

Investigating and designing library for children in Qom

Sajedeh fardi¹, morteza seddigh^{*2}

Department of architecture, college of art, khomein branch, islamic azad university, khomein, iran.

A faculty member at the nonprofit Deylaman

Abstract

Currently, library plays major role in the social, political, economic, and cultural development of a society. It also plays 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 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 environmental conditions. They are very curious and try to understand the world around themselves. Each child should obtain knowledge of himself and he should be able to communicate with the world around himself. Based on these individual differences, 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 the society and in their most important years of their life, when the base of their personal, physical, and social growth is formed, they need to experience social life at their scale and this requires providing space for children. In the present study, it was tried that a library to be designed that is special for children to meet their needs and a childhood and intimate space to be provided, free from turmoil of the world of adults and full of joy in which child finds an opportunity to express new ideas and foster his capacities and creativity.

Keywords

library, child, education, child space, mind, creativity

1. Introduction

In today's architecture, designing for specific groups of people in the society (in terms of mental and physical characteristics) has special importance, since the function of each space is specified by its audiences and their characteristics. Therefore, public buildings built for specific groups of people, due to kind of audience, may induce architects and planners to design the architecture form and space in harmony with them. Children and kids are subset of these groups of people. This age group requires different parameters for architecture design both in terms of intellectual and psychological characteristics, and in terms of physical characteristics. Therefore, architecture spaces will have 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, base libraries, and as supporters of individual educational efforts

in independent salons of library and virtual software library beds. Therefore, libraries play important role in education of society and they act uniquely, and libraries are considered as one of the characteristics of the changes in the information society. People have to come to the library to assist themselves in order to conduct studies individually or through virtual service active in libraries. This individual effort is result of the concept of the information society, which focuses on power of knowledge and re-provision of knowledge as result of human mind. In a society in which obtaining information takes time, to access information and to create and update information and use it, in addition to the need to develop continuous learning abilities, people need for information literacy skills. For this reason, libraries are an important place in the information society. In addition, libraries are institutions that create and distribute information. Libraries have their vital role with their features and people in society should promote their informational needs. Children in order to take advantage of their childhood years well and obtain required capabilities and abilities to provide service for others, book is necessary for them. If children are prevented reading good books, it will leave heavy and irreparable cost for them. At the beginning of life, the child does not have any knowledge and his readiness is so low. Therefore, on one hand, he should obtain knowledge of himself and his relation with this world, and foster the ability to absorb and coordinate the facts and ideas on the other hand. The reasons make library for adults necessary are also true in children. The most important reason is that few people can achieve small part of the useful books by ways other than borrowing them from libraries. Although some adults can buy books for themselves, but if there were not library, they would have been deprived reading books. Only a few of children are able to buy book 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.

2. Background of children library in the world and Iran

International Youth Library in Munich is the largest and most important library in the world, which includes large set of youth and children literature around the world. This

library was founded after World War II on December 15, 1949 by Layan 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 financial support of US Rockefeller institution, and Lpmn headed it for ten years. This library was transferred to palace in the old reconstructed castle belonging to the 15th century outskirts of Munich called as Bulleton Berg. The library is 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 is 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 past, a large part of library resources was provided by efforts of librarians in the form donors by publishers of children 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 part of the public libraries in Iran backs to 4956 in Tabriz that after the opening of the National Library in that city, a room was allocated to children books. According to report published in this regard, its functioning was announced for public. To our knowledge, the first public library special for children was firstly established in Tabriz city in Iran. Children library is a room with 5.4 and 6.5 meters in length and width that its light is provided by eastern windows (Mohammadi, Gaeeni, 2001, 190). Since today's world becomes a communication network to transmit ideas and information, to keep a pace with and to make rational use of this mode is one of the important tasks of today's society, while level of study of each Iranian citizen is so lower than the global standard level. As childhood is the trial and error period of life, it is necessary that child's curiosity to discover the world around himself to be guided in the correct and targeted path to find answer for his questions in academic environment and to be familiar with method of study and academic centers since childhood. There are several libraries in Qom, but the important thing is that most of these libraries in Qom are religious libraries dedicated for adults. For this reason, Qom city was selected in this study (Mozmen, 2006, 185-171). Thus, this study aims to design a library for children in the city of Qom, the library that is appropriate for this age group in terms of size standards and space proportions, and their quality and type of function.

3. Method

The method of study is descriptive and it is applied in terms of objective. Population of study included kindergarten and library educator, mother and father of the children,

kindergarten and library officials. Simple random sampling method (srs) was used and sample size was determined to be 100 people using Cochran formula. In the present study, to gather the necessary information required for subject of study and questionnaire data, 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 has 5 options including very high, high, moderate, low, and no idea. In order to confirm the validity of the questionnaire, 10 copies of content table of the questionnaire, and then 10 copies of the questionnaire were provided for expert individuals in this area including Dr. Korram and Dr. Dezfuli so that content and face validity of it to be confirmed. In addition, the value of 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 analysis of variance, regression analysis, multifactorial variance analysis, regression analysis, Cronbach's alpha, Kolmogorov-Smirnov test, Cochran, and Spearman correlation coefficient were used.

4. Findings

According to the results obtained, 32 people with high school degree, 15 people with associate degree, 39 people with bachelor degree, and 13 people with master degree, and 1 person with PhD degree were participated in this study. In addition, 41 people at age range of 20 to 30 and 49 people at the age range of 30 to 40 and 10 people at age range of 40 to 50 years were participated in this survey. In order to examine the normality, Kolmogorov-Smirnov test was used that results indicated that all research questions are normal. According to the results related to this question, it was concluded that 93 people have believed that the size of recreational land use had very high impact on attractiveness of library environment and 7 people also estimated this impact high. Therefore, we conclude that the recreational land use for children has very high impact in the the attractiveness of the library environment. Additionally, 69 of participants believed that the impact of the recreational land use in creating friendly environment is very high and 4 people also estimated this impact high. Therefore, we conclude that the recreational land use causes friendly environment at very high extent. In addition, 93 people believed that the impact of the recreational land use on creating group activities between children was very high and 7 people believed that the level of this impact was high. Therefore, we conclude that recreational land use is

effective in creating activities between children at very high level. Moreover, 85 persons in the survey evaluated the impact of the recreational land use on meeting the recreational needs of children very high, and 15 people evaluated it high and this value is evident in the diagram. We concluded that recreational land use meets needs of children at very high level. Eleven people evaluated the impact of security in educational on creating a sense of belonging high and 89 people evaluated it very high. Therefore, we conclude that security in educational space has impact on creating a sense of belonging in a very large extent. Diagram below shows it clearly. Twelve people evaluated the sense of belonging of educational space on children high and 88 people evaluated it very high. Therefore, these types of educational spaces increase the sense of belonging of children at high level. In addition, 20 people evaluated the impact of sense of belonging in educational in mental relaxation of children high, and 80 people evaluated it very high. One person evaluated the impact of educational space in creating sense of belonging in the friendly environment of children moderate, 14 people evaluated it high, and 85 people evaluated it very high. Therefore, we concluded that educational space by creating sense of belonging affects the friendly environment of children. Four people evaluated the impact of physical security in educational quality of child high and 96 people evaluated it very high, so we conclude that high physical security can increase the educational quality at very high level and the diagram indicates it. One person evaluated the sense of belonging impact on the quality of children's education moderate, 10 people evaluated it high, and 89 evaluated it very high. Therefore, according to table and frequency diagram, we conclude that high level of sense of belonging can affect the educational quality of child at very large extent. Thirteen people evaluated the impact of children group activity on educational quality high and 87 people evaluated it very high. Therefore, we conclude that group activities in children increase the educational quality of children at large extent. Six people evaluated the impact of physical attractiveness of environment on educational quality high, and 94 people evaluated it very high. Therefore, we conclude that physical attractiveness of environment increases educational quality at very large extent. One person evaluated the impact friendly educational environment in enhancing educational quality moderate, 7 people evaluated it high, and 92 people evaluated it very high, which it is evident in the diagram. Based on the observations, we conclude 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 we can conclude that children participation in the activities can increase their sense of belonging at very large extent. Eleven people evaluated the impact of children

participation in creating sense of security in children high and 89 people evaluated it very high. Therefore, we conclude that children participation affects the sense of security of children at very high level and 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, we can conclude that the participation of children helps in creating a friendly environment at very large extent. Five people believed that group participation increases group activity and 95 people believed that group participation increases group activity at very high level. Therefore, it can be concluded that the high participation of children increases group activity of children at very large extent. Twelve people evaluated the impact on the environment attractiveness on raising the child's intellectual level high, and 88 people evaluated it very high. It can conclude that the attractiveness of environment has very high impact on increasing the intellectual level of the children. Eight people evaluated the impact of increased intellectual level of children on friendly environment high and 92 people evaluated it very high. Therefore, we conclude that friendly environment enhances the intellectual level of child at larger extent. One person evaluated the impact of high intellectual level of children on group activity high, and 99 people evaluated it very high. Therefore, it could be concluded that high intellectual level of children increases their group activity at very high level.

Testing research hypotheses

- 1- Child library is effective in enhancing the spirit of child and filling the leisure time of child.
- 2- Increasing the quality of child library in Qom city has significant impact in attracting children.

Mean test

According to the hypotheses and mean test for questions above, the mean of people responses to the questions is 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 is 3.93 and it is 3.88 for the second questions. It suggests that people believe that recreational land use for children has impact on attractiveness of 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 confirms our hypothesis. The value of the sig (significant) is 0.007 and 0, respectively that is less than 0.05, and it suggests that the considered mean is in the mean range, that is, people believed that the recreational land use for children is effective in attractiveness of environment. In addition, friendly educational space in children increases the sense of belonging of children.

At this stage, we perform the regression analysis. The age of the child variable was considered as a dependent variable (criterion) and of 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 is no problem in using regression. Results of regression analysis will be shown later. In the following table, the values of multiple correlation coefficient and adjusted multiple coefficient of determination and SD and the multiple coefficient of determination are shown. Correlation coefficient is equal to 0.3, which suggests the correlation between variables is significant. The value of the coefficient of determination is equal to 0.090 that this means that linear regression is fitted and approximately explains 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	.300a	.090	.042	6.21700
2	.299b	.090	.051	6.18567
3	.292c	.085	.057	6.16793
4	.268d	.072	.053	6.18145

Table below provides necessary information on predictor variables. Sum of squares, degree of freedom, and mean squares, Fisher statistic, and significant levels in the three fitted models fitted are shown in the table, which significance level in the sig column is less than 0.05. We conclude that the presented model is a good model for regression.

Table 3- variance analysis test

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

4Regression	286.512	2	143.256	3.749	.027e
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. You see that constant value and predictor variable of both models are significant in the model. After determining significance value, constant value, and variables of social behavior and green space, standardized coefficients column represent the standardized regression coefficients or beta value. The beta value or standard regression coefficient is -0.183 for children participation, 0.271 for intellectual level of children, which suggests 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 is age

X1 is participation of children variable

X2 is 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

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

comprehensive regional plan, predicting the land use of this region with an area of 13750m is considered as cultural.

Physical characteristics of site

Land use at current time

At current time, this area is located to cultural land use.

Investigating accesses available on the site

The considered site has two accesses from Mohammed Amin Boulevard and Saheli Street.

Investigating proper views of site

The considered site due to being located in Mohammed Amin Boulevard has the best view from this side.

The topography of the site

The considered site in terms of the difference in height at different points is located smooth status and particular topography is not seen in it.

Site area

The area of site selected for designing is 13750 square meters

Potentials of the site

These potentials have been represented in swot table.

Table 6- swot table

Geometric and physical structure around the site design	
Advantages	<ul style="list-style-type: none"> Educational space in the living place Child playground has proper view from green space for building
Disadvantages	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The possibility of supplying educational needs
Threat	<ul style="list-style-type: none"> creation of a nuisance for residents of the area
Policy	<ul style="list-style-type: none"> Creating proper design compatible with neighboring area
Solution	<ul style="list-style-type: none"> Observing privacy between neighbors and the considered site

Physical security in the design site	
Advantages	<ul style="list-style-type: none"> Mental well-being and relaxation
Disadvantages	<ul style="list-style-type: none"> roadway and pedestrian path interference and reducing the physical security spaces and places cause physical damage

Opportunity	<ul style="list-style-type: none"> Designing and development of safe spaces to increase the physical security of children
Threat	<ul style="list-style-type: none"> Creating insecure spaces for children causing physical damage for them
Policy	<ul style="list-style-type: none"> Creating spaces with high physical security
Solution	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The potential of high security of one location
Disadvantages	<ul style="list-style-type: none"> Increased noise pollution Presence of diverse cultures
Opportunity	<ul style="list-style-type: none"> The possibility of public familiarity with considered area
Threat	<ul style="list-style-type: none"> Reduced security
Policy	<ul style="list-style-type: none"> Improve the quality of sidewalks
Solution	<ul style="list-style-type: none"> Creating privacy for library

The climate relative to design site	
Advantages	<ul style="list-style-type: none"> There is no limitation in the case of desired wind to site There is no obstacle for desired sunlight
Disadvantages	<ul style="list-style-type: none"> Troublesome wind comes from the East and Northeast to the site
Opportunity	<ul style="list-style-type: none"> The possibility of creating desired light inside the building Using natural light The possibility of creating desired light to building
Threat	<ul style="list-style-type: none"> overheating of the building as a result of light The presence of harmful insects
Policy	<ul style="list-style-type: none"> Using climate elements for lightening the building and site Cooling the surrounding air
Solution	<ul style="list-style-type: none"> Planting tree in the direction of troublesome light

	<ul style="list-style-type: none"> • Taking measure to prevent insects
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View of design site	
Advantages	<ul style="list-style-type: none"> • Full vision from southern and northern side of the building
Disadvantages	<ul style="list-style-type: none"> • Building is not viewed from western and eastern sides
Opportunity	<ul style="list-style-type: none"> • The possibility of creating spatial attractiveness in the area
Threat	<ul style="list-style-type: none"> • Forming improper behaviors due to lack of enough vision
Policy	<ul style="list-style-type: none"> • Using the space that has enough vision
Solution	<ul style="list-style-type: none"> • Placing diverse and attractive land uses in various parts

Social security	
Advantages	<ul style="list-style-type: none"> • Feeling security by child in dealing with other children • Increased social interactions in child
Disadvantages	<ul style="list-style-type: none"> • The presence of children with diverse cultures beside each other
Opportunity	<ul style="list-style-type: none"> • The possibility of creating spaces with high security for children for social participations
Threat	<ul style="list-style-type: none"> • The accumulation of social offenders in the area
Policy	<ul style="list-style-type: none"> • Increasing the social security for children
Solution	<ul style="list-style-type: none"> • Lack of private spaces to increase social security

Creating land use relative to design site	
Advantages	<ul style="list-style-type: none"> • Land uses attracting population • Diversity due to various land uses • Having appropriate vegetation
Disadvantages	<ul style="list-style-type: none"> • Interference in movement of mounted and dismounted • Occupying major part of street by vehicles • Noise pollution
Opportunity	<ul style="list-style-type: none"> • The possibility of constructing a child library to fill the leisure time of children

Threat	<ul style="list-style-type: none"> • Converting the space for recreation of children not for educating them
Policy	<ul style="list-style-type: none"> • Meeting the recreational and educational needs of children
Solution	<ul style="list-style-type: none"> • Designing a recreational and educational space for children with surrounding land use

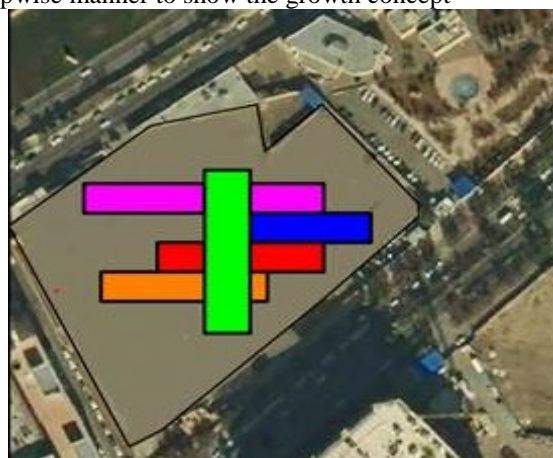
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Investigating the neighborhood status of the site

The considered site is limited to Saheli Street from north, Amin Boulevard from south, Bagherolum University from east, and Masumieh Research Center from west.

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 volumes pieces in stepwise manner to show the growth concept



- In the geometric form, the use of garden pit to make use of earth fridgity in summer and supplying the open courtyard, while maintaining privacy

- Creating the attractiveness in building form and diversity in spaces using combining the broken volumes and the difference of vertical and horizontal surfaces

Reasons to choose the site

The reasons for choosing this site was presence of cultural and educational land use, which municipality has allocated it to this area.

Entrance path to complex

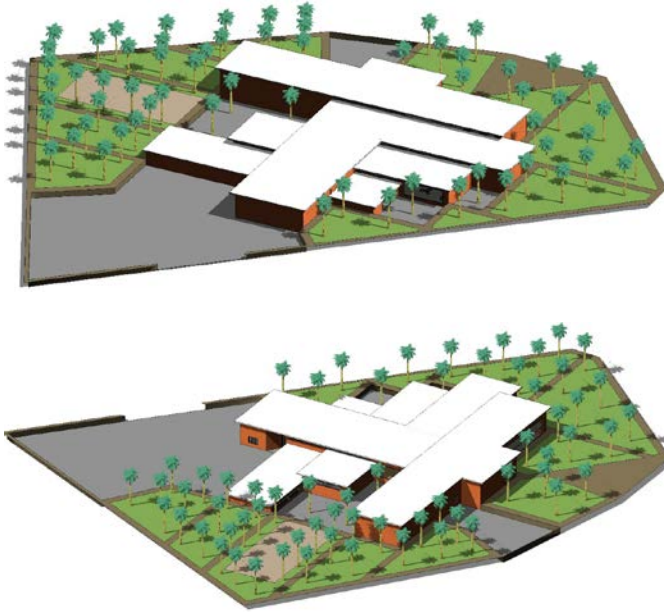
Considering the position, site 2 has been considered as entrance that is the best point for site entrance from Amin Boulevard and the other is from Saheli Street.

Organization of spaces and forms

- Fracture of volumes, garden pit and surrounding trees have significant role in shading various parts

- Creating attractiveness in the building form and diversity in spaces using combination of broken volumes and vertical and horizontal surfaces difference

Pictorial report of final design



Ultimate design render



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