

Creative Environments at Children's Club

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Abstract | Children are the most sensitive and impressionable community age group. Studies indicate that the child's environment impacts on physical, mental, social, and creativity improvement. In this regard, the environment should be designed to act as a teacher for children and provide conditions for enhancing child's creativity. The paper's purpose is to study environmental factors affecting children's creativity. Accordingly, it uses a descriptive-analytical method to investigate which environmental factors affect child's creativity? And it explores the background on the field based on library resources. The findings show that creative environments include natural, private, social, playful, flexible, and sensory stimulating environments. Doing creative activities in creative environments provide an effective platform for enhancing children's creativity.

Keywords | creative environment, children club, creativity, environment design.

Introduction | We have spaces in the childhood environments that do not provide children the opportunity to think and learn from the environment. Today because of security purposes, children are not allowed to play freely in the streets and parks without being monitored by the elderly, and they are often sent to art classes under the supervision of parents and educators from the young ages, but they can't explore and create in their own way. The safe environment gives children the opportunity to search in the environment. Also, the educational area capititation is low and does not allow the costing and equipping of the school for creative

activities and learning through the environment. Therefore, the educational results will have little impact on the development of children's creativity. If we can't provide the creative environment and creative activities for the children through alleys, parks, schools and homes, it is necessary to design places full of capabilities so that children can fulfill their potentials and find the opportunity to promote their creativity. So, we can design a club that promote children's creativity by using the quality of the architectural space. The present paper answers the question that what are design factors of a creative environment in children's clubs? The purpose is to realize environmental factors at the children's clubs to achieve a creative environment so that the child can promote creativity through creative

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activities in the environment. The paper's method is descriptive-analytic. For collecting data, the paper's method is based on library resources and data analysis is based on reasoning. First, the creative environment and the child's club are introduced. Then, the characteristics of the creative environment are described. At the end, the environmental qualities obtained from the paper's results are presented in a table for the presentation of designing factors.

Creative Environment Definition

Many researchers have recognized the potential role of the environment to influence creativity (McCoy & Evans, 2002: 409) and "through the environment can stimulate creativity, can also inhibit or prevent it" (Stojanova, 2010: 3397).

Reviewed literature has shown that several factors can affect the promotion of children's creativity. The most important factors of the creativity's models are selected including: motivation, curiosity, play, Stimulates the senses, participation, imagination, flexibility, discovery (freedom- experience- exploration); (Ellen Martins & Nico Martins, 2002; Stojanova, 2010; McCoy & Evans, 2002; Sumalee, Samat & Kanjug, 2012; Sternberg, 2006).

Therefore, the creative environment refers to environments that can stimulate creativity (Jindal-Snape Davies, Collier, Howe, Digby & Hay, 2013: 21).

Club Definition

This research is done to design the child's club based on creativity models. The child's club can be a good model for places where a child does creative activities. So, child's club includes places like institute for the intellectual development of children and young adults, kindergartens, child's recreation center and etc.

Environmental Factors Affecting Children's Creativity:

This paper, by reviewing the literature in this field, has done the following categories which will be explained in more detail about each other.

1. Natural Environments

The natural environment is the experience of the child in outdoors. James (1892) has observed that "the certain elements in the natural environment are effortlessly engaging and, on this basis, Kaplan also considers the natural environment experience to be a particularly effective means of recovering from mental fatigue" (Berto, 2005: 249). Also, based on Ulrich study's findings (1993), "because certain natural settings have been found to elicit

positive emotional states, exposure to such environments may facilitate creative problem solving" (Ulrich, 1993: 112). Studies showed that outdoor play provides unique opportunities to experience the elements (Shackell, Butler, Doyle & Ball, 2008: 11) and "the sense of freedom, complexity, openness, and coherence experienced in the natural environment that reduces cognitive fatigue could very well be the same sense that Rogers (1954) posited as conducive to creative performance" (McCoy & Evans, 2002: 419). Aziz et al. (2012) found that "the outdoor environment offered unique opportunities for children to engage in active and creative play as well as a ground to interact with friends" (Aziz & Saeid, 2012: 205). Dillon et al. (2007) found that, "inside, work tended towards being individually focused, whereas outside, learning activities were more likely to involve collaboration" (Davies, Jindal-Snape, Collier, Digby, Hay, & Howe, 2013: 85), participation and cooperation are one of the creativity promoting factors (Mamy kina et al., 2002: 96-99). Being in the natural environment increases the participation and cooperation among children and so, promotes children's creativity.

Natural environment is large enough to discover and be curious about things (fascination) and with no restrictions to movements (Berto, 2005: 251). Places should be designed (created) so that children can play freely, experience nature, explore their environment and be with their friends (Shackell et al., 2008: 10), these opportunities are provided by the natural environment.

The use of natural materials in indoors can create a high degree of creativity. The literature reviewed suggests that creative performance increases in an environment where some natural materials are identifiable (McCoy & Evans, 2002: 415). Shibata and Suzuki's study has showed that "the presence of the leafy plants might affect creative work positively" (Shibata & Suzuki, 2002: 265) and "a natural view from a window may be a method of achieving exposure to the natural environment while remaining present in the interior physical environment" (McCoy & Evans, 2002: 419). Fjørtoft & Sageie (2000) has indicated in their study that a significant relation is between the diversity of the landscape and the affordance of play (Fjørtoft, 2001: 115). Mozafar & Shafaei studies have shown that exposure to outdoor and green spaces among the indoor spaces create a natural landscape and play spaces to promote child's creativity (Mozafar & Shafaei, 2013: 31) and nature, because it includes the three qualities: the infinite variety, no the man-made, the sense of immortality and inexhaustibility, is a suitable platform

for children's play (Fjørtoft, 2004: 23). Bergnéhr's findings (2009) have shown that nature and outdoor play connects to children's health and well-being, both physically and mentally, as well as stimulating creative play and social development. Furthermore, Kernan and Devine (2010) have observed that the outdoor environment stimulates children's social development and the outdoors are as a space of discovery and sensual experience of natural phenomena, where children can explore nature and enjoy experiences of plants and animals (Norodahl & Johannesson, 2015: 2-3). There is some reasonable evidence in the several studies that children, who work in the outdoor environment, can promote their creativity (D.Davies et al., 2013: 84).

The children's imagination is effective in promoting their creativity (Shafaei & Madani, 2010: 215) and Duffy has expressed that the factors affecting imagination are visual, auditory and sensory experiences (Duffy, 2001: 40). To provide the conditions for three types of experiences, the environment is designed in the way that it related to nature. The natural environment can provide visual, auditory and tactile experiences for children. Pourjafar et al.'s researches have shown that one of the psychological factors for designing children's spaces is direct connection with healthy outdoor environments, and it is necessary to pay attention to connection with the nature and landscape in designing children's environments (Pourjafar, Ansari,

Mahmoudinejad & Alizadeh, 2010: 79). Based on the research model of Noghrekar et al. (2009), the stimulation of natural elements (variability, play ability and natural elements variability) influences on the child's curiosity, fantasy, play-participation and motivation and so, it promotes the child's creativity (Noghrekar, Mozaffar, Saleh & Shafaei, 2009: 54-55). Also, the findings of the Shafaei & Madani's paper have shown that the stimulation of the natural environment has a positive and significant effect on the three factors: curiosity, play-participation, and imagination (Shafaei & Madani, 2010: 218-219); (Fig. 1). The natural environments emphasize relationship with nature, and they include outdoor and indoor space relationship with nature, the use of natural materials and natural landscape. The literature reviewed has shown that exposure to these environments may lead to a key to long-term sustainability of creativity.

2. Private Environments (Passive)

"The solitary space allows thinking and meditation, and is characterized by a silent atmosphere" (Thoring, Luippold & M.Mueller, 2012: 4). Krinke's findings (2005) have shown that private space includes: reduced palette of materials, simplified forms, reduced distraction (fascination) for inward focus and low arousal for inward focus (Krinke, 2005: 107-137). In an ideal environment, the children have access to spaces where they can withdraw



Fig.1: Relation of spaces with the nature and the experience of the natural environment for children.

Sources from left to right:

<http://image.architonic.com/imgArc/project-1/4/5201394/Tezuka-Fuji-Kindergarten-05.jpg>

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<https://image.architonic.com/imgArc/project-1/4/5201394/Tezuka-Fuji-Kindergarten-09.jpg>

from the main group, play alone and go for a bit of privacy (Olds, 2006: 6). Children love a cozy space, they don't find the opportunity for thinking and imagination in crowded places and they feel safe in the corners and shelters, and they can focus your senses, think to issues that they like, talk with themselves and draw (paint) (Azmoode, 2012: 27). Alexander, in 203 pattern, has talked about children's caves; children like to sit in cave and small places and play (Alexander, 2009: 459). Pourjafar et al. (2010) have shown that for creating self-confidence and expanding individual creativity it is necessary that children's environment is designed due to qualities such as quiet, privacy, and relaxation that create a sense of privacy or, in fact, a cozy space (Pourjafar et al., 2010: 79-80); (Fig. 2).

Researches have shown that private and contemplative environments focus on the inner for thought, and as a passive environment, they provide conditions for spiritual renovation and creative thinking by creating a relaxed and quiet environment and reducing environmental stimulation.

3. Social Environments (Active)

"The team space is a creative space that invites people to work together and exchange ideas and communicate with each other" (Thoring et al., 2012: 1-4). "The social environment also plays great role in the creation of creative ideas" (Stojanova, 2010: 3397) and researchers have

investigated the impact of team working on the growth of the creative process and they have concluded that "Person's creativity flourishes by communicating with each other due to the interaction of ideas" (Shafaei & Madani, 2010: 216). The findings of Tabatabaeian et al.'s research (2016) have shown that the environment is effective in promoting the children's creativity by interactions between children (Tabatabaeian et al., 2016: 20-26). It is worth noting, Amabile's researches (1989) have shown that a sense of cooperation and social factors can influence on creativity (Amabile, 1996: 3- McCoy & Evans, 2002: 420).

The shape and size of the spaces can gather individuals and create groups for interactions and social relationships (Mozaffar & Shafaei, 2013: 33). McCoy and Evans's findings have shown that furniture indicate its ability to promote social interaction, and "a high degree of social potential also implies a high degree of creativity potential" (McCoy & Evans, 2002: 414-415) and as a result, social furniture arrangement has a strong relationship with creativity. Play is an effective and important factor in determining and educating social values (Hosseinpour & Najafi, 2012: 69). The play encourages children that they exchange ideas and it creates the cooperative relationships and free exchange of opinions (Stojanova, 2010: 3399). It can be concluded that child and adolescent participation can be achieved through play, which is an important factor in promoting the child's creativity. According to Pourjafar

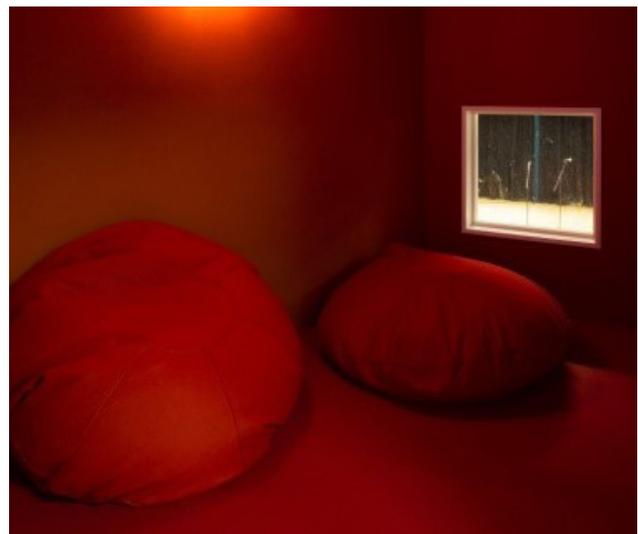


Fig. 2: Designing cozy and quiet spaces for children

Sources from left to right:

http://www.archdaily.com/388629/ama-r-children-s-culture-house-dorte-mandrup/51ba832db3fc4b117900003a_ama-r-children-s-culture-house-dorte-mandrup_281_dma_18_jl-jpg

http://www.archdaily.com/388629/ama-r-children-s-culture-house-dorte-mandrup/51ba8433b3fc4bd563000019_ama-r-children-s-culture-house-dorte-mandrup_281_dma_21_te-jpg



Fig. 3: Designing social spaces for interactions between children. Sources from left to right:
<https://www.pinterest.com/pin/472807660858725374/>
<http://www.myconnecticutkids.com/wp-content/uploads/L-EnergyLab.jpg>

et al.'s findings (2010), the child more presence, the possibility of group plays, the child participation and the group working and the age & gender social participation in group play are factors that should be considered in promoting creativity (Pourjafar et al., 2010: 76 and 80-79). The most exciting creative work of children is exposure and group interaction between them and their peripheral world (Mozaffar et al., 2006: 83). According to researches, 'Friendly Environment for Children' is an environment that it is safe and fun for children to play in, whether alone or with a companion (Drianda et al., 2015: 638); (Fig. 3).

The researchers have suggested that the creative process and priorities of each person are different; in other words, some children may need to consider social interaction in the creative process to work better, while another group of children may need to consider privacy. Child participation in group activities is an important factor in promoting creativity.

4. Playful Environments

Introducing the play in the environment is an effective way to stimulate positive effects on creativity, and the child's playing space is the best place for promoting creativity (Pourjafar et al., 2010: 76). Moyles (1989) has demonstrated, for every aspect of children's development, there is a form of play and all types of play support aspects of physical, intellectual and social-emotional growth (Whitebread, 2012: 18). Through play, children explore the world, develop their emotional responses, improve their interpersonal skills and think in a flexible manner (Shackell et al., 2008: 9). Jerome Bruner has claimed that the play is essential for promoting mental

skills. Children in the play can experience without others' interference and earn complex abilities (Masen et al., 2006: 205). According to Senda's researches (1998), children's play space include: the nature space, the outdoor space, the communication space, the adventure space (a place for stimulating children's creativity), the hide-out space (a place for developing children's imagination) and the structured play space (Drianda et al., 2015: 437). Also, "Titman (1994:58) has identified four elements that children looked for in school grounds: a place for doing (opportunities for physical activities), a place for thinking (opportunities for intellectual stimulation), a place for feeling (to provoke a sense of belonging) and a place for being (to allow them to be themselves)" (Hussein, 2012: 345). Play is both a physical and mental construct and refers to activities or behaviors which are "to some significant degree playful" (Dansky, 1999: 343) and playfulness is used to describe the quality of an activity that encourages actions or behaviors that are intrinsically motivated. In addition, play has positive emotional moods like pleasure, joy, excitement, or fun (Ibid: 393). "Playing creates physical and mental preparedness in children required for accepting different learning materials" (Emami Rizi et al., 2011: 2138).

There is reasonable evidence that playful experiences are effective in preparing children for trying, solving problem or doing creative activity (Jindal-Snape, et al., 2013: 28- D. Davies et al., 2013: 86- Amabile, 2002: 129 & Doffi, 2003: 44-45). Also, Tabatabaeian et al.'s research findings (2016) have shown that a playful-environment is effective in improving the children's creativity (Tabatabaeian et al., 2016: 20-26). Several studies have indicated that "a diverse and adventurous playground stimulates creative



Fig. 4: . Designing a variety of spaces for playful child. Sources from left to right:

<https://static2.auctelia.com/en/resource/picture/playground-for-children-and-furniture-8407L.jpg>

<http://4.bp.blogspot.com/yV0wYtrt2EU/UytMcIKRgYI/AAAAAAAACBY/hMLFvx2E1TU/s1600/girl+tinkering.png>

http://www.archdaily.com/388629/ama-r-children-s-culture-house-dorte-mandrup/51ba8343b3fc4b766900001e_ama-r-children-s-culture-house-dorte-mandrup_281_dma_12_te-jpg

play” (Fjørtoft & Sageie, 2000: 84) and when the play space is varied and full of signs and symptoms, determining the territory is easier for children (Ahadzade & Dashti Shafei, 2013: 179). The findings of Mahdinejad et al.’s research (2012) have shown that natural playgrounds are more suitable for children’s play than fixed and manufactured equipment. Natural play environments, while influencing the child’s growth process, help improve their training performance (Mahdinejad et al., 2012: 1-7).

The playful is the most important factor for promoting user’s creativity that it is found by Azemati et al.’s research (2012). The playful is influenced by the user’s curiosity and imagination (Azemati et al., 2012: 243-244) and having an accessible playground, is highly important for children to give them the opportunity for free play and choices for exploration and learning (Hussein, 2012: 345); (Fig. 4).

According to studies, the suitable play environment has an important role in promoting the children’s creativity and it causes that the child’s mind be explorer. The play is not only a kind of fun, but the child looks for finding the answer to his curiosity.

5. Flexible Environments

Flexibility is the ability to combine two classes into one for team-teaching, split a class into small groups and spread them over a wider area or combine different classes studying complementary learning areas (Osborne, 2013: 3). The purpose of the flexibility is to create the freedom of choice for children (Csikszentmihalyi, 1996 & Noghrekar et al., 2009: 55). The flexible space can combine several functions, and some functions can be aligned to

several spaces (Thoring et al., 2012: 4). Knight (2006) has indicated that motivation, collaboration, flexibility and multi-purpose space (a wider space can provide suitable condition for the variety activities) are important factors of the creative environments (Knight, 2006: 4). A flexible environment should be easily adaptable and provide different situations to respond the changing needs of children, and cause the environment to be dynamic (Mardomi & Delshad, 2010: 111).

Based on Noghrekar et al.’s research model (2009), the flexibility of the functions (the variability of space and its components) affects the curiosity, fantasy and children’s participation and consequently, it promotes the child’s creativity (Noghrekar et al., 2009: 55-56) also, Shafaei and Madani (2010) have introduced that the flexibility of the functions is effective on the child’s play-participation (Shafaei & Madani, 2010: 219). The findings of Mardomi and Delshad’s research (2010) have indicated that the flexible learning environment provides the child’s explorer sense, on the one hand, child creates her/his environment, on the other, the environment forms the child’s learning world (Mardomi & Delshad, 2010: 115-116). The environment, which responds children’s basic needs, can promote their creativity. The flexible environment encourages children to experience the arrangement of objects in the environment to adapt and recognize it, and this encourages the sense of control over space and the thinking of composition and analysis in the child (Mozaffar et al., 2006: 83). The results of Tabatabaeian et al.’s research (2016) have shown that the flexibility of the environment is effective in improving the children’s creativity (Tabatabaeian et al., 2016: 20-26). Also, there are evidences in a number of studies that the

space should be flexible to promote children's creativity. Jindal-Snape et al.'s research (2013) has indicated that the main feature of the physical environment include flexible use of space; flexibility and free movement in the space and use of different areas in the space (Jindal-Snape et al., 2013: 23).

One of the more basic variables, that can be altered in the environment, is the arrangement of the children's desks and chairs (Higgins et al., 2005: 25) and the arrangement of the space in an early childhood program has an effect on the safety and success of the children's creative activities (Mayesky, 2013: 117). The creative climate in the classroom requires an appropriate physical layout; so, movable desks with chairs are recommended for children by researchers (Stojanova, 2010: 3399) and also,

there should be suitable and different arrangement for any age group in the space so that each child can use the desk and chair and other equipment (appropriate to his/her body) (Mozaffar & Shafaei, 2013: 29). Moveable furniture and equipment respond to different groups with different needs, they adapt the environment to meet behavioral needs and they let children change their environment to suit their play (Olds, 2006: 8). Designing the open plan and creating the flexible and multi-purpose spaces can influence in creating flexibility and diversity of the space and variability of the shape and size and increase the space capability for various functions by means of movable, folded and rotatable light walls (Mozaffar & Shafaei, 2013: 34) and with portable screens and dividers, you can create versatile



Fig. 5: Designing flexible spaces. Sources from up to down:
<http://cdn.archinect.net/images/1200x/xd/xdmv85lcfdpypi86.jpg>
<https://janetserra.files.wordpress.com/2016/04/courtyard-raw-photo-designs-copy-2.jpg>

and changeable attractive areas that they hold children's attention (Olds, 2006: 8). Shelves should be low-level so that children have an opportunity to see, touch and choose materials freely and they are easily moved and they create more flexibility and interesting centers in the room arrangement (Mayesky, 2013: 115-116).

In 2011, Kim Hassell has studied flexible furniture in classrooms and suggested that classrooms should be large enough to contain different learning activities. "Moveable chairs and tables would offer the learners an opportunity to change furniture arrangements to suit the learning style", such as small or large group study. In the 1970s and 1980s, designers had encouraged to use the concept of the open plan in classrooms to emphasize flexibility in classrooms, but Hassel has believed that an open plan is not necessarily associated with flexibility. Larger classrooms with movable walls and furniture could also offer flexibility. Flexibility could mean having movable partitions inside learning environments, having movable furniture, having a space that could serve a range of activities, or even having spaces without any furniture. Furniture has a role (affect) in providing flexibility in the classroom and supporting teaching different styles, and also, it should be suitable ergonomically. "Creative learning spaces should enable children to choose the activity they want, in the place they prefer, and with people they desire" (Alsaif, 2014: 60-68); (Fig. 5).

According to studies, flexible environments are one of the suitable environments for promoting creativity because they provide various capabilities and the creation of the environment by the child. Therefore, it should be provided conditions for children who welcome to change and take advantage from the various conditions as an opportunity for a new direction and flexibility.

6. Feeling Stimulating Environments (Arousal)

The fivefold senses are source of ideas and they include experience of the sight, audition, smell, touch and taste (Sboren, 2003: 136). According to Piaget's opinion, children create their world based on what they see, hear and smell (Masen et al., 2001: 298). Creative experiences are directly related to the child's senses (Duffy, 2001: 70-71). According to Duffy's thinking, influencing factors on imagination are visual, auditory, and sensory experiences (Duffy, 2001: 40).

The outdoor environment is seen as an important factor which can help learning through providing opportunities to experience by all senses (Norodahl &

Johannsson, 2015: 12-14). The shape of the environment has measured in each photograph based on rectilinearity and complexity. McCoy and Evans's correlation analyses (2002) have indicated that "higher complexity was associated with more perceived creativity potential in a space" (McCoy & Evans, 2002: 413-415). The child's environment should be provocative and attractive, and it is necessary for child's environment to be a balanced level of complexity, freshness, novelty, variety and excitement to engage children in the environment (Mozaffar et al., 2006: 83). The results of Tabatabaeian et al.'s research (2016) have shown that the environment, with characteristics as complexity and stimulation, is effective in increasing the children's creativity (Tabatabaeian et al., 2016: 20-26). Arnone (2003) has introduced that the stimulation factors of the curiosity include incongruity, contradictions, novelty, surprise, complexity and uncertainty (Arnone, 2003: 2-4). Studies have indicated that the complexity in the environment can stimulate the child's curiosity and promote his creativity (Whitebread, 2012: 18). Attention to the vague and complex situations is the property of creative person (Nasajizadeh, 2005: 50). It is obvious that the existence of some ambiguity and the capability of research and the discovery of the environment unclear dimensions in this field will have a positive effect (Mozaffar et al., 2007: 70). High levels of visual details significantly enhanced perceived creativity potential of an environment (McCoy & Evans, 2002: 414-415). Other researchers such as Amabile (1983), Guilford (1967), Stein (1974), Kaplan (1993), Kaplan (1995), and Kaplan & Kaplan (1989) have suggested that visually interesting environments may be perceived as having higher creativity potential. An interesting visual environment should be interesting visual details. One of the most interesting visual details is showing the children's work. There are various ways of displaying students' work. "McGonigal (1999) advocates giving each individual a personal space, while Killeen et al. (2003) argue for the importance of permanence, with children's artwork actually incorporated into the fabric of the school" (Higgins et al., 2005: 27). According to studies, the child's environment is richer in terms of information resources; the motivation comes from strength to verb (Narimani, 1991: 46). The curiosity is the brain and the core of creativity and innovation (Ghaemi, 2010: 168). Other researches have shown that "the curiosity of the person is effective in the creativity process, and creative person is usually curious" (Shafaei & Madani, 2010: 216). To stimulate the child's curiosity,

the environment should be designed to create questions in the child's mind. So, environmental information or visual details in the environment should be questionable. The visual details are a way to decorate the environment and provide necessities for children playing. According to Duffy's studies, visual experiences are effective in the imagination of the child (Duffy, 2001). The presence of interesting visual details or interesting visual environment provides conditions for the child's

visual experience. In fact, visual details can stimulate sight. Creativity stimulate alive creature that he/she search new things in the environment (Franken, 2005: 558). The child has passion for exploring, and when he/she can understand everything around him/her, it becomes a new and exciting experience for him/her (Nasajizadeh, 2005: 90). Visual details can be effective in exploring and searching children. Creativity has a relationship with curiosity and exploratory behavior



Fig. 6: Designing feeling stimulating spaces for children. Sources from left to right:

http://www.archdaily.com/388629/ama-r-children-s-culture-house-dorte-mandrup/51ba8377b3fc4b117900003b_ama-r-children-s-culture-house-dorte-mandrup_281_dma_13_te-jpg

http://www.archnewsnow.com/features/images/Feature0070_07x.jpg

<https://static1.squarespace.com/static/54ff8f6ae4b02d7ffa209bdc/t/58b75d479de4bbf5be7bd5df/1488412014331>

(Franken, 2005: 581).

Activities, such as listening to music during activities and planting a garden, could promote creativity (Jindal-Snape et al., 2013: 24). Playing with flowers, soil, sand and water is the most enjoyable and cheapest play that stimulates the child's senses and promotes the children's creativity. Understanding the quality of matter comes from two ways including running and touching, and the child's confidence is achieved often by touching the object surface. The sense of smell can be considered as an effective means of understanding space. Children love the sounds, and generally soft sounds of the field help the imagination of children and relate them to life outside. The type and richness of the environment make it possible to practice and use more senses such as

sight, audition, and touch. Variety is provided through the creation of variety in color, sound, texture and etc. Determination of the limited area by flooring: the specific flooring is an effective method for determining or creating the relationship between different levels of the building (Hosseinpour & Najafi, 2012: 87-58). For listening experience, the sounds of rivers, birds, etc. can be used as environmental sounds; or the environment is silenced with different ways that can be used for receiving sounds and strengthening the hearing. The waterfall has appropriate sound that may engage the child for hours and affect the child's mental development (Ibid: 109). Using materials such as wood, bricks, etc. and various shapes (rectangular or curve) in the design can promote the child's touch experience. Approaching the

child to the water is effective in stimulating the tactile sense. For experiencing the tactile sense, we can put the child in different spaces with different texture; a variety of smooth and rough surfaces, wet and dry, cloudy and clear, opaque and transparent (Shahhoseini, 2014: 116-117); (Fig. 6).

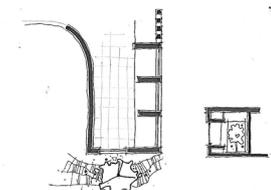
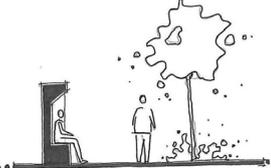
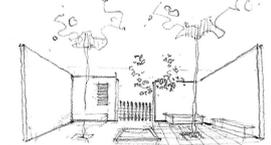
Researches have suggested that the feeling stimulating environment helps children discovering the potential of objects and using them in relationship with space, and is one of the creative environments.

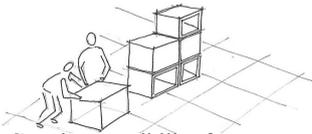
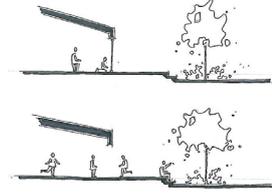
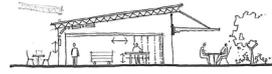
Discussion

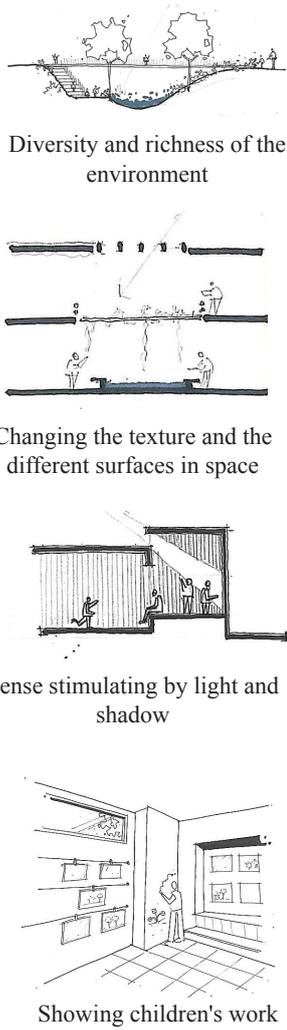
According to the results, the environmental qualities of creativity have been shown in table 1, which contains the design solutions of the creative environments have been presented for designing a child's club. Based on the table 1, creative environments are divided into six categories: natural, private, social, playful, flexible, and stimulating. For each of these environments, the spatial characteristics (environmental qualities) and the design solutions have been presented in the third and fourth columns of table 1.

Table 1: Types of the creative environment. Source: Authors.

Environment	Environmental Qualities	
1 Natural Environments	The entertaining and interesting visual environment	
	Improving the mental tiredness and creating the positive emotional state	
	Freedom, Complexity, Play, Coherence	
	Partnership and Cooperation	
	Freedom for exploration and experience	
	Visual interesting and opportunity for discovering	
	No restrictions for the movement, change direction and movement (possibility of movement)	
	The presence of animals	
	Nature as a rich source of information	
	Outdoor play	
	Providing an opportunity to experience (auditory, visual, tactile)	
	Using natural materials (using natural materials, textures and forms)	
	The strong presence of vegetation	
	The natural environment view (diversity in the natural view)	
	The combination of open space and closed space (dispersing open space among closed spaces)	
	The natural elements stimulating (variability, playability and modifiability of the natural elements)	
	The infinite variety, not the man-made, the sense of immortality and inexhaustibility	
Using natural patterns and processes		
Natural light sources		

Environment	Environmental Qualities	The Design Solutions
2 Private Environments	Reduce material pallet	
	Simple form	Designing place for decrease distraction
	Decrease distraction (obsession) for inner focus	
	Low stimulation for inner focus	Designing low stimulation place
	Repeat in space, pattern, and speed	
	Silence or noise to reduce auditory distraction; sometimes rhythmic noise	Designing place for privacy
	Repeat in speeds of repetitive activities simultaneously like running, walking, swinging, etc.)	
	Layout and sequencing of space	Designing a safe and enclosed environment that allows you to drown in your thoughts thoroughly and separate from the outside
	High degree of order / low environmental complexity	
	A safe and enclosed environment that allows you to drown in your thoughts thoroughly and separate from the outside	

3	Environment Social Environments	Environmental Qualities	The Design Solutions
		<p>Communicate with other persons easily (social design and flexibility or fluidity of the environment)</p> <hr/> <p>Features for easy communication with others and providing areas for solitude</p> <hr/> <p>Sharing ideas with others regularly/ use others as an information source</p> <hr/> <p>Opportunity for cooperation</p> <hr/> <p>Different types of facilities for different stages in the creative process and the ability to choose</p> <hr/> <p>Shape and size of spaces</p> <hr/> <p>Space layouts</p> <hr/> <p>Furniture</p> <hr/> <p>Opportunity for cooperation and participation</p> <hr/> <p>Possibility for team playing</p>	 <p>Designing furniture for cooperation and participation</p>  <p>Different types of facilities for selection</p>  <p>Designing facilities for communicating with other persons easily</p>  <p>Creating possibility for group playing</p>
		<p>Signs of playfulness</p> <hr/> <p>Diversity, variety and full of adventures</p> <hr/> <p>Natural and accessible features, green and nature structures</p> <hr/> <p>Unstructured and manipulative</p> <hr/> <p>Change and variety in view</p>	 <p>Signs of playfulness</p>
		<p>Child-centered capabilities, controllability, security-centered and socialization</p> <hr/> <p>Creating an environment by the child</p> <hr/> <p>Movable furniture and equipment</p> <hr/> <p>Available shelves with various materials</p> <hr/> <p>Movable walls and separators</p> <hr/> <p>Appropriate physical layout of the environment</p>	 <p>Movable walls and separators</p>  <p>Appropriate physical layout of the environment</p>

Environment	Environmental Qualities	The Design Solutions	
6	Feeling Stimulating Environments	<p data-bbox="507 271 943 338">Changing the texture and color of the surfaces</p> <hr/> <p data-bbox="507 383 1018 450">Colors and play with them, including visual factors affecting the playing spaces</p> <hr/> <p data-bbox="507 517 863 551">Transparence and natural light</p> <hr/> <p data-bbox="507 618 999 685">Sufficient light and suitable lighting in the spaces</p> <hr/> <p data-bbox="507 730 751 763">The field Soft sounds</p> <hr/> <p data-bbox="507 819 999 853">Diversity and richness of the environment</p> <hr/> <p data-bbox="507 909 711 943">Natural materials</p> <hr/> <p data-bbox="507 999 919 1066">The complexity spatial form and its vagueness</p> <hr/> <p data-bbox="507 1111 663 1144">Visual details</p> <hr/> <p data-bbox="507 1200 791 1234">Showing children's work</p>	 <p data-bbox="1082 394 1369 461">Diversity and richness of the environment</p> <p data-bbox="1082 685 1369 752">Changing the texture and the different surfaces in space</p> <p data-bbox="1082 931 1369 999">Sense stimulating by light and shadow</p> <p data-bbox="1082 1267 1369 1301">Showing children's work</p>

conclusion

According to reviewed literature, the environmental factors affecting the promotion of child's creativity in designing a child's club include: the natural environment, the private environment, the social environment, the play environment, the flexible environment and the feeling stimulating environment. Each of these environments is considered as a creative environment. Creative environments should be designed in such a way as to be able to select and access a variety of environments according to the child's individual needs at different stages of the age. The natural environments emphasize the relationship with nature and the around environment, and exposure to these environments can be a key for long-term sustainability of creativity. Private and contemplative environments tend to encourage inner focus for thought and reflection by reducing environmental stimulation. Providing environments

for thinking is not only helpful in reducing stress, but they can be used as a source of creative inspiration, spiritual renewal and creative thinking. Participating in social activities/team working for a child are the important factors in promoting his/her creativity. According to studies, the suitable play environment plays an important role in promoting the children's creativity and it creates explorer the child's mind (the child's mind is created explorer by it). The play is not just a kind of fun and recreation, but it makes that the child looks for finding the answer to his/her curiosity. Flexible environments are suitable for promoting the child's creativity because they provide various capabilities and the creation of the environment by the child. Finally, the senses of the child cause that the children discover the potential of objects and use them relate to space. In other words, the feeling stimulating environment helps children to learn the properties of the equipment.

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