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Designing a Library for Children Considering their Needs and Interests in the city of Qom, Iran

Sajedeh Fardi[1], Navid Fazeli[2], Morteza Seddigh[3]*

[1] Department of Architecture, College of Art, Khomein Branch, Islamic Azad University, Khomein, Iran.
[2]Department of Architecture, College of Art, Natanz Branch, Islamic Azad University, Natanz, Iran.
[3]A Faculty Member at the Nonp1ofit Deylaman.

***Corresponding Author**

Abstract: *Currently, library plays a major role in the social, political, economic, and cultural development of a society. It also plays an important role in preserving and improving the culture, formal education, and self-education and leisure time. Library in the society where knowledge and communicative means become complex, plays a more important role than before. Children in the early years of their life have almost no knowledge of the world around themselves, and their readiness for its identification is largely affected by the environmental conditions. Considering the individual differences among children, every child should have the ability to understand, absorb, adapt, and coordinate with realities and foster his ideas and beliefs. Childhood is the most sensitive age period in people's life, when the base of their personal, physical, and social growth is formed. In the present study, it was tried to design a library that is special for children to meet their needs where a childish and intimate space is provided, to be free from turmoil of the world of adults and filled with joy in which children find an opportunity to express new ideas and foster their capacities and creativity.*

Keywords: *Library, Child, Education, Child Space, Mind, Creativity*

INTRODUCTION

In today's architecture, designing for specific groups of people in the society (in terms of mental and physical characteristics) is of special importance, since the function of each space is specified by its audience and their characteristics. Therefore, public buildings built for specific groups of people may induce architects and planners to design the architecture and space which is in harmony with them. The age group of children requires different parameters for architecture design in terms of intellectual and psychological, and physical characteristics. Therefore, the architecture designs should include different quantities and qualities relative to these specific physical and intellectual parameters (Coronary, 1388, 55-53). Libraries are one of the leading educational institutions providing knowledge and resources to different groups of society, according to their needs. They are considered as formal educational services in schools and as supporters of individual educational efforts. Therefore, libraries play an important role in educational system of every society. They are institutions that create and distribute information.

Books are necessary for children in order to take advantage of their childhood years and obtain the capabilities and abilities needed for their future. The reasons that show libraries are necessary for adults are also true for the case of children. The most important reason is that few people can achieve a large number of the useful books by ways other than borrowing them form libraries. Although some adults can buy books for themselves, but if there were not any libraries, they would be deprived of reading books. Only a few number of children are able to buy books and the children who have good financial status should be encouraged to buy books for themselves. However, these children, and even adults, require libraries to be able to read various types of books at sufficient number.

Background of children's library in the world and Iran

International Youth Library in Munich is the largest and most important library in the world, which includes a large set of youth and children literature around the world. This library was founded after World War II on December 15, 1949 by Layer Lpmn (1891-1971), journalist and founder of the International Bureau of books for young people, and founder of the International Children's Book Day under the financial support of US Rockefeller institution, and Lpmn headed it for ten years. This library was transferred to a palace in the old reconstructed castle belonging to the 15th century outskirts of Munich called as Bulleton Berg. The library has been a member of the libraries' network affiliated with UNESCO, and it is financially supported by the German Ministry of Culture, Bavaria Ministry of Culture, and Munich Municipality. The objective of its foundation was to encourage and foster the talent of children and teenagers around the world through the promotion of the reading habit. This library collects, organizes, and disseminates news and information about needs of students and teachers, and it holds exhibitions. In the past, a large part of library resources was provided by the efforts of librarians in the form of donors by publishers of children's books around the world. Then, America Library Association made much effort in setting and collecting its collection (Ginni Furushan, 1991, 76.89) .The history of the establishment of the Children's Library as a part of the public libraries in Iran backs to 1956 in Tabriz that after the opening of the National Library in that city, a room was allocated to children's books. According to a report published in this regard, its functioning was announced for public. To the researchers' knowledge, the first public library special for children was first established in Tabriz city in Iran. Children's library is a room with 5.4 and 6.5 meters in length and width that its light has been provided by eastern windows (Mohammadi, Gaeeni, 2001, 190). Today's world has become a communication network to transmit ideas and information; therefore, to keep pace with and make a rational use of this mode is one of the important tasks of today's society considering the fact that the level of study of Iranian people is so lower than the global standard level.

There are several libraries in Qom, but the important thing is that most of these libraries are religious libraries dedicated to adults. For this reason, the city of Qom was selected in this study (Mozmen, 2016, 185-171). Thus, this study aimed to design a library for children in the city of Qom, a library that is appropriate for this age group in terms of size standards and space proportions, and their quality and type of function.

Method

The method of study was descriptive and it was applied considering the objective. The population of the study included kindergarten and library educators, mothers and fathers of the children, and also kindergarten and library officials. Simple random sampling method (srs) was used, and the sample size was determined to be 100 people using Cochran formula. In order to gather the necessary information required for the subject of study and the questionnaire data, the library method

including books, journals, and articles and field method including interviews and observation were used. In developing the questionnaire questions, Likert procedure was used. Questionnaire included 20 questions related to the subject of study, and each question had 5 options including very high, high, moderate, low, and no idea. In order to confirm the validity of the questionnaire, 10 copies of the content table of the questionnaire, and 10 copies of the questionnaire were provided to the experts in this area including Dr. Khorram and Dr. Dezfuli so that content and face validities of it were confirmed. In addition, the value of the important items and their relation with each other was determined, unrelated questions were eliminated, and uncertainties were resolved and required modifications were applied. In order to investigate the validity of the questionnaire, Cronbach's alpha was used that its value was determined 0.572. In order to analyze the data, descriptive statistics and inferential statistics including the analysis of variance, regression analysis, multifactorial variance analysis, regression analysis, Cronbach's alpha, Kolmogorov-Smirnov test, Cochran, and Spearman correlation coefficient were used.

Findings

According to the results obtained, among the participants, 32 people had high school degree, 15 people had associate degree, 39 people had bachelor degree, and 13 people had master degree, and 1 person had PhD degree. In addition, 41 people were at the age range of 20 to 30, and 49 people were at the age range of 30 to 40, and 10 people were at the age range of 40 to 50 years. In order to examine the normality, Kolmogorov-Smirnov test was used that results indicated that all research questions were normal. Based on the results, considering the number of the people answering the questions, it was found that the recreational land use for children had a very high impact on the attractiveness of the library environment; the recreational land use would cause friendly environment at a very high extent, recreational land use was effective in creating group activities at very high level; the recreational land use would meet the needs of children at very high level; security in educational space had a very large impact on creating a sense of belonging; the library types of educational spaces would highly increase the sense of belonging of children; educational space by creating sense of belonging would affect the friendly environment; the high physical security can increase the educational quality at very high level; the high level of sense of belonging can highly affect the educational quality of children; group activities in children increase the educational quality of children at large extent; and the physical attractiveness of environment increases educational quality at very large extent. Additionally, based on the observations, it was concluded that friendly educational environment increases the educational quality at very high level. Twelve people evaluated the impact of increased sense of belonging on the participation of children high and 88 people evaluated it very high, so it was concluded that children participation in the activities can increase their sense of belonging at a very large extent.

Considering other factors, eleven people evaluated the impact of children participation in creating sense of security in children high, and 89 people evaluated it very high. Therefore, it was concluded that children participation affects the sense of security of children at a very high level; the diagram below indicates this result. One person evaluated the impact of the children partnership in creating friendly environment high and 99 people evaluated it very high. Therefore, it could be concluded that the participation of children helps in creating a friendly environment at a very large extent. Five people believed that group participation increases group activity and 95 people believed that group participation increases group activity at a very high level. Therefore, it can be concluded that the high participation of children increases group activity of children at a very large extent. Twelve people evaluated the impact of the environment attractiveness on raising the child's intellectual level

high, and 88 people evaluated it very high. It could be concluded that the attractiveness of environment had a very high impact on increasing the intellectual level of the children. Eight people evaluated the impact of the increased intellectual level of children on friendly environment high and 92 people evaluated it very high, showing that friendly environment enhances the intellectual level of child at a larger extent. One person evaluated the impact of high intellectual level of children on group activity high, and 99 people evaluated it very high, showing that high intellectual level of children increases their group activity at a very high level.

Research hypotheses

1. Children's library is effective in enhancing the spirit of children and filling the leisure time of them.
2. Increasing the quality of children's library in Qom city has significant impact in attracting children.

Mean test

Considering the hypotheses and mean test for questions above, the mean of people responses to the questions was 3.5.

Table 1: descriptive statistics of sample

One-sample statistics				
	N	Mean	Std.deviation	Std. error maen
X1	100	3.9300	.25643	.02564
X6	100	3.8800	.32660	.03266

According to the table, mean values for the first question was 3.93 and it was 3.88 for the second question, showing that people believed that recreational land use for children has impact on the attractiveness of the library environment.

Table 2: T-student test

One-sample test						
	Test value = 3.5					
	T	Df	Sig. (2- tailed)	Mean difference	95% confidence interval of the difference	
					lower	Upper
X1	16.769	99	.000	.43000	.3791	.4809
X6	11.635	99	.000	.38000	.3152	.4448

The mean test confirmed the hypothesis. The value of the sig (significant) was 0.007and 0, respectively which was less than 0.05 suggesting that the considered mean was in the mean range. Additionally, friendly educational space in children would increase the sense of belonging of children. At this stage, the regression analysis was performed. The age of the children was considered as a dependent variable (criterion), and the recreational land use, educational space, educational quality, child participation, and children's intellectual level were considered as predictor variables. Investigating regression pre-assumptions showed that there was no problem in using regression. In the following table, the values of multiple correlation coefficient and adjusted multiple coefficient of determination and SD and the multiple coefficient of determination have been shown. Correlation coefficient was equal to 0.3, showing the correlation between variables as significant. The value of the coefficient of determination was 0.090, indicating that the linear regression was fitted, and approximately explained 0.09% of total changes.

Table 3: values of correlation coefficient and SD of multiple determination coefficient

Model	Correlation coefficient	determination coefficient	Adjusted multiple determination coefficient	SD of multiple determination coefficient
1	.300[a]	.090	.042	6.21700
2	.299[b]	.090	.051	6.18567
3	.292[c]	.085	.057	6.16793
4	.268[d]	.072	.053	6.18145

Table below provides the necessary information on predictor variables. Based on the results, the presented model has been a good model for regression.

Table 4: variance analysis test

Model		Sum of squares	df	Mean squares	Fisher statistic	Sig level
1	Regression	359.705	5	71.941	1.861	.109[b]
	Residual	3633.205	94	38.651		
	Total	3992.910	99			
2	Regression	357.974	4	89.494	2.339	.061[c]
	Residual	3634.936	95	38.262		
	Total	3992.910	99			
3	Regression	340.743	3	113.581	2.986	.035[d]
	Residual	3652.167	96	38.043		
	Total	3992.910	99			
4	Regression	286.512	2	143.256	3.749	.027[e]
	Residual	3706.398	97	38.210		
	Total	3992.910	99			

The following table provides information about the predictor variables. This table provides us necessary information to predict the dependent variable. As can be seen, the beta value or standard regression coefficient was -0.183 for children participation, 0.271 for the intellectual level of children, suggesting the rate of impact of independent variables on the age variable.

Table 5: regression analysis results

T		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.797	23.952		.701	.485
	Land use	.605	2.860	.022	.212	.833
	space	-2.231	3.186	-.074	-.700	.485
	Quality	5.271	4.279	.131	1.232	.221
	Participation	-9.208	4.748	-.207	-1.939	.055
	Thinking level	9.442	4.256	.247	2.218	.029
2	(Constant)	17.958	23.197		.774	.441
	space	-2.037	3.036	-.068	-.671	.504
	Quality	5.306	4.254	.132	1.247	.215
	Participation	-9.185	4.723	-.206	-1.945	.055
	Thinking level	9.497	4.227	.248	2.247	.027
3	(Constant)	12.359	21.582		.573	.568
	Quality	5.043	4.224	.125	1.194	.235

	Participation	-8.983	4.700	-.202	-1.911	.059
	Thinking level	8.986	4.146	.235	2.168	.033
4	(Constant)	23.460	19.519		1.202	.232
	Participation	-8.135	4.656	-.183	-1.747	.084
	Thinking level	10.343	3.996	.271	2.589	.011

In the following linear model, the dependent variable was age.

X1 was the participation of children variable
X2 was the intellectual level of children variable
$Y = 23.46 - 8.983\ x_{i1} + 10.343\ x_{i2}$

In the equation above, by placing children participation values and intellectual level of children, the age of people can be predicted.

Conclusion and recommendations

Locating and identifying the site

The considered site is limited to Saheli Street from north, Amin Boulevard from south, Bagherolum University from east, and Masumieh Research Center from west. Amin Boulevard area is located in the South-Western Province of Qom and it is located in District 4 of Qom Municipality in terms of the urban position. Based on the comprehensive regional plan, the land use of this region was 13750m.

Physical characteristics of site

At the current time, this area is located in the cultural land use.
This site has two accesses from Mohammed Amin Boulevard and Saheli Street.
The considered site due to being located in Mohammed Amin Boulevard has the best view.
This site is located in smooth status and no particular topography has been seen in it.

The area of site selected for designing is 13750 square meters.
The potentials of the site have been represented in swot table.

Table 6: swot table

Geometric and physical structure around the site design	
Advantages	• Educational space in the living place • Child playground has proper view from green space for building
Disadvantages	The creation of noise pollution, creation of nuisance by vehicles in front of neighbors door, creation of a nuisance for neighboring buildings, creation of traffic in the area
Opportunity	The possibility of supplying educational needs
Threat	creation of a nuisance for residents of the area
Policy	Creating proper design compatible with neighboring area
Solution	Observing privacy between neighbors and the considered site

Physical security in the design site	
Advantages	Mental well-being and relaxation
Disadvantages	• roadway and pedestrian path interference and reducing the physical security • spaces and places cause physical damage
Opportunity	Designing and development of safe spaces to increase the physical security of children

Threat	Creating insecure spaces for children causing physical damage for them
Policy	Creating spaces with high physical security
Solution	• Separation and defining the roadway and sidewalk privacy • Converting inner area to sidewalk to increase the security and safety

Human traffic in design site	
Advantages	The potential of high security of one location
Disadvantages	• Increased noise pollution • Presence of diverse cultures
Opportunity	The possibility of public familiarity with considered area
Threat	Reduced security
Policy	Improve the quality of sidewalks
Solution	Creating privacy for library

The climate relative to design site	
Advantages	• There is no limitation in the case of desired wind to site • There is no obstacle for desired sunlight
Disadvantages	Troublesome wind comes from the East and Northeast to the site
Opportunity	• The possibility of creating desired light inside the building • Using natural light • The possibility of creating desired light to building
Threat	• overheating of the building as a result of light • The presence of harmful insects
Policy	• Using climate elements for lightening the building and site • Cooling the surrounding air
Solution	• Planting tree in the direction of troublesome light • Taking measure to prevent insects

View of design site	
Advantages	Full vision from southern and northern side of the building
Disadvantages	Building is not viewed from western and eastern sides
Opportunity	The possibility of creating spatial attractiveness in the area
Threat	Forming improper behaviors due to lack of enough vision
Policy	Using the space that has enough vision
Solution	Placing diverse and attractive land uses in various parts

Social security	
Advantages	• Feeling security by child in dealing with other children • Increased social interactions in child
Disadvantages	The presence of children with diverse cultures beside each other
Opportunity	The possibility of creating spaces with high security for children for social participations
Threat	The accumulation of social offenders in the area
Policy	Increasing the social security for children
Solution	Lack of private spaces to increase social security

Creating land use relative to design site	
Advantages	• Land uses attracting population • Diversity due to various land uses • Having appropriate vegetation

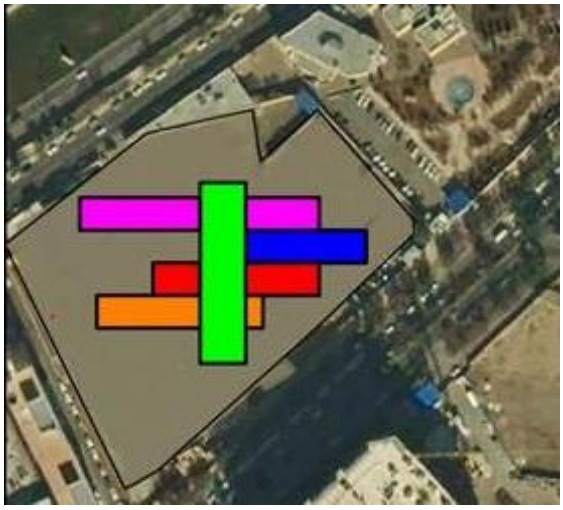
Disadvantages	• Interference in movement of mounted and dismounted • Occupying major part of street by vehicles • Noise pollution
Opportunity	The possibility of constructing a child library to fill the leisure time of children
Threat	Converting the space for recreation of children not for educating them
Policy	Meeting the recreational and educational needs of children
Solution	Designing a recreational and educational space for children with surrounding land use

Source: author

Investigating the neighborhood status of the site

Concept of design

- Using Piaget theory in the 4 steps of child's growth and assigning a cuboid drawn to each of the steps.
- Making a difference in the height in volume pieces in stepwise manner to show the growth concept



- In the geometric form, garden pit would be used to make use of earth frigidity in summer and supplying the open courtyard, while maintaining privacy
- Creating the attractiveness in building form and diversity in spaces through combining the broken volumes and the difference of vertical and horizontal surfaces

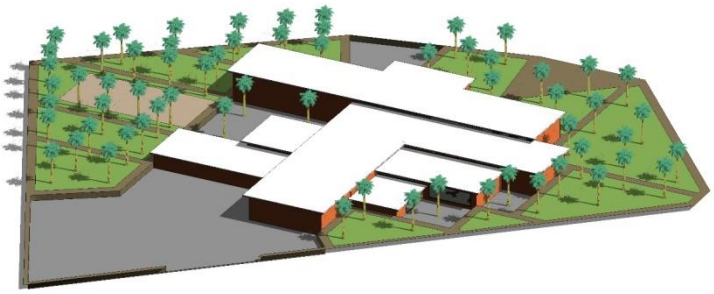
This site was chosen because of the presence of cultural and educational land use, which municipality has allocated to this area.

Considering the position, site 2 has been considered as the best entrance to the site entrance from Amin Boulevard and the other entrance has been considered from Saheli Street.

Organization of spaces and forms

- Fracture of volumes, garden pit and surrounding trees have significant role in shading various parts
- The attractiveness in the building form and diversity in spaces was provided through the combination of broken volumes and vertical and horizontal surfaces.

Pictorial report of the final design has been provided below.



Ultimate design render.

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