Full Length Research Paper

Environment designing considering the needs of youth according to Abraham Maslow's needs case study: District 9 of Isfahan City

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This study aims to design an environment for the youth by considering their needs and interests. This study sought to provide all of the needs of the youth by environmental affordances according to the hierarchy of needs developed by Abraham Maslow. It was conducted in district 9 of Isfahan city on about 380 of young people and evaluated 8 suggested spaces with 6 groups environmental affordance by use of questionnaire. The findings indicated all the needs of the youth were met based on Abraham Maslow's needs. It was also found that belonging needs were prioritized, accordingly amphitheater was introduced to be the most favorable place as this environment is able to provide the affordances of being with friends and meeting new friends.

Key - words: Youth, environmental affordance, Abraham Maslow, basic needs, cognitive needs.

INTRODUCTION

This work aims to design appropriate areas for youths so that their needs and interests could be met as an influential factor in developing their personality. Fulfilling the interests and needs of the young people may make them healthy, dynamic and useful for their community. Thus, designing proper environment in which young people could have useful activities is of major importance.

Much research on adolescents' use of environments has focused upon desirable environments (van Andel, l990; Korpela, 1992; Lieberg, 1997), place preference (Malinowski and Thurber, 1996) and valued places (Owens, 1988; 1994). Examining valued and preferred places enables the identification of the environments adolescents enjoy. As yet the relationship between preference and the frequency an environment is visited has not been explored.

Korpela (1989; 1992) found that his subjects often went to their favorite places to relax, to calm down, and to clear their minds after threatening or emotionally negative events. In addition, experiences of beauty, control, freedom of expression and escape from social pressures were reported.

Affordances are the possibility for action afforded to an observer by an object in the environment. Hence, this study is seeking to create affordances - in fact the

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possibility - for different activities in an environment so that they could meet the needs of the youth. These needs were classified according to Abraham Maslow's needs - physiological needs, safety needs, belonging needs, esteem needs, cognitive and self- actualization needs.

LITERATURE REVIEW

Optimal locations related to youth needs

The scope and the type of the young people needs might be innate or acquired, natural or unnatural. However, various needs and their development in youth are the reasons for movement and activities and a cause to achieve growth, physical and mental health and happiness and joy, and must be a concern to all planners.

As children become older, they grow increasingly aware of the opportunities presented by various settings and places for meeting their personal needs - for satisfying their desires for pleasure and stimulation or, conversely, for comfort or succorance. By asking young people about their place preferences, one gains insight into how they see their environments affecting them and the sorts of places that they would seek in order to meet their needs for pleasure and adventure, for stimulation, or for relaxation, refreshment, and renewal (Sommer, 1990).

Much research on desirable environments for adolescents were performed. Korpela (1992) and Lieberg (1997) revealed that home environment is a favorite place and that private places are more favorable than the public spaces. Some other findings have shown that young people prefer environments such as shopping centers, commercial places and the green spaces close to their homes. Owens (1988) interviewed 25 California 14 to 18 years old and asked them about the two outdoor places in their community that they valued the most. The most valued places were the nearby national park and undeveloped agricultural land, followed by the town park, places at home, places at school, views, commercial areas, and the communal greenbelt. From her own research, observations, and review of the literature, Owens concluded that the outdoor places that teenagers need and value are natural and undeveloped landscapes; gathering places; places to be alone; places that offer freedom and activity; places where they can see out but not be seen; and places that are safe, accessible, and can be called their own. Owens (1994) also examined why environments are valued and found that different environments are valued for different reasons. Mainly parks, commercial areas and school environments are valued. Owens (1994) did not specifically use the word "affordances"; rather, she matched the needs of the adolescent with the amount of support available in the environment for that specific need.

Duzenli et al. (2010) in their study had shown that adolescents prefer urban environments in which they can socialize with their friends and engage in various activities. It was determined that city centers and city parks are spaces that foster friendship relations between adolescents and promote development of social roles.

These findings indicate that the environment in which the age characteristics, needs and interests of the youth are well considered are desirable and attended properly. Adolescents spend their time in spaces they like, spaces that interest them, and spaces of their own choosing.

Gibson's theory of affordances

Environments have geographical and cultural characteristics with an internal relationship and support some behaviors in the same way. A set of environment affordances in a specific situation creates a potential environment for individual's behavior. All of these affordances are not understood by people and all understood affordances are not used (Lang, 2011).

Gibson's theory has been widely used by both perceptional and environmental psychologists. This theory is an approach that suggests seeking the functional meaning of the environment. Environmental affordances investigations help us to understand the different behaviors exhibited. Gibson's (1979) theory enables the functional properties of the environment and the psychological/behavioral response to the environment to be examined together. Theory of affordances is an environmental psychology method that helps explain "functional meaning" for adolescent environments and it is used to describe the relation between the functional features and the use of the environment. Gibson's theory of affordances states that environmental perception is a direct process and that perception takes that form of the individual perceiving affordances in the environment; 'The affordances of the environment are what it offers the animal, what it provides or furnishes either for good or ill'.

Affordances are therefore the possibility for action afforded to an observer by an object in the environment (Bruce and Green, 1993). Objects have instantly detectable functions and are perceived in terms of what they afford, not what properties or qualities they have. Gibson uses the term "affordance" as a tool for explaining the environment in the context and through the vocabulary of "activities". Among the various features of the environment, the ones that are defined as "affordances" are those that match the needs of individuals and assist them in their tasks (Fajen and Turvey, 2003). In summary, individuals perceive the affordances that have functional importance to them. In other words, the existence of an affordance requires cohesion between the individual and the environment (Withagen and Michaels, 2005). There are two main principles in Gibson's theory of affordances:

- Individuals and the environment are inseparable.
- Individuals perceive the environment directly, without

going through a mental process.

This theory supports the view that people and the environment are dependent on each other from an ecological perspective (Heft, 2001). Each environmental feature provides certain potential for a certain task, for certain individuals.

Gibson (1979) states that affordances can be physical such as a fire affording warmth, light and illumination but can also be provided by the presence of other people, for example social interaction, fighting and nurturing. In fact, Gibson believed that the richest and most intricate affordances of the environment are those provided by other people. These types of affordances are therefore distinguished from physical affordances by their social component.

One of the first environmental psychologists to utilize Gibson's theory to examine functionality was Heft (1988). Heft's aim was to create taxonomy for the significant properties of children's environments. Heft found copious examples of the potential affordances of children's environments and created taxonomy of children's outdoor environments. Heft's taxonomy aimed to classify children's environmental experiences. However, Heft's taxonomy failed to describe the affordances provided by other people in the child's environment; however, according to Gibson the affordances provided by other people are the richest affordances available of the theory. This is the weakness of Heft's work. Kytta (1995) used Heft's taxonomy and also included social interaction as an affordance type in the theory. In her study conducted on the affordances for children of different types of surroundings in Finland, Kytta (1995) asked each child "if there were such place, where would you like to do each type of affordance".

Environment affordances and meeting human needs

Motalebi (2001) describes that motivation is a guiding and organizing force of perception, cognition or purposeful human behavior. Behaviors come into action to meet the needs. Therefore, identifying human needs is very important for environmental designers. According to Maslow, human needs and motivations are innate and are born with them. Therefore, man relies on his innate motivations to find a way to fulfill his interests and carry out it willingly in order to satisfy special need. Thus, human tried to reach his needs through interaction with environment and changing its affordances and relying on his innate motivations, and he may make environment meaningful through changing different levels of environment and its affordances. In the built environment or particularly in architecture, we can identify different levels of environmental affordance proportionate to the above-mentioned human needs. In general, three different levels of affordances are recognized in the built environment and architecture by the perceiver:

1) Affordances which are necessary expected to physically interact with environment. This physical interaction provides the basic needs of people such as walking, eating, sleeping, etc.

2) Affordances which are required for communication, social interaction and interpersonal communication. At this level, architectural affordances are the mediators for encoding and decoding.

3) Affordances which are expected to satisfy symbolic and mysterious desires and interactions along with cultural and spiritual characteristics. Physical environment does not represent such meanings and affordances to other creatures other than human being (Motalebi, 2006).

Clark and Uzzell (2002) grouped the urban environments as home environment, neighborhood, school environment and city center; and they aimed to develop a scale that would measure the affordances of these environments. Affordances were measured to study two key adolescent needs; namely, need for social interaction and the need for retreat.

Jon Lang (2011), in his book "creating architectural theory", stated two models of human needs which are used by the designers to explain human affordances of the built environment. These two models are: the scale of essential emotions in competition by Alexander Leighton and hierarchy of human needs by Abraham Maslow. Although Maslow model is similar to Leighton model, it is more useful to design the environment. This classification provides a useful framework for environment design thought and issues concerned by designer. The built environment provides human biological needs such as shelter, safety needs including physical and psychological security, belonging and esteem needs through environmental symbolism; self-actualization needs through freedom of choice; cognitive needs through accessing to opportunities for growth and aesthetic needs through formal beauty.

Maslow's hierarchy theory of needs

In this research, in addition to meeting the most important needs of the youth which are prior to other needs, it is attempted to take meeting their needs into consideration and in this regard, We consider meeting the needs based on Maslow's hierarchy of needs. Maslow believes that needs could be arranged hierarchal or stepwise, so that every higher step represents higher need, but less essential for survival (Feist and Feist, 2002). The Lower level needs overcome higher level needs that means they must be satisfied first (Schultz and Schultz, 1998).

Maslow (1970) defines the first step of human needs as basic needs or physiological needs, the needs that provide human life whenever they are met. In Maslow's opinion, physiological needs are the most powerful and important human needs. Although these needs vary widely in different cultures, the most important ones are need to water, food, oxygen, sleep and rest.

If physiological needs are completely or partially

satisfied, safety needs including physical security, stability, affinity, protection and escape from threatening forces such as sickness, horror, anxiety, danger, and chaos will provoke them. Needing law, discipline and structure are safety needs. When people are not influenced and dominated by biological and safety needs, emanation and love and belonging needs come into action. In general, social interaction, emotional ties with friends and relatives and belonging to the spouse and children are some examples of this kind of needs. If affection and belonging needs are satisfied, people are free to follow their esteem needs which include self-esteem, self- confidence, competence and awareness of respect from others (Feist and Feist, 2002).

The most important need in Maslow's hierarchy of needs is self-actualization. If all lower level needs are met, but the person does not reach self-actualization which means fulfilling his potential capacities and talents, he will be feeling emptiness and failure (Maslow, 1970). Self-actualization needs mean self-perfection, fulfilling all talents and desire to get creative by all means. The needs that are mentioned here are Maslow's hierarchy of needs. In addition to these five needs, Maslow identifies two more needs including cognitive and virtuoso needs. Unlike effort needs, Virtuoso needs are not universal, but at least some people in every culture aroused by need to beauty and experiences which are pleasurable in terms of art. Human beings have art and effort needs as well as cognitive needs which means desire to learn, solving problems, understanding and being curious (Feist and Feist, 2002).

Therefore, meeting cognitive and virtuoso needs were considered in addition to basic needs in this center, in a way that in the built environment, virtuoso needs are met by formal beauty and cognitive needs are met by the environments predicted for meeting them.

This research mainly aims to design an environment for youth according to their needs and interests. This research is based on basic needs and cognitive needs of Abraham Maslow by environment affordances to meet all of the youth needs. The research questions are as follows:

1) Which of the basic needs and cognitive needs of the youth have priority, both in general and regarding the role of gender?
2) What kinds of affordances are provided by each suggested area in this center and what kind of youth needs could be met according to these affordances?
3) With regard to the highest priority need of the young people, what is the most favorable environment in their view point?

METHODOLOGY

Population and sampling

This research is conducted in the year 2013 and in district 9 of

Isfahan which is located in the west of the city. This city with a population of about two million people is located in the center of Iran, and in history, it is one of Iran's largest cities. The importance of this land is considered as its historical entity reaches the third millennium BC. According to the young people, aged between 18 and 25 years are located in the turning point adolescence. Thus, the population was considered of young boys and girls aged 18 to 25. In this study Morgan and Krejcie (1970) tables were used for the research sample. Morgan and Krejcie suggested a table to determine an accurate measured sample for a given sample space. Based on this table we have a sample of 377 from 2000 subjects and a sample of 379 from 3000 subjects. Since the number of young people from 18 to 25 is 23455 in district 9 of Isfahan in 2013, it is suggested that a representative sample of 380 subjects is sufficient; there are 196 girls and 184 boys in this representative sample and the sampling method was simple random sampling.

Research tools

Questionnaires were used for collecting data. In the questionnaire, physiological, safety, belonging, esteem, self-actualization and cognitive needs were introduced to the youth where they were asked about their prior needs to be satisfied. 8 different environments were chosen for designing in a center format for youths, who suggested zone for the construction of a center with an area of approximately 13 hectares, located in West of Isfahan. Some environmental affordances were considered for functional-meaning measurement of the environment. These affordances were selected based on the activities that meet 6 basic needs. Therefore, the introduced affordances were classified in 6 groups based on physiological, safety, belonging, esteem, self- actualization and cognitive needs and were also measured for every environment. This questionnaire consists of 6 scales which include 6 basic affordances and every scale consists of 8 items. Each subject responds to the items of this questionnaire in a five-degree scale (always, often, sometimes, rarely and never).

The collected data by the questionnaires were investigated by SPSS software and ANOVA, Friedman and independent sample tests were applied for comparison and P-value less than 0.05 was considered statistically significant.

RESULTS

Priority of the youth needs

To meet youth needs and interests, sufficient recognition must be obtained of their needs and priorities. This study made an effort to use Abraham Maslow's model of human needs for general needs of youth. The result of analysis indicated that young people chose the physiological needs with the mean of 2.85, safety needs with the mean of 2.83, belonging needs with the mean of 3.20, esteem needs with the mean of 3.06, self-actualization needs with the mean of 2.53 and cognitive needs with the mean of 2.96. By conducting Friedman Test, it was determined that there were significant differences between needs ($x2= 39.032$, df= 5, p=0.000). Thus, the most important need in youth opinion was belonging needs for which they had more willing to be met. After belonging needs, esteem needs, physiological needs, cognitive needs, safety needs and self-actualization needs were chosen by young people.

Priorities of youth needs based on gender

Needs priorities were also studied based on gender. The results indicated that girls chose belongingness needs with the mean of 3.34, esteem needs with the mean of 2.98, cognitive needs with the mean of 2.95, safety needs with the mean of 2.90, physiological needs with the mean of 2.82 and self-actualization needs with the mean of 2.55.

Boys scored esteem needs with the mean of 3.14, belonging needs with the mean of 3.04, cognitive needs with the mean of 2.98, physiological needs with the mean of 2.88, safety needs with the mean of 2.76 and self-actualization needs with the mean of 2.50. Therefore, it is indicated that, with significant differences, girls had more willing to meet their belonging needs and boys had more willing to meet their esteem needs more than other needs.

Independent sample test was used to compare boys and girls and the results were as follows: There was a significant difference between boys and girls concerning meeting safety needs (t=0.916, df=378, p=0.018) and belonging needs (t=2.03, df=378, p=0.043). This value indicated that girls had more willing to meet these two needs compared to boys. There was also a significant difference between boys and girls concerning meeting esteem needs (t=-1.09, df=378, p=0.010). This value indicated that boys are more willing to meet esteem needs compared to girls.

There was no significant difference between boys and girls concerning meeting physiological, cognitive and self-actualization needs.

Affordances provided by suggested spaces

One of the most important purposes of this study was to define provided affordances by suggested spaces. By conducting the ANOVA Test, it was determined that there was a significant difference between the affordance chosen by the youth and other affordances for every environment. The results of ANOVA Test are presented in Table 1.

Selected affordance for every environment are as follows:

- The affordance of (first group) eating and drinking was provided in the restaurant with the mean of 4.56.
- The affordance of (second group) feeling safe and being alone was provided in the green space with the mean of 4.26 and the greenhouse with the mean of 4.14.
- The affordance of being with friends and meeting new friends (third group) was provided in the theater with the mean of 4.44 and in the educational space with the mean of 4.32.
- The affordances of gaining self-confidence and fame (forth group) was provided in the debate and discussion

space with the mean of 4.37 and in the foppery and meditations space with the mean of 4.15.
- The affordances of reaching perfection and ascension (fifth group) was provided in the worship space (the space of wisdom and insight) with the mean of 4.41.
- And finally, the affordances of learning (sixth group) was provided in the educational space with the mean of 4.54. These results are illustrated in Figures 1, 2, 3, 4 and 5.

DISCUSSION

People refer to the environment to satisfy their desires. Some of the environments may respond to the hidden and unconscious desires which may occur with the affordances of a specific model. This study was conducted to investigate some of the factors which should be considered while designing an environment for the youth. In fact this research makes an effort to describe needs, desires and priorities of the young people and the relationship between such factors and the youth environments.

In this study Gibson Theory was used to evaluate functional properties of the environment with the behavioral - psychological reflection to the environment. Gibson uses the term "affordance" as a tool for explaining the environment in the context and through the vocabulary of "activities" (Fajen and Turvey, 2003). Affordances are therefore the possibility for action afforded to an observer by an object in the environment (Bruce and Green, 1993).

In this study it is attempted to design a center with different environments that each one has its own specific affordances for the youth. Hence these environments, with their own affordances, suggest different activities which lead to meeting youth needs.

The model of Abraham Maslow's needs plays a leading role as a perfect model of needs so that the youth needs are investigated based on Maslow's needs. Physiological, safety, belonging, esteem, self- actualization and cognitive needs of the youth are analyzed and they express their inclination for meeting those needs with priority. Statistics indicated that belonging needs with the mean of 3.20 are the most important need for young people. Thus, young people like to spend their time with their friends and do social activities. This result is consistent perfectly with the cultural history of people of Isfahan city. This people from the cultural perspective are warm blooded and have a strong social relations. For example, houses in the city were designed in such a way that the several households are living side by side.

An important criterion for the determination of the needs of adolescents is gender differences, Garton and Pratt (1991) and Fitzgerald et al. (1995) state that girls are more interested in social entertainments than boys. Boys are more interested in social activities. Studies on Australian adolescents of 13-17 age range reveal that the

Table 1. The results of the one-way ANOVA test.

Affordances		Sum of squares	df	Mean square	F	Sig.
Eating and drink	Between groups	2438.489	7	348.356	216.172	.000
	Within groups	4885.989	3032	1.611		
	Total	7324.479	3039			
Feeling safe, Being alone	Between groups	1987.941	7	283.992	164.558	.000
	Within groups	5232.584	3032	1.726		
	Total	7220.525	3039			
Meeting with new people, being with friends	Between groups	1071.292	7	153.042	88.360	.000
	Within groups	5251.482	3032	1.732		
	Total	6322.773	3039			
To gain self - confidence and fame	Between groups	2526.265	7	360.895	217.317	.000
	Within groups	5035.208	3032	1.661		
	Total	7561.473	3039			
To reach perfection and ascension	Between groups	2580.197	7	368.600	218.357	.000
	Within groups	5118.203	3032	1.688		
	Total	7698.400	3039			
Learning	Between groups	2436.393	7	348.056	193.091	.000
	Within groups	5465.342	3032	1.803		
	Total	7901.736	3039			
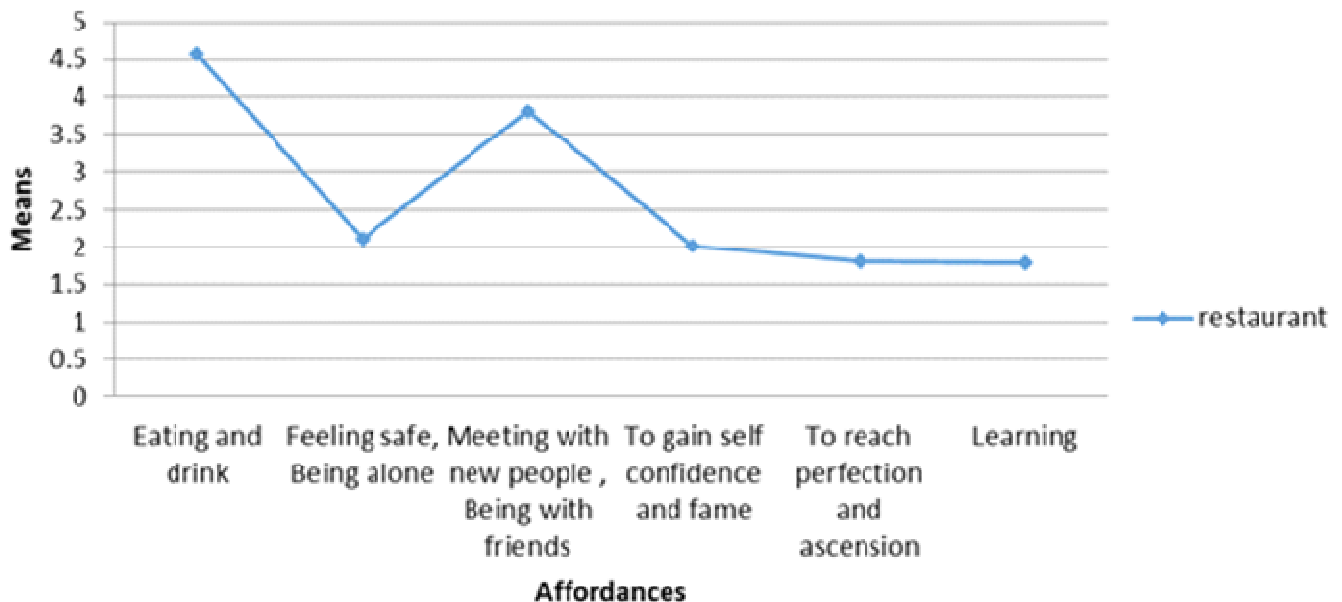
Figure 1. Determination of the affordances for restaurant.

most important activity is social events and spending time with friends. Boys are found to participate in sports and games more than girls. For Caffarella (2002), girls have different methods for growing and learning. Identity for girls is related with establishing relations with others, having close friends and intimacy. Tisdell (2003) suggests
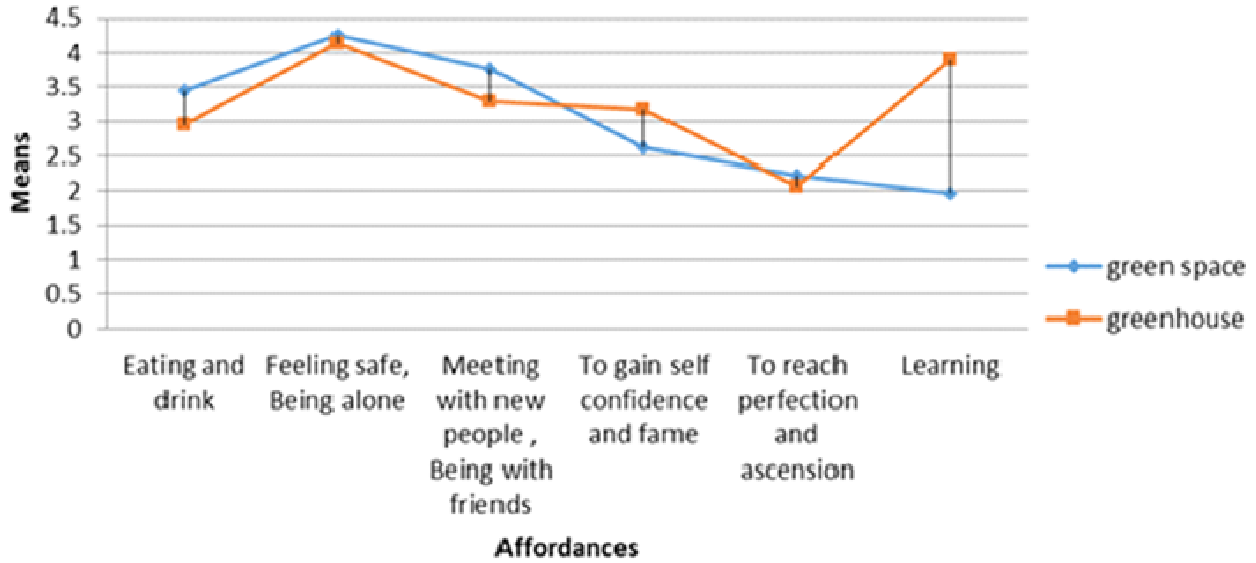
Figure 2. Determination of the affordances for greenhouse and green space.
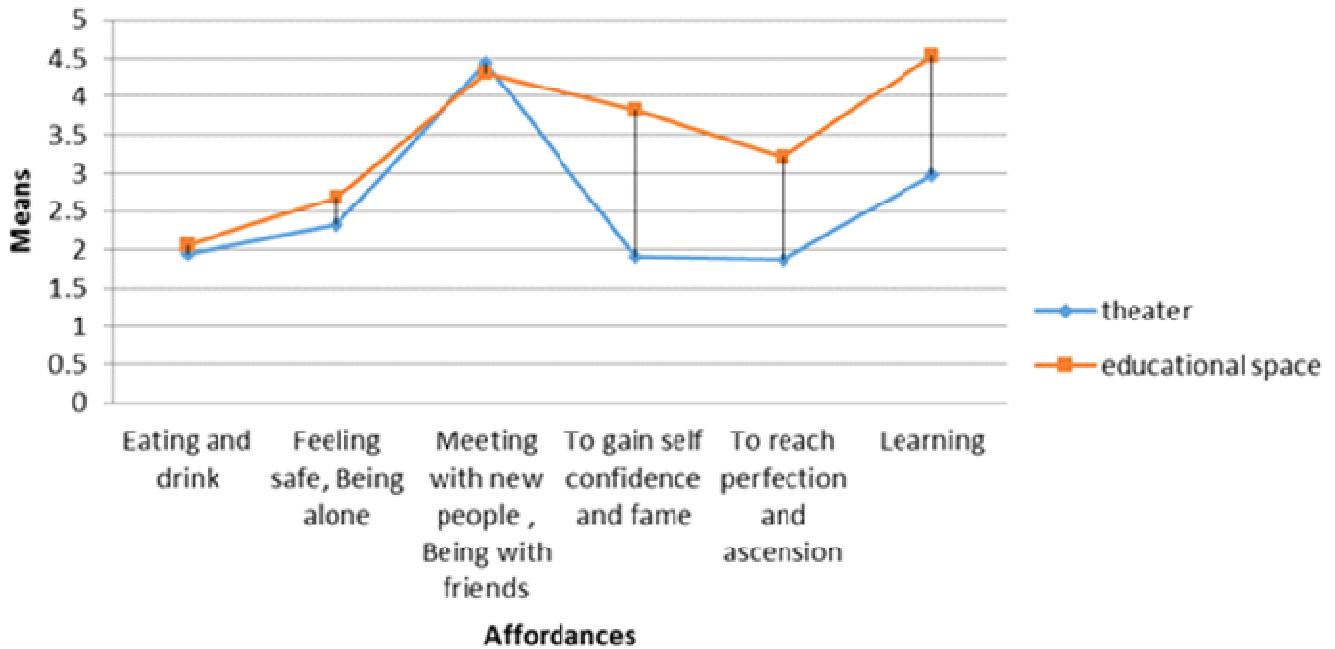

Figure 3. Determination of the affordances for theater and educational space.

that boys socialize particularly for leadership role and adopt an authoritarian style while girls play supporting roles. Duzenli et al. (2010) in their study have shown that girls prefer spending their time with their friends while boys prefer playing sports.

In this study, the needs priorities are investigated based on gender. The results indicated that girls chose belonging needs with the mean of 3.34. while boys chose the esteem needs with the mean of 3.14. The statistics indicated that girls prefer to meet their belonging needs while boys prefer to meet their esteem needs more than other needs. In the study, restaurant, greenhouse, green space with seats, theater, educational space, self improvement and meditation space, debate and discussion space and worship space (the space of wisdom and insight) are introduced to the young people and some of
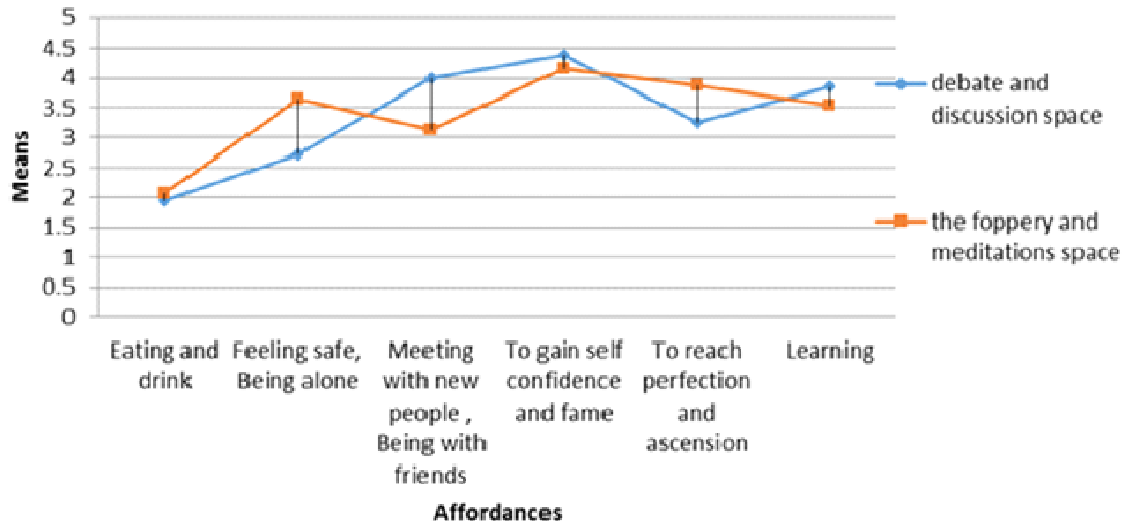
Figure 4. Determination ofthe affordances for debate and discussion space and foppery and meditations space.
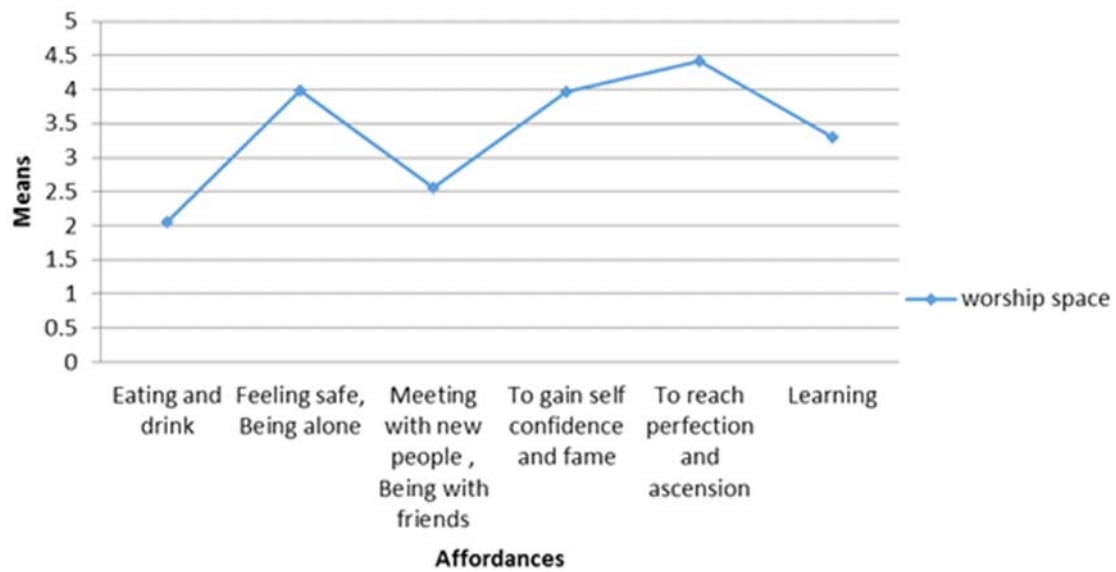

Figure 5. Determination of the affordances for worship space.

environmental affordances must be considered to measure the functional properties of the environments; in a way that introduced affordances are classified to 6 groups according to physiological, safety, belonging, esteem, self- actualization needs and were measured for every environment, it is also determined that there is a significant difference between the affordances chosen for every environment compared to other environments.

The analyses indicated that young people participated in this survey chose (first group) eating and drinking affordances for restaurant with the mean of 4.56. These statistics indicated that this space with (first group) of

eating and drinking affordances support activities which lead to satisfying physiological needs of youth.

Young people scored the affordances of feeling safe and solitude for greenhouse with the mean of 4.14 and green space with seats with the mean of 4.26. Statistics showed that these 2 places with affordances of (second group) feeling safe and being alone support activities that lead to satisfying safety needs of youth.

Young people scored the affordances like being with friends and meeting new friends (third group) for theater with the mean of 4.44 and educational space with the mean of 4.32. Statistics indicated that these 2 places with

affordances of (third group) being with friends and meeting new friends support activities which lead to satisfying belonging needs of youth. The youth chose affordances (forth group) gaining self - confidence and fame for foppery and meditations space with the mean of 4.15 and for debates and discussion space with the mean of 4.37. Statistics indicates that these 2 places with the affordances (forth group) of gaining self - confidence and fame provide activities which lead to satisfying esteem needs of the young people. They also chose affordances (fifth group) of perfection and ascension for worship space (the space of wisdom and insight) with the mean of 4.41. This statistic indicated that this space with affordances (fifth group) of perfection and ascension support activities which lead to satisfying self - actualization needs of youth.

Finally the young people chose affordances (sixth group) of learning with the mean of 4.54 for educational environments. Statistic indicated that this space with affordances (sixth group) like learning provide activities which lead to satisfying cognitive needs of the youth.

Therefore, this research indicated the kind of Abraham Maslow's needs that will be met by every suggested environment to design a center according to their affordances and it is also determined that these environments may meet all of the Maslow's needs. The early stage of research indicated that satisfying belonging needs had priority for the youth and in the second stage, it is determined that theater with affordances (third group) of being with friends and meeting new friends provide activities which lead to satisfying belonging needs of youth. Thus, it can be concluded that theater is the most favorable place for youth in this center.

Space priorities of youth in order to meet their needs based on their gender are as follows:

Girls showed more inclination for meeting their belonging needs rather than other needs. As mentioned before, theater with affordances (third group) being with friends and meeting new friends, provide activities lead to satisfying belonging needs. Therefore, theater is the best place for girls in this center based on their own opinion, and boys showed more tendencies to meet their respect needs rather than others. Self improvement and meditations space and discussion and debate space with affordances of (forth group) gaining self - confidence and fame support activities which lead to satisfying esteem needs of the boys . Thus, these 2 places are the best space in this center for boys.

In this study affordances of every environment were specified by the young people and then it was indicated that which environment meets what kind of youth basic needs and what the best environment is with regard to meeting their needs. This study showed that youth have an inclination for meeting their belonging needs rather than other needs. They like to have social interactions with their friends. These are results which can be useful

while designing an environment for the young people. It is important to evaluate the environment from the perspective of adolescent development. To accelerate this development process and to improve its impact on character development, it is essential that we create spaces with the right characteristics for adolescents to spend their times in.

Conflict of Interests

The authors have not declared any conflict of interests.

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