experience" (Sorrel and Sorrel, 2005).

Many studies demonstrate that participation initiatives in the process of education generally take place in primary education and high schools. It is claimed, however, that if methods that suit design participation initiatives are used, it would be possible to work with children of all age groups and participatory design studies can be developed for children even at early childhood (Hart, 1992; Clark, 2005; Clark, 2010). The sensitivity of children to their surroundings is reflected in early ages (Gür and Zorlu, 2002). In a study testing environmental awareness of preschool students in rural and urban surroundings, 3 to 5 year-old male and female children have been observed to have reached a level of development enabling them to respond to and comment on questions asked about the environment (Cohen and Horm-Wingerd, 1993). In another study, children above the age of 3 have been observed to be willing to be a part of a research (Alderson, 2004), and that children show a great desire to participate if adults try to understand them (Hart, 1992).

Clark (2005, 2010) claims that in the preschool period, children are experts on their living and it is important to hear what they say. She suggests an approach using multiple methods for preschool participation initiatives, which she defines as the "Mosaic Approach". The tools that she suggests include observations at preschool education facilities, one-to-one or group interviews, use of cameras, site visits, map preparation and interviewing managers and parents. She claims that the use of participation methods with small children would open up new ways of communication, while the use of different methodologies would facilitate our understanding of children's lifestyles by providing different opportunities for children to express their views and experience. Relating to the necessity of participation in the design process, Clark indicates that the question of who the real customer is, should be inquired, further claiming that conventional methods of participation (such as observation and interviews) should be combined with research of new innovative methods of participation for children under the age of five.

Despite the importance of participation in early development, many studies demonstrate that participation initiatives generally take place in primary education and high schools. Failure to involve users (3-6 year old children, teachers, managers, staff) in the design of preschool education buildings, may be explained by the fact that such buildings are usually related to small-scale and small-budget public organizations. Dudek

(2000) notes that, while participation initiatives in education environments are undertaken in the scope of larger-scale public organizations, newly constructed and existing daycare facilities usually operate under smaller-scale public organizations, which leaves them behind in terms of quality; and their low budgets prevent them from considering users' opinions in the design process. However, implementing successful educational spaces that will support child development is a task that requires knowledge of children's needs, development requirements and the educational program.

In addition to the fact that preschool education facilities are smaller in size and budget compared with other governmental buildings, the concerns about working with children who are users of the buildings make it difficult for initiatives that aim to involve children in design in early childhood period. To explain this, Hart (1992) indicates that it is believed that it is not always possible to receive true answers from children, that the memories of children are weak, and that children will try to say the right things to make the interviewer happy. Hart argues that these prejudices are not true and a five year old child will give correct answers if sponatenous information is asked and if the subject is relevant. It is also indicated that children do not have the same communication skills as adults, more sensitivity is needed, and that methods that will increase children's will to participate should be used (Hart, 1992). Holmes (2005) explains in detail wrong beliefs and prejudices that reduce the interest in working in relation to early childhood. The tendency to believe that the working process is complex, mysterious, time consuming, strict and boring, that research will produce facts which will be hard to question and which will not provide real benefits, that only experts will be able to work are some of the prejudices among researchers. On the other hand, the truth about early childhood research is completely different than the explanations above. It is both interesting and difficult to work with children in early childhood. In fact, research can be done by anyone, and working with children provides opportunities to discover facts that can create change, opportunities to understand complex subjects about early childhood development. Therefore, it is important for individual change and development. In addition, the process related with early childhood research has a positive impact on the researcher, children and the environment and the participants both physiologically and socially (Holmes, 2005). Jones (2004) indicates that participation of children should not be prevented due to reasons such as research not being suitable to children, lack of time, social pressures and expectations, communication obstacles, etc. For a successful research, the goals of participation and roles of children should be clearly explained to the children, the study needs to be transparent, the children need to know why they are partners and the study, its language and methods should be prepared in accordance with the capacity of children (Jones, 2004).

THE STUDY: LISTENING TO PRESCHOOL CHILDREN

While the importance of the physical environment for a child has been noted in a number of studies, it is also claimed that such studies dealing with the relationship between the child and the environment, actually, only deal with "social and cultural aspects" of a child's environment and fail to establish sufficient relationship with a child's activities and experiences (Kyttä, 2003). In Turkey, likewise, studies related with children are generally conducted by social scientists and deal with the matter in

social, economic, political and psychological aspects, failing to provide sufficient amount of information on the physical environment. Despite the country's predominantly young population, it is claimed that desires and needs of the 0-12 age group, which constitutes a significant portion of the population, are not sufficiently determined and no data is available to reflect the group's desires and needs in architectural design (Gökmen, 1996). It is, therefore, believed that a study offering insight into children's views would be a contribution to the field. As mentioned before, the importance of participation in preschool years has been emphasized by many researchers and different techniques have been proposed to establish communication with children.

In this study, it is claimed that learning the positive and negative views of preschool children about the environment in which they live will provide designers with data useful in the development of their design concepts. In this context, the study focuses on how children evaluate physical conditions in their kindergartens as well as their expectations. While the necessity of using different techniques for understanding children's views and creating various communication channels (utilization of visual tools like as photographs, children's drawings, mapping etc.) by which children would be able to express themselves, is acknowledged in design participation efforts, a small-scale project aimed at observing the level of children's capability of verbal self-expression has been deemed appropriate in the scope of this study and the interview method has been selected for this purpose. Children's comments on the physical conditions of their school were obtained in a survey conducted at a kindergarten in Bursa with a view that, at the same time, the level of small children's capability of commenting on the physical characteristics of their kindergarten could be observed.

The study site is a state-owned facility designed as a kindergarten in Beşevler neighborhood in Bursa (**Figure 1**). The facility receives a total of 280 students, 180 of whom are in the age group of 6 (60-72 months of age children), and 100 are in the age group of 5 (48-60 months of age children). Additional classrooms are not available for the age group of 5 because the emphasis in this school is on functioning as a preparatory facility for the elementary school. The building consists of 3 stories: ground floor, first floor and a cellar. The ground floor accommodates administrative units and a dining hall, while classrooms are located on the first floor. The cellar has a

Figure 1. General view of the facility kindergarten.

Figure 2. View of a large classroom.
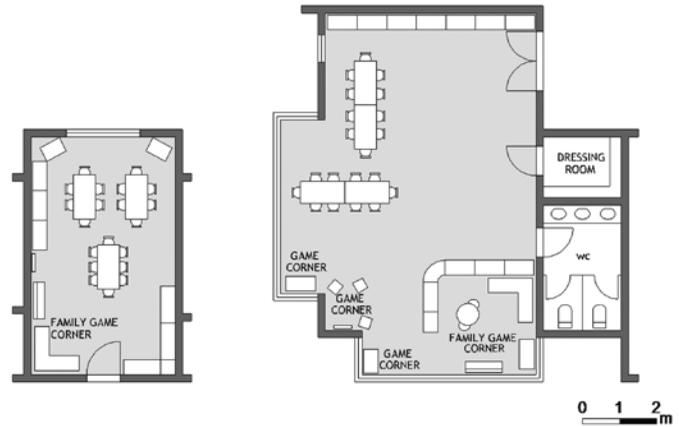
shared playing space, a drawing classroom, a computer room and a general purpose hall with sports equipment.

Due to high demand, the kindergarten has switched to operating in 2 shifts, with the large space previously used as bedrooms now converted into a classroom. Large classrooms are approximately 60 m2 (**Figure 2**), and are used by 20 students. Other classrooms have an area of around 30 m2 and receive the same number of students (**Figure 3**). In the presentation of children's comments in the text, the classrooms are identified as large and small. In order to understand the differences between the sizes of two educational facilities, the plans of the rooms, which are defined as large and small classrooms, are given below (**Figure 4**).

24 male and female students, selected by random sampling from among children in the kindergarten, were interviewed on their ideas about the physical environment which they use. Among 24 male and female students with equal gender ratios, 8 children were from the age group of 5, who all used large classrooms, 8 children were from the age group of 6, who used a large classroom, and another 8 were from the age group of 6, who used a small classroom.

The questions that the children were asked in the scope of the study have been formulated to learn children's views about their physical environment and to understand their expectations from kindergarten settings. The questions were organized to learn the positive and negative aspects of outdoor and indoor spaces for children, with the aim of identifying spatial experience and design solution relationship. Despite the not too great number of interviewed children, results obtained in the study have also been expressed in percentage rates to clearly indicate proportions.

Most Popular Place at School for Playing

Playing is defined as a child's most important activity in preschool period. It stimulates the child's imagination and promotes the development of intelligence, muscles, imagination and social skills, guiding children towards understanding life. When playing, children step out of the context of everyday behavior, which serves as a basis for their development (Oktay, 2001; Poyraz and Dere, 2001; Singer and Singer, 1998). These evaluations have been verified by our case study. As their favorite place at school for playing, 66% of female respondents indicated the classroom, 17% the garden and another 17% the cellar. Male respondents differed in their responses, as only 17% of them preferred the classroom while 50%

preferred the playing space in the cellar (**Figure 5**), 25% the garden, and 8% the gymnasium.

The results indicate that girls preferred more static games such as family game and tended to choose the classroom for this reason, while boys chose surroundings where they could be more active and dynamic due to their playing preferences. Considering the large and small classroom split, the fact that all girls of age groups of both 5 and 6 studying in a large classroom preferred the classroom as their favorite playing place, while only 25% of the age group of 6 studying in a small classroom preferred the place for playing may be interpreted as indicating that students tend to choose playing space outside classrooms in case space is insufficient. The fact that two male respondents, who chose the classroom for playing, both study in a big classroom, supports this hypothesis.

It has been observed that space requirement is the least variable parameter in comparative studies made on kindergartens in different countries and contexts. In UK, for instance, a requirement of at least 2.3 m2 for indoor space applies, whereas the minimum space per child in Italy for the age group of 3-6 is required to be 7.5 m2 (Dudek, 2000), the current average being 39 m2 per 18 children, i.e. 2.2 m2 per child (Olmsted et al., 2001). It is noted that space less than 2.32 m2 per child would cause negative impacts. The minimum space requirements in the US according to the Head Start Performance Standards and NAEYC accreditation criteria is 3.25 m2 (Montie 2001). In their studies, Smith and Connoly (1980) and Gifford (1997, 2002) claim that 2.8 m2 to 3.7 m2 of space should be provided per child (Walden, 2009).

Space requirements in Turkey differ compared to other countries, as 1.5 m2 of playroom space per child is found sufficient (Poyraz and Dere, 2001). The space identified in this study as a small classroom has an area of 30 and is used by 20 children. 1.5 m2 which is believed to be the smallest sufficient size, is small when compared with defined standards. Children's responses in our pilot studies support our argument that this space is insufficient. The large classroom has a 60 m2 area and used by the same number of children. The 3 m2 area per child is sufficient according to the standards in other countries examined in the study. Comments made by children in two different rooms have shown the impact of the size difference. Even though the area of both the large and small classroom is sufficient according to the Turkish standards, it is interesting to see that the children in the small classroom mostly prefer outside spaces for playing. In contrast, the children using the large classroom prefer the classroom environment for playing. Based on these evaluations, it can be suggested that new ideas need to be developed on minimum space requirements in order to actually satisfy the needs of a child.

Most Popular Location for Playing Inside the Classroom

Asked about their favorite location inside the classroom for playing, 88% of the girls in large classrooms indicated the family game corner, and 12% the hairdressing game corner. Likewise, 75% of the boys in large classes tended to prefer the family game corner. Responses from students in small classes were distributed almost evenly among different options such as "tables, everywhere, beside the toy rack and seating corner with chairs". Offering a lot of space, large classes allow having corners where children can play. Playing corners of this kind (**Figure 6**) have been identified by 81% of the children in large classes as their favorite place for playing inside

Figure 5. Playing space in the cellar.

Figure 6. Location in a large classroom described as the family game corner.

the classroom. In contrast, location of toy racks all around small classrooms without being concentrated in a particular corner, and failing to delineate areas specifically allocated for playing, make it difficult for children in such classrooms to respond to this question. It has been observed that generally, boys and girls tend to prefer a location delineated by racks and chairs of their size to form a playing corner as their favorite place for games.

Least Popular Place for Playing

Asked about their least favorite place for playing at school, 63% of respondents answered by saying "there is no such place", while other variations of responses referred to anywhere outside the classroom. 75% of the respondents from small classes said that there was no such place, while the rest referred to the seating corner and floor (cold locations). In this question, overlaps among playing locations in small classroom and absence of defined areas have been observed to make responding more difficult. Absence of defined playing areas in small classrooms precluded children from expressing their views on their most and least favorite playing area in the classroom.

In contrast, in large classrooms, where creating different special areas was possible, children were able to indicate areas of the classroom in which they least liked to play. In such classrooms, 63% of the girls indicated that they did not like the empty area at the center of the classroom (**Figure 7, 8**). The reason why this area did not enjoy popularity was stated as "everyone is running and can therefore crash and fall down". Another response to the least favorite area question was the hairdressing game corner. The reason provided was "nobody plays there and it's very boring". In large classrooms, 50% of male students thought that the hairdressing game corner was boring, 38% thought that the empty area at the center of the classroom was boring because everyone was running there. It has been

generally observed that the empty area at the center of the classroom was described by 50% as the least favorite place to play because the area does not accommodate any teacher-managed activities and bears risks of falling down or collision. One suggestion, as a result of these observations, would be to use this area for activities such as dancing, games, etc., followed by more static events involving different activity items. The fact that the children regard the hairdressing game corner as boring may result in the temporary removal of items in that corner after consulting the children and observing the change in their interest. This can prevent formation of redundant areas inside the classroom.

33% of girls, when asked to identify "the least popular place in the garden for playing", indicated the sandbox, justifying their choice by stating that they "get dirty in the area and are disturbed by the sand that gets into their shoes". Areas least favorite for 17% of the respondents were the "flower sections because thorns of the plants may jab" and "vegetable garden because shoes get into the mud". 8% stated that they dislike the empty area at the school entrance. 42% of the girls indicated that there was no place in the garden that they did not like. 17% of the boys named the sandbox and 17% the garden (the area accommodating the vegetable garden) "because one can't play comfortably there" and 8% "the chess area because the chess pieces are not easy to move and playing in that area is not fun". 66% of the boys indicated that there was no place they disliked about playing in the garden. It can be said that girls' higher sensitivity to cleanliness or health issues compared to boys played a role in the responses. Based on these results, it can be claimed that the garden, which consists of different parts, provides boys and girls an opportunity to select their playing areas.

The Most Dangerous Place at School

While 67% of the boys pointed out that there were no dangerous places at the facility, 17% of them indicated windows and another 8% the garden as dangerous locations, with the latter explaining that "the garden bears the risk of stumbling upon stones surrounding flower areas and falling" (**Figure 9**). Further 8% of the respondents described the empty space inside the classroom as the most dangerous place bearing the risk of "falling" and "falling when running".

43% of the girls indicated windows, 8% corridors (risk of falling due to wet floors), 8% toilets (risk of falling due to wet floors), 8% staircases (risk of

Figure 7. Area in a large classroom identified as empty space during an activity.

Figure 8. Another use of the empty space.

Figure 9. Planted areas upon whose borders the children indicated they could stumble.

Figure 10. The staircase on which the children are afraid of falling when it is crowded.

falling due to collision because of crowd) and 8% garden (stumbling when running) as the dangerous place at school while 25% responded by saying that there are no dangerous places at the facility.

Compared with boys, girls responded at a higher rate in identifying dangerous places at the facility. Among the 33% of the boys indicating that there are dangerous places at school, responses were evenly distributed among "windows, empty space inside the classroom and garden" as places posing the risk of falling. Responses by girls, who also identified corridors, toilets and staircases as places with a risk of falling when the floors are wet (Figure 10), can be interpreted as girls evaluating the matter differently than boys. Corridors at the school are covered with ceramic tiles. In fact, it has been observed in this study that children are capable of providing information on threats posed by different types of materials. The responses to this question bear similarities to the definition of the sandbox in the garden as the least favorite place, due to the risk of getting dirty, by the girls, in contrast to the boys. This difference in responses among males and females suggests that girls evaluate matters in more detail. Identification of windows as dangerous by 9% of all students may be interpreted as indicating the effectiveness of warnings made to the children about the windows. Normally, window handles in the school building are located at a level beyond the children's reach. However, children's responses such as "I can open the window if I stand up on a chair", when asked why they claim that the windows are dangerous, requires further thought on the necessity of designing windows which can be opened from above.

Frightening Place at School

76% of both male and female student groups indicated that there was no place at their facility that scared them. A portion of the girls indicated that they are afraid of the dressing room when the lights are off (8%) and the TV room (8%), and windows have also been described as frightening. A portion of boys, in contrast, found scary "the classroom when the teacher was not there" (16%) and "the garden because a dog may get inside (8%)". Found frightening by the girls when the lights are off, the dressing room
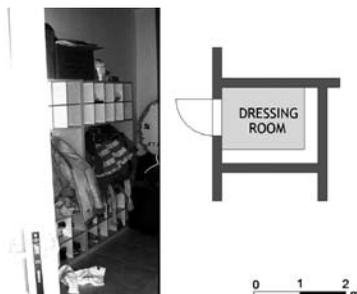
Figure 11. Dressing room found fearsome when the lights are off.

Figure 12. The stairwell that the children said they disliked because of the risk of falling down when playing in the garden flanking the building.

has no windows looking outside (**Figure 11**). Even though this room was a small part of the large classroom, it was regarded as frightening because it did not receive natural light. The television room was larger, however because of its perception as always dark by the children, it was identified as frightening.

The fact that this area is found frightening may suggest that the existence of places without natural light at kindergartens is a question open for discussion. In the TV room on the cellar story, windows are far up and the room is closed by curtains. Considering that low level of light or darkened space may stimulate fear, the room is suggested to be darkened only after students get into the classroom and natural light to be let inside right after the activity ends.

Most Liked Place at School

In large classrooms, 50% of the respondents answered by referring to the family game corner as their most favorite place at school, 14% indicated the classroom, 9% the computer room, 9% the gymnasium, and another 9% the area where tables are located because "tables can even be used as beds when playing". Among small classroom students, 38% indicated the playing space in the cellar, 25% the garden and the rest of the responses were distributed evenly among the drawing classroom, tables inside the classroom and the place with hairdressing toys.

It can be claimed that large classrooms have a greater number of attractive items for students and are therefore of higher quality, making the school 64% more attractive for students using such classrooms. The tendency of small classroom students to name places outside the classroom as their favorite may be interpreted as the insufficiency of small classrooms. The issue of classrooms, where the students spend most of their time, being viewed as more attractive by students should be given due importance.

Most Disliked Place at School

Among girls in large classrooms, responses for the most disliked place at the school varied among the empty space at the center of the classroom (38%), staircase (13%), TV room (13%) viewed as boring because one could not speak there, dressing room (13%) because one needed to hurry when using it, while another 23% responded by saying there was no such most disliked place. Girls in small classrooms indicated that there was no place they did not like at school. Among boys in large classrooms, responses were distributed among the hairdressing corner (25%), family game corner (25%) and dressing room (13%) for its being too dark, while another 37% said there was no disliked place for them at school. 50% of the boys from small classrooms said they did not like the garden flanking the building because the service staircase was located there (**Figure 12**), while the remaining 50% responded by saying that there was no such place.

Generally, it has been observed, based on the responses, that there is no place disliked by the students. However, the description of a place deprived of sunlight as the school's most disliked location and the identification of the service staircase at the flanking garden as a disliked place due to the danger of falling into the stairwell should serve as data for consideration in design.

Things Most Desired for Presence at the Facility

Of the responses received from girls, 25% favored a lawn area in the garden for "more comfortable playing" and because "nothing happens if one falls there", 20% favored flowers for their contribution to nice appearance, 5% a larger vegetable garden, 10% more toys, 5% a doghouse, 5% permission to draw on school walls, 10% carpets fully covering classroom floor for less cold and more comfortable playing, 5% a waste bin at the garden and 5% a swimming pool in the garden. Moreover, 10% of the girls wanted the sandbox to be removed so that no sand gets into their shoes and nobody gets dirty. Of the responses received from boys, 40% favored lawn area in the garden for more comfortable playing and running, 33% more toys (buckets and shovels in the garden, slides inside the classroom and a shop-game corner inside the classroom), 7% a larger playing park, 14% trees in the garden, 7% a larger sandbox and 7% a swimming pool.

Generally, most suggestions for the garden involved lawn area in the garden for more comfortable playing and running. Girls identified more flowers in the garden as a means of decorating the garden and improving its appearance. Thus, "lawn area" and "flowers" topped the list of students' most desired things at the facility's garden. A variety of recently conducted studies indicate that natural environments promote a decrease in negative feelings, and are greatly capable of generating healing experiences and relieving stress (Korpela, 2002). Students' need of green space should be duly prioritized for reasons of this kind. Another item that girls and boys describe as entertaining and wish to have is a swimming pool. In addition, one of the girls noted that she would like to have a waste bin in the garden. This comment by a six-year-old girl is an important indication of the fact that children carefully evaluate their surroundings and may feel uncomfortable due to the lack and shortcomings based on their needs.

EVALUATION

Given the demand for high-quality preschool education, differences exist among institutions in Turkey in terms of programs and physical opportunities, and owing to economic conditions, the level of preschool education is not at the desired level. Organizations operating under the Ministry of National Education and Social Services and Child Protection Agency are today involved in institutional education in Turkey. While institutions such as private or public independent kindergartens (for children 36-72 months of age) and private or public nursery classes (for children 60-72 months of age) operate under the Ministry of National Education, others such as care centers, nurseries, baby care centers, children's clubs and child centers operate under the Social Services and Child Protection Agency. Such preschool education institutions generally vary in terms of management, goals, programs, teachers/educators and equipment, and some of them are far from meeting quality standards (Eyüboğlu, 2007; Ural and Ramazan, 2007).

It is generally claimed that institutions involved in early childhood education are greatly diverse in terms of characteristics, standards and programs, and while there are many components in the institutional system, educational institutions that are greatly diverse fail to provide equal opportunity and thus restrict the effectiveness of educational programs (Dudek, 2002). Preschool education is not offered only in facilities designed for this purpose. It has been expressed that

transformation of preschool education buildings to a kindergarten or transformation of a classroom at primary school to a preschool classroom are widely used methods to create preschool education facilities, but these strategies are not valid (Dudek, 2000). These types of implementations, which are done without taking into consideration the needs of children make it harder to reach the quality level that is expected.

In the interviews held with boys and girls in the age group of five (48-60 months of age) and six (60-72 months of age), who use the kindergarten, it has been found out that children generally do possess an awareness of their surroundings sufficient enough to positively or negatively rate such surroundings. The ease of responses provided by the children to the questions they were asked supports the suggestion that sensitivity to the physical environment develops at an early age. In this study, communication with the children was established in the form of an informal conversation and it was observed that the children were eager in providing responses, with some children demanding to be interviewed, thus demonstrating eagerness to participate. In this context, it can be stated that different techniques for a broader view of the children's enthusiastic attitude, vantage points and perspectives could easily be implemented.

Children in the age group of 5 and 6 were able to make positive and negative comments on the environment in which they live, referring to their experience related with space, and were further able to express their expectations. These findings indicate that a designer may obtain important data in the design process by consulting children.

This study has demonstrated that kindergarten design can be approached under three main headings, namely organization of the environment, selection of materials, and detail solutions, based on preschoolers' experience. It has been observed that the designer can obtain instructive outcomes not only for minimal space requirements, organization of indoor and outdoor usage areas, the importance of natural light, the form of stairs, but also hints for security, comfort and general psychology of children. Outcomes of the study have been classified to give suggestions for the design process in the tables below (**Table 1-3**).

The contextual atmosphere surrounding an individual shapes his/her identity and therefore behavior. The first important environment that affects identity is the family. Identity structures vary depending on the family's attitude toward bringing up a child (Smith at al., 2006). In the child's gradually expanding social contextual environment, school becomes as significant as the family. One of the social goals of preschool education is providing each child equal opportunity (Oktay, 2007). In this context, it can be indicated that preschool education environment is more important for children who lack necessary social and physical opportunities within their family. For example, physical shortcomings restrict child development by creating behavioral obstacles (Gürkaynak, 1996), and the right to participate in decision making granted to children at kindergartens should matter more for children growing up in families that lack democratic attitudes. Democracy education is given high importance in preschool education. Developing independence, self-respect, confidence, cooperation, solidarity, and responsibility in children are some of the goals of education. Children are given democracy education by means of processes such as gathering the class together, eating together, free time activities and group activities. For example, free time activities at designated areas such as

Outcomes of the Work Process		Suggestions for the Design Process	
Minimum area requirement	• Children in the small class want to play mostly outside • Children in the larger class are mostly content in being in the classroom	• The minimum 1.5 m2 standard is not enough • 3 m2 area per child is sufficient	
Arrangement of usage spaces in the classroom	• Criticizing empty spaces in the large classroom with the fear of falling and hitting • The most popular location in the large classroom being the playground with defined borders • Being unable to define the most popular area in a small classroom	• Designing the classroom without undefined empty spaces and using them as places that can be transformed for various activities • Classroom design enabling preparation of activity corners	
Impact of natural light	• Concerns related with changing room, that does not receive light • Negative impression of TV-computer room, which is dark most of the time	• Designing education environment so that it will receive natural light in all areas	
Stairs	• Concerns for children falling when it is crowded	• Usage of ramps instead of storied solutions	
Outdoor usage	• Differences in the preference of play types for boys and girls • Need for free movement • Concerns related with falling and injuries • Need for natural environment	• Creation of additional parts in the garden in accordance with different preferences: free and secure grass fields, toys that are not completely for sandpits, vegetable growth, animal feeding, areas for various flowers	

Table 1. Outcomes and suggestions related with environmental organization.

play house, and block games are given importance because they enable children to gain social skills, and to express themselves better, to share, and cooperate (Ersoy, 2008). Therefore, when examined from this point of view, activity areas which lack adequate space tend to have a negative impact on the social and emotional development of children. In this context, the fact that basic personality characteristics develop during the preschool period must be taken into consideration. The designer has to comprehend

Outcomes of the Work Process		Suggestions for the Design Process	
Material and security relation	• Ceramic tiling, which is considered dangerous because of falling and sliding when wet	• Selection of materials that do not pose threats to children's health and security	
Materials and psychological impact	• Concerns of girls in their relations to mud and sand areas	• Association of various surfaces at outdoor playfields	
Material and comfort relation	• Need to play on a warm and soft surface in the classroom	• Usage of various healthy surface materials on the classroom floor	

Table 2. Outcomes and suggestions related with material selection.

Outcomes of the Work Process		Suggestions for the Design Process	
Detail solutions and security relation	• Concerns for children tripping on borders of flower islands in the courtyard	• Avoiding indefinite borders, using borders for a second function (such as sitting groups)	
Detail solutions and psychological impacts	• Concerns of girls on getting their shoes dirty at the vegetable field	• Defining clear routes that are easy to walk on vegetable field	

Table 3. Outcomes and suggestions related with detail solutions.

the basic conditions of preschool education and communicate with the users of the educational facility to ensure that the environment created will support the development of children. As previously indicated in this study, 1.5 m2 area per child, even though conforming to Turkish standards, is not adequate based on views of children and the inability to create activity corners.

Various studies show that new information based on user experiences, and comprehension of the education process are important for the design of educational facilities. Jilk (2005) claims that compliance with standards should not be regarded as a guarantee for successful design, nor as an answer to all questions. According to Prakash and Fielding (2007) when an educational facility is designed by considering the activities that will take place there, it will help to reduce solutions that will prevent learning. Architects need to remember that every design has an impact on users one way or another and that they need to try to understand the complexity of human experiences and learning processes (Prakash and Fielding 2007).

In the process of improving conditions in preschool environments, where the fundamentals of the future are laid, real satisfaction of children's needs is possible by understanding children's ideas on the space they use. Preserving the necessary quality of the physical conditions and satisfying the needs of both children and educators in kindergartens in order to ensure that children gain the experience they need in the period between age 0 and 6, which is described as a critical period for development, more effort should be made to incorporate the views of children and educators into projects. In addition to the great number of studies dealing with the social aspects of a child's surroundings, more studies should be conducted aiming to understand the effects of a child's physical environment.

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ANAOKULU TASARIMINDA ÇOCUK DENEYİMLERİNİN ÖNEMİ

Okulöncesi yıllarda kazanılan deneyimlerin bireyin gelişimini büyük oranda etkilediği ve anaokullarının, çocukların zamanlarının büyük bir bölümünü geçirdiği ortamlar olması nedeniyle çocuk gelişimi üzerinde önemli rolü bulunduğu çok sayıda çalışmada belirtilmektedir. Erken çocukluk olarak tanımlanan 0-6 yaş sürecinde gelişimsel özelliklerin büyük oranda biçimlenmesi nedeniyle erken çocukluk eğitimi, tüm eğitim süreçleri içerisinde özel bir öneme sahiptir. Yaşamın ilk üç yılında çocukların daha çok ev olmak üzere, kreş, gündüz bakım evi gibi farklı isimler verilen kurumlarda bakımı gerçekleştirilmekte, erken çocukluk gelişimine bu aşamada destek sağlayan çeşitli programlar yürütülmektedir. Okulöncesi eğitim ise 3-6 yaş arası çocukların yaşama daha iyi bir başlangıç yapabilmesi amacıyla, anaokulu ya da anasınıflarında uygulanmakta olan programlardır. Türkiye'de okulöncesi eğitim verilen mekanlar genel olarak resmi ve özel bağımsız anaokulları (36-72 aylık çocuklar için) ve ilköğretim okulları bünyesinde açılan anasınıflarıdır (60-72 aylık çocuklar için). Okulöncesi eğitim süreci kısa ve uzun dönemde çocuklara ve topluma katkı sağlamakta, erken çocukluk gelişimi, toplumsal kalkınmanın temeli olarak da görülmektedir. Fiziksel ve sosyal çevre kalitesi eğitim sürecinde çocuk gelişimi etkilemektedir. Fiziksel çevre kalitesinin geliştirilmesi bağlamında, tasarımcıların en iyi çözüme ulaşabilme arayışı, ancak çocukların eğitim ortamlarına ilişkin gereksinimlerini öğrenerek sağlanabilir. Bursa'da bir anaokulunda gerçekleştirilmiş bu çalışmada, anaokulu öğrencilerinden, okullarının fiziksel koşullarına ilişkin düşüncelerini almak ve gereksinimlerini tasarım sürecine girdi oluşturacak veriler olarak yorumlayabilmek amaçlanmıştır. Bu sayede, çocuk gereksinimleriyle ilişki kurarak çocuk gelişimini destekleyen yeni tasarımlara ulaşabilmenin desteklenebileceği savunulmaktadır. Çocuklara yöneltilen sorularda, mekana ilişkin olumlu ve olumsuz değerlendirmelerin ve beklentilerin öğrenilmesi amaçlanmıştır. Çalışmanın gösterdiği en önemli sonuç, 5 yaş (48-60 ay arası çocuklar) ve 6 yaş (60-72 ay arası çocuklar) grubundaki çocukların kendi deneyimleriyle ilişki kurarak fiziksel mekan kullanımlarına ilişkin başarılı sözel anlatımlarda bulunabildiklerinin görülmesi olmuştur. Kısaca, çalışma, tasarımcıların çocuklara danışarak, tasarım sürecine ışık tutacak önemli veriler elde edebileceği düşüncesini desteklemektedir. Bu kapsamda, çocukların gereksinimlerini karşılayan mekanların oluşturulabilmesi ve okulöncesi eğitim ortamlarındaki fiziksel koşulların iyileştirilebilmesi için çocukların fikirlerinin öğrenilmesinin bir politika olarak benimsenmesi önerilmektedir.

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