

A Study on the Quality of Campus Landscape on Students' Attendance at the University Campus

Mojgan Ghorbanzadeh ^{a*}

^a Department of Architecture, Faculty of Art, University of Bojnord, Bojnord, Iran.

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Abstract

Considering the expansion of higher education program in Iran to meet the needs of youth in recent years, there have been many institutes of higher education in closed spaces. This need is balanced now and it is time to highlight the importance of the impact of open spaces on higher education and improving its quality. The purpose of this study is to review landscape designing theories in University of Bojnord and investigating the role of these components in students' attendance in the university environment. The ultimate goal is to extract and prioritize the desirability factors of the open spaces of campus and the students' attendance at the university. -The findings of the extraction have been analyzed based on the access to landscape design patterns. It is conducted by designing a visual questionnaire based on the components of landscape desirability such as understanding, exploration, compatible with the desire for participation and relaxation and enjoyment of the landscape. The questionnaire was given to 55 Students of University of Bojnord. The statistical population was all students of University of Bojnord. The sampling method was random clustering from the faculties of based on their gender and major. The data was stored, analyzed and processed in SPSS software. Data analysis shows the priority of the main factors of the desirability of open spaces on campus. The landscape desirability of Bojnurd University and students' attendance at university is low and it requires a serious review of the architectural design of the university landscape.

Keywords: Landscape Desirability, Campus Desirability, Students' Attendance.

1. Introduction

Open space brings significant meaning to the development of campus universities. These spaces play a major role in creating the special characteristics of campus and should be designed based on the various activities and interactions among campus attendants. Hubbard and Kimball have defined landscape architecture as a delicate art, which the most important function is to create and maintain beauty in the vicinity of the halls, to expand natural landscapes, and provide comfort, relief and hygiene so that students refresh and relax and have access to great landscape. Considering human-social values also play a special role in creating outer spaces and landscape design. Campus landscape design deals with students and academics as much as they are involved with the physical aspects of outdoor spaces. Student participation in designing will familiarize architects with the views and user's tastes [1].

University campus design is considered as an interdisciplinary art between architecture, landscape architecture and urban design. The design of the campus landscape provides appropriate backgrounds for organizing the natural environment on campuses through providing the appropriate design and planning tools and ideas. The main theories of

* Corresponding author: m.ghorbanzadeh@ub.ac.ir

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learning have indicated the tangible impact of open spaces for learning, and in this regard, the campus design is considered as a provider of suitable ground for learning [2].

In recent years, the main goal of creating higher education colleges has been the quantitative development of universities in Iran. In recent years, in order to meet the needs of young people, many institutions of higher education were built in unsuitable closed spaces without any open spaces.

This was in a way that even in the campus of the old universities, Tehran in particular, due to the urgent need, lack of land, lack of standards or attention, constant the levels of open spaces has been reduced, and closed spaces, such as classes and workshops were constructed. Currently, with quantitative expansion of educational sites and spaces in the country, and seeking to balance the supply and demand of undergraduate students, which is evident in recent years in university entrance examinations and university admission capacity; this quantitative need is balanced and it is time to consider the importance of investigating the impact of open spaces on academic sites on improving the quality of education. The lack of attention to scientific issues and theoretical approaches to design in landscape design in general, and in particular is another issue that is considered necessary to address the landscape design of educational spaces. The purpose of this study is to enhance the knowledge of the design of open spaces of campus in a way that improves the teaching-oriented quality of the campus. The campus should be designed, constructed and managed in a way that is aimed for educating. In this regard, paying attention to the decorative aspects of outdoor space and the mere observance of quantitative criteria such as the requirement to maintain 50 % of the land as an open space is not enough and the impact of the characteristics of these spaces on the quality of education should be studied [3]. Therefore, the current study is aimed at exploring the direct and indirect effects of open space on the quality of education.

Considering the assessment of the educational environments most of which are classrooms and other closed spaces, all attention is focused on the inner spaces, and what is neglected is the open spaces that are used to help the goals of these spaces. The campus is not just a place for trees, gardening, development, lighting, parking, or passage and access. These places require their planning and design guidelines. The relationship between the open space and the landscape of the university with the educational buildings needs to be explored and defined. A subject such as the integrated design of college collections, including closed and open spaces, on the one hand, it can lead to a credible landscape design by relying on creativity and art and with the support of a scientific theory, on the other hand it can create a new process and perspective in sustainable design and development of university. In particular, by extracting the three dimensions of landscape design (socio-cultural, ecological and aesthetic aspects), with respect to the physical landscape patterns, a more tangible process can be found in this regard. Since the landscape theory is related to the physical identity of the space (space approach) and the function of space (human approach), the selection of landscape patterns and benchmarking them by the three aspects of the landscape can help us achieve the spatial pattern and human approach. However, in landscape design, paying attention to the human presence as the main element of a landscape, on the one hand, and the quality of educational spaces and physical values of the landscape, on the other hand, are considered to be the fundamental principles of landscape design [4].

2. Literature Review

In the evolution of educational complexes, especially at high levels, there has always been a combination of open spaces with closed spaces. This issue has various definition in both the Iranian scientific complexes and other countries, and it is more difficult to find a place to dismiss this claim. Contemporary universities are not exceptions. The great campuses of Europe and America have proven to be important over the past two centuries. Martin Pearce (2001:14) classifies academic centers in Europe into four periods in terms of architectural organization, in which the components of open spaces are arranged in this period.

- 1) The first generation is universities like Paris, Oxford, Cambridge and Bellagna, which their closed architecture and landscape are all developed within the city. In this generation, the landscape is influenced by the limitations of the closed space architecture, since their development was first considered. The open space is nothing but a space to provide light and distinguish their structure and function from each other; to the point where the construction is ironically called the positive space (architecture), and the negative space (open space). In many universities in this category, such as Cambridge, the identity of the city and the university is intertwined, and urban utilities such as coffee shops and banks are used for educational purposes.
- 2) The second generation of universities also has a gradual growth, as in the first group, and is known as red bricks, which is a used material in their structure, and is usually created in regions of the city, and their differences in the first type are less mixed with urban utilities.
- 3) Unlike two previous generations, the third one is made of universities outside the city and in campuses away from other urban utilities. This formation was due to several factors that the urge of expanding academic places was one of them.

- 4) The fourth generation were new and with universal features and mostly graduate degrees. This type, like the third generation, has no place for growth within urban contexts and inevitably developed outside the cities, and as an independent collection, has met all the needs of the students' life and even professors and employees. In the latter two, the ratio of open space or landscape to the closed space is greater than the first and second type, although this is also the negative space in terms of positive and their view is to the extent of the closed architecture and less to the educational approach. In Edwards's other division, universities are divided into nine groups, in which only the first three groups have perspective on prevailing and defeated maps, and six other groups analyze pure architectural concepts in educational buildings. The first three groups are also slightly adaptable with Pierce category. In general, the study of the role of campus landscapes on the quality of student education is very limited, and similar

Sharghi [3] in a study entitled "The Effect of the landscape architecture quality of the campus on its educational application", published in the BAQ NAZAR Journal, and aimed at revising landscape design theories, in particular ART and comparative study of its components in some campuses in Tehran focused on the environment and landscape of the Shahid Rajaei University in Tehran. The data collection was conducted by observing the students' presence in various perspectives of the Shahid Rajaei University for the study before and after the exams. The accumulation and dispersion of these locations in the map of the university site suggests the situation of landscape design. Sharghi has finally stated that research and development in two areas of science and practice in relation to Gibson's theory of environmental capabilities in academic environments requires more attention and extensive research to enhance environmental capabilities. Therefore, the study of the functioning of the theory on academic sites is one of the suggestions of this research.

In recent decade, many studies have been done on the impact of landscape in practical urban spaces, including parks and campuses, on the quality of human life. Most of these surveys are conducted in European and North American countries [5-7]. Previously, it was mentioned that there is a lack of research on the impact of campus landscapes on the quality of student education in Iran and its reasons. Similar studies are limited in other developing countries, such as the Abu Ghazze research on the campus of Jordan, where the quantitative and dimensional standards were studied, or qualitative features such as plant species were discussed [8]. In a recent study in 2018 by Dalton & et al. University planners should continue to focus on site design that reinforces student learning and environmental sustainability and on community interface planning that supports economic development and reduces environmental impacts. City planners should expand campus district planning to address a broad array of issues and opportunities. Both university and city planners should facilitate collaboration between their institutions [9]. The main driver for campus land use planning is to support a university's principal missions: teaching and—for some institutions—research and service. Both the academic and professional literatures emphasize the importance of the physical campus in teaching and learning, even in the internet era [10-12]. The study of the effects of the landscape on the students' knowledge of psychology have not been discussed or considered seriously. In paradigmatic study of perspective, two theories of Gibson's environmental capabilities and Kaplan's ART were greatly discussed. The current study is based on the development of ART, and seeks to investigate the perspective of the University of Bojnord as the sample.

3. Theoretical Framework

Educational environments can all have an effective role in the behavior of their users: from the impact on their learning to subjects such as sense of belonging, social relations, social communication, accountability, etc. Therefore, paying attention to designing educational places can play a very important role in enhancing or inhibiting a community.

Based on the environmental psychology and the Gifford's theories, man is always exposed to interaction with his surroundings. Social behavior cannot occur in vague and "not merely related to an individual but also to how it interacts with the surrounding environment." [13] Psychologists believe that "psychological phenomena and their interpretations are the result of the interaction between human organism and the environment. Students' teaching and training is not only influenced by the teacher's words; but several factors, including the educational environment that plays a role in conveying the message, and have significant effects on their learning outcomes. Therefore, "any research on the students' performance and learning, regardless of the educational environment in which it occurs, is incomplete and inefficient." [14] According to Morong, "the process of outdoor education is much easier and easier than closed space, it causes curiosity and motivation in students' creativity and their learning. Thus, the direct relationship between educational open space and student learning can be realized.

John Lang, a researcher of environmental planning and design, emphasizes that not considering the user needs of space, can cause a lot of physiological and psychological damage to them. The research is trying to find an effective way to design open spaces for educational sites, which will improve the teaching-oriented quality of open environments. Educational sites should be designed, implemented and managed in a way that be applied to its main purpose which is education. Factors such as the correct definition of open space, as well as the sense of belonging or sense of place among students toward these spaces, make the presence of students in these spaces more vibrant and lead to a permanent

presence of students. Easy access and factors inviting to these spaces (spatial appeal), appropriate visibility and landscape, which is one of the positive attributes of academic sites, is part of the efficiency of this space. Factors such as the sense of experience within open spaces, the presence of cozy spaces, the penetration of students into these spaces and mobility in the green paths, the participation of students in the expansion and maintenance of green spaces are other factors that contribute to the proper use of space and makes it suitable for students' long-term needs [4]. In educational spaces, architectural quality can play a role in educational function by influencing sensory, intellectual and perceptual cognition. Studies show that the process of training in interaction with open space, due to gathering spaces, the possibility of teamwork training and more student participation, flexibility and the possibility of expanding space can greatly affect the learning euphoria [3]. A university campus is not a city, a neighborhood, or a block. Therefore, describing and analyzing campus forms should be different. The missions, objectives, and governance of institutions of higher learning are not comparable to those of neighborhoods or cities. One of the most obvious distinctions between a campus and a neighborhood is in its primary purpose of providing a supportive environment for learning [15].

EDUCAUSE, the Society for College and University Planning (SCUP), and the PKAL Learning Spaces Collaboratory have aimed to identify assessment metrics, predictive evidence, and illustrative cases that relate space to learning. Among the common insights that have emerged from these efforts are the realizations that experiential learning enhances student engagement and engaging study behaviors fosters learning [16]. However, these works focus more on classrooms and teaching environments (micro-scale design) and less on the contextual condition of the campus environment (macro-scale design). Yet, some studies show that certain macro-scale campus qualities can have impact on students' quality of life and academic performance as well. For example, studies have indicated that the presence of green spaces on campus, along with the perception of greenness and restorative environment of a campus are associated with student quality of life [17].

According to the information above, it is deduced that the characteristics of university landscape utility are different from other landscapes. Therefore, the present study seeks to assess the quality of academic landscape from the perspective of its users.

4. Studying Samples of Foreign Campus

An evaluation study about after settlement of students of two universities of the two universities of University of the Dokuz Eylül Technical University [8]. The results indicate that the campus evaluation of students is different, while a university campus has a negative rating from evaluating campus's internal accessibility, safety, quality, aesthetics inside and outside campus, flooring, walking paths and landscape design. While the campus has a moderate and slightly higher score in the categories mentioned. Students tend to criticize their campus in terms of poor access, poor campus location, and social gatherings and social interactions. Most participants gave their opinions on outdoor environmental qualities, most places built to provide social facilities have provided better access to the campus and inside the campus. When student behavior was compared in two universities, it was observed that in campus with negative evaluation students were less willing to spend their time on campus for recreational and social activities than the university with positive evaluation of the campus. Appropriate and adequate access to community groups and educational facilities is provided through the creation of pleasant and convenient routes. These paths can help students walk to reach the transportation system. As Abu Ghazze stated, the outer space on the campus should not be regarded as an empty space between buildings and should be considered by designers. Therefore, research on educational environments shows that environmental variables can indirectly affect the learner.



Figure 1. Karadeniz Technical University



Figure 2. University of Dokuz Eylül

5. Educational Campuses and Attention Restoration Theory

The landscape of a campus provides the viewer with two physical and visual functions. The physical function is associated with components such as access between the closed architectural spaces, commuting, and a place for making a conversation and studying on a bench, grass, and similar topics in applied architecture is not first priority because the main application is something else. But visual and perceptual functions rely on what is being created in the viewer's memory. The events that penetrate the mind of the viewer when viewing the landscape and in its context create a perception of the environment and the landscape, which today is the basis of many landscape architectural research [3]. In this framework, the theory related to this branch of landscape architecture is referred by a training-based approach. In mental restoration theory, emphasis on environmental factors is the basis for describing and expanding this research.

Based on the Rachel and Stephen Kaplan study, who presented the Attention Restoration Theory (ART), [7] and [6], constant focus and attention, such as studying and working behind a table, exacerbates the mind and fades or disperses mental concentration; increasing the mental error, resulting in spasms, distraction, tension, boredom and reducing efficiency, [5]. This tiredness of mind can be reconstructed and improved with the help of natural environments, parks and gardens. The ART of Kaplan's is an appropriate application pattern for reducing stress and anxiety in urban environments and away from nature. The views of this theory have been refined in this section, and attempts have been made to emphasize the universality of the theory and to emphasize its adaptation to the landscape architecture of the campus. In this framework, the campus of University of Bojnord is selected as the case study.

5.1. Attention Restoration Indicators

The attention-restoring indicators were experienced in research on non-residential land for the first time [7]. There are a lot of activities and situations that can create opportunities for mental improvement from mental fatigue. Surprisingly, the natural environment alone and easily provides plenty of places and activities to rebuild tired minds, and individuals' experiences have common indicators in this area, although they may vary. These indicators have physical and psychological aspects which may sound interesting. These indicators are: being away, expansion, attractiveness and adaptability.

- 1) The first component of this theory is being away, liberation, expansion, or escaping the mind from the place or position that causes the fatigue of the mind. Therefore, the creation of a landscape is effective in solving student tiredness as an emancipatory capability. According to this component, there is no need for the student to have a physical presence in the landscape to feel better, but even a pause with a view from the perspective of the window of the class or library can make the mind emancipated and expand. A pause and simple look at the nature and surrounding landscape gives students a desirable imagination and let them feel being in nature.
- 2) The opening, breadth, or extent is one aspect of the landscape in this theory. The limited landscape is a view that the beginning and ending can be seen with the eyes; a green path that defines the distance between two buildings or the passage of the building. At least the bulk or opening in the perspective should be such that it creates a deliberate interruption in mind to engage the subject mind and in the architecture of the previous use, and will not immediately be occupied by another subject. The degree of distraction from the state of affairs and, as a result, the exhaustion of it, has a direct relation to the degree of opening or extent of vision. It is not only the size of the latitude and the width of the criterion in establishing the opening, but the number, types and dimensions of the elements of the landscape and how they are arranged, plant species such as lawns, shrubs, bushes and trees, the ground form in terms of texture and slope, is also important.
- 3) The attraction or landscape mania is another component. A fascinating landscape is a desirable landscape, and not all the landscapes meet this requirement. Relaxation of the tired mind and opening up in the landscape is not enough to restore attention without creating surprising attraction for the viewer. The fascination of the landscape appears in its elements and combinations, and it brings to mind and amazement. Some examples are: watching the slipping and falling of the colorful leaves of autumn trees, hearing and seeing the sound and motion of the birds on the branches, water and light, along with their color change in days and four seasons. The use of statues and volumes in the natural landscape, all of the charisma of the mind-loving landscape is easily spread around and within the closed architectural spaces.
- 4) The next component in this theory is an adaptation to environmental conditions. This nature can be abundantly seen in natural elements, while it is less common in industrial life and being away from nature. The use of elements in industrial life, especially in the big cities, is constantly tense and dual, which soon enough makes the mind tired and exhausted. The use of the car as a convenience vehicle along with traffic, the sound and polluted air resulting from it is an example of this type, while the scrolling of a winding path in a forest or on a hill may bore the body very soon, but the spirit and mind does not get tired. The compatibility referred to in this theory corresponds to the adaptability of the human mind with a landscape to understand better its dual conditions, and the adaptation of natural elements to environmental conditions is not considered [7]. This research is about academic landscape

architecture as well as students. In this research, it is considered that a university perspective can, with their help, expand the welfare of the academic community and increase the ability of students to perform well in their work effectively. The main objective of the review of the design and management of the landscape architecture of the University of Bojnord in a way that is in the interest of students, their presence in the campus and their enthusiasm for education encourages them and to the extent possible their support. Throughout this research, the main emphasis of the debate was on the interaction between the landscape of the university and the students.

6. Features of Restoration Environments

The number of researches and scientific findings about the restoration environment and its fatigue are growing. The findings are sometimes surprising. When people return from a trip to natural environments, perform better in their activities than the control group. Recent scientific experience has shown that these people are more successful in doing things that needs more focus. Semprich in his research confirmed that students of dormitories with natural landscapes had better perform their duties and homework [18].

The restoration environment is an environment that is desirable and according to the Kaplan study is subject to the following conditions:

- It has the ability to understand and comprehend.
- It is discoverable.
- It is relaxing and enjoyable.
- It provides the possibility of public participation.
- It is compatible with human desires.

The desirability of an environment is possible with the aforementioned five factors. On the other hand, according to these factors, the indicators of the ART are; distant, wide, attractive, and adaptive. The relationship between the ART indicators and the environment's desirability conditions is defined by considering these five indicators in landscape design, the environment for their users who are the university students who are understandable and discoverable at first, then they are relaxing and enjoyable and in accordance with human desires. If the possibility of public participation is considered in the decision-making process, it will eventually bring the environment to its audience, which, according to theoretical foundations of research, will lead to human presence in the environment, and this attendance restore the mind and create educational motivation in student.

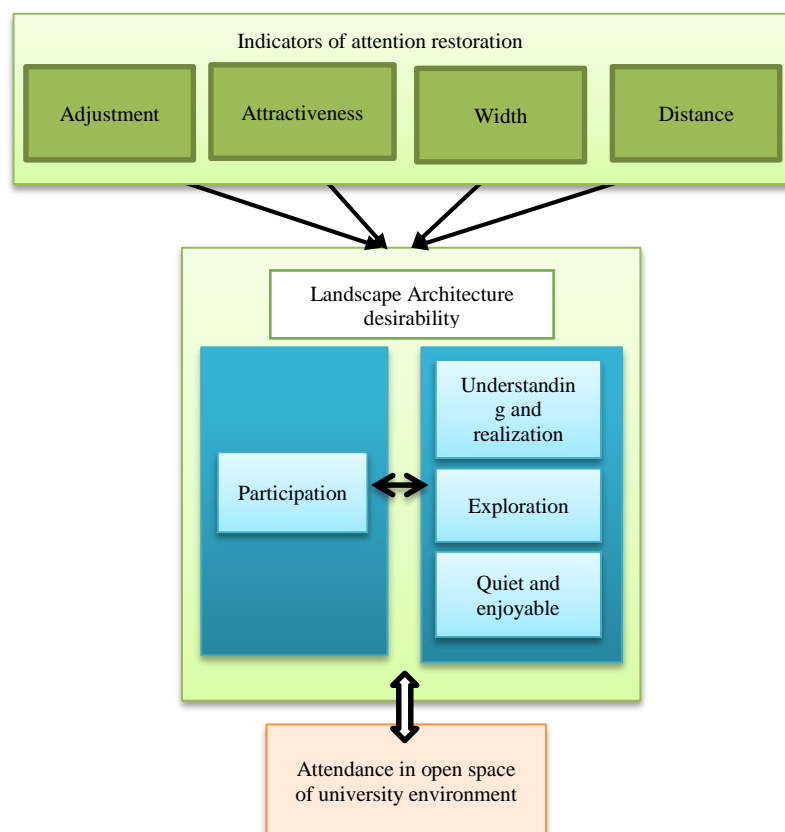


Figure 3. Conceptual Model of attendance of attention Indicators and Landscape desirability

Figure 3 illustrates a two-way correlation between the desirability of the landscape architecture and attendance in open space of university environment, while it is shown in this model that the conditions for achieving desirable landscape factors are utilizing the indicators of attention restoration. In this model, the desirability of landscape architectures as shown in the theoretical foundations of the research has been shown with four factors of understanding, exploration, being enjoyable and environment participation. Finally the indicators of attention restoration are also adjustment, attractiveness, width and distance.

Studies show that the process of training in interaction with open space, due to gathering spaces, the possibility of teamwork training and more student participation, flexibility and the possibility of expansion of space can greatly affect the learning motivation. This means that students' attention that has a direct relationship with the landscape quality at the university will increase the student's academic motivation. Based on the relationship between the mind-altering indicators and the environment's desirability conditions, Kaplan's research has introduced patterns for realization of these conditions, which will continue to introduce the subset patterns of each desirability factors. In fact, it can be said that if these patterns are realized in landscape design, one can achieve an optimal landscape that is attention restoration.

7. Survey

University of Bojnord was founded in October 2005 as the biggest institution of higher education in North Khorasan province, Iran. It starts with 210 students in three majors in Bojnord, capital of Khorasan province, in order to fulfill its mission of receiving, educating and educating the younger generation in higher education according to the act of the Ministry of Science, Research and Technology. In the academic year 2015-16, Bojnurd University had 41 majors (15 majors in post-graduate study and 26 undergraduate), there are about 3,500 students, 120 faculty members and 82 full-time staff. Now University of Bojnord is located at the kilometer 4 of Bojnord - Esfarayn road [19].

8. Research Hypotheses

This study reviews the features of ART from the book "Landscape design and management in the surrounding nature". These indicators, according to the concept of ART, in the design and management of the landscape are as following: the first indicator: being distant, emancipating, expanding, or escaping the mind from the location or situation that causes the fatigue. . Second indicator: opening, width or landscape size. Third Indicator: charm or landscape mania. The fourth indicator: adaptation to environmental conditions, which in this research are defined as indicators of academic universality desirability that provides a perspective with recognizable attributes, can be discovered and it is relaxing and enjoyable. In addition, the participation of landscape users helps its desirability. According to Kaplan's research, some patterns are defined for each of these four landscape attributes (understanding, exploration, relaxing

9. Data Analysis Method

The data collection method in this study, is library and field studies. After determining the indices and variables of the research, a questionnaire was designed and its validity and reliability were determined by Cronbach's alpha method. The sample of this study is University of Bojnord with a total area of 56 hectares and the statistical population of this study is University of Bojnord students, which has about 3,500 undergraduate and postgraduate students. A questionnaire was prepared to collect the required data and measure the desirability of the landscape architecture and its impact on students' attendance at University of Bojnord. The statistical population of the study was all the students. A 5-degree Likert spectrum was used in this questionnaire, ranging from; I fully agree with the (+5) to the totally disagree (+1). The researcher-made questionnaire was compiled by a questionnaire on the desirability of open spaces in the academic environment [20] and the patterns of landscape utility of the book "Design and management of nature" were prepared. after reviewing and applying the views of professors and experts, it questionnaire was used for students. The questionnaire is based on five components and 32 items of understanding, exploration, humane adjustment, relaxation and enjoyment, and valuable participation. The component of understanding and recognition had 3 items, the exploration 4 items, human desires 8 items, the relaxation 11 items and valuable participation 6 items.

Cluster random sampling method was used. The components identified in the research are determined as desirable landscape components (understanding, exploration, adaptation to human desires, relaxing and enjoyable, and valuable participation). In statistical analysis, this research seeks to identify the priorities of each of these components in the desirability of the landscape and, consequently, the student's academic motivation. In addition, the desirability of the University of Bojnord landscape and the willingness of students to attend the university are examined. Finally, the results of the research are first presented in the form of quantitative tables, then in the form of qualitative table and landscape architectural design solutions. The Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. At 0.86, the reliability coefficient of the whole questionnaire was estimated to be a sign of high reliability of the tool used and the reliability was based on sufficient samples based on the normal distribution model. SPSS software was used for analyzing the data in two levels of descriptive and inferential statistics. At the descriptive statistics

level, Pearson correlation coefficient and Mann-Whitney U test was used for distribution of frequency, percentage, mean and inferential statistics.

10. Research Findings

According to the theoretical discussions of the second chapter of this study, in addition to the result Nowroozi et al. research "The Relationship between the university environments with students' educational motivation", there is a relationship between the academic atmosphere and the academic motivation of the students. Also in Sharghi research [3] "The effect of the quality of landscape architecture of campus on its educational application," the academic quality of the campus has positively impacted on the student's educational use and led to the students' attendance in open space for studying, especially during the exams. Therefore, considering the significant role of the attendance factor, Figure 3, as a result of behavior and external representation of motivation process, we can conclude that, by examining the students' attendance at the university, the level of academic motivation of the university's landscape on the student is determined. In fact it can be said that the landscape architecture of the university provides a degree of quality or poor quality of students' attendance in an open space. As a result, all educational environments can have an effective role in the user's behavioral data: ranging from the impact on their learning to subjects such as sense of belonging, communicative relationships, social communication, accountability, etc. Therefore, paying attention to designing learning environments can have a very important role in enhancing or inhibiting a community. By considering this fact, the research findings will address the research questions and responding method.

10.1. Statistical Analyses

The sampling method of the study was a cluster random sampling and the sample size was 55 considering the assumption of normal variables. Due to the same proportion of gender variables, 30 of them are female and 25 were male, of which 26 are students of the arts (art school) and 29 students of other majors. In addition, 13 students were selected from freshman and 42 students of other levels. The statistical analysis of each of the variables of age and gender and academic year should also be considered separately. The reliability and validity of the questionnaire were used to determine the reliability of the questionnaire using Cronbach's alpha, and should be above 0.7. In this analysis, the Cronbach's alpha value was 0.86, indicating that the research reliability is acceptable. Considering the fact that the questionnaire is based on the experts' opinion and reviewed theoretical knowledge in the chapter, the research validity is acceptable.

10.1.1. Analysis of the Desirability and Landscape Attendance of University of Bojnord

Another analysis of the statistical sample is based on University of Bojnord's landscape and students' willingness to attend the University of Bojnord's landscape. SPSS analysis showed that the average of the two variables of desirability and attendance is low, which is 2.45 and 2.62, respectively, of the 5-degree Likert scale (totally agree, and strongly disagree). In addition, the observed Pearson correlation coefficient of 0.85 reflects the correlation with the positive and direct relation (0.000) between the desirable and landscape attendance.

The low mean of the two variables, desirability and landscape attendance, indicates that the university's landscape is not desirable, which, according to Pearson coefficient, it has a direct and significant relationship with the willingness to students' attendance.

10.1.2. Statistical Analysis of Landscape Desirability of University of Bojnord

Here the landscape desirability components are studied and the Table 1 shows the degree of students' agreement with these components as effective components of landscape desirability. Table 1 results shows the high agreement of students with the components of the landscape desirability as effective factors of academic motivation. This means that one of the conditions of the desirability of the university's landscape is through the establishment of five aspects of the landscape desirability. Concerning the gender of individuals and the mean of the responses of the variables of each of the landscape desirability components, it can be concluded that there is no meaningful relationship between gender and the variables of the landscape desirability. It means that gender does not affect the landscape desirability components. And the responses of both male and female sex groups represent a degree of importance of landscape design variables.

Table 1. Students' agreement and disagreement with effective factors of landscape desirability

Landscape desirability components	Sum of item's score	Sum of agreement answers with desirability	Agreement percent	Sum of disagreement answers with desirability	Disagreement percent
Understanding and realization pattern	165	147	89%	18	11%
Relaxation and enjoyable pattern	495	395	79.8%	100	20.2%
Exploration pattern	165	128	77.6%	37	22.4%
Adjustment with human desire pattern	275	221	80.4%	54	19.6%
Participation pattern	55	43	81.8%	12	18.2%

10.1.3. Prioritizing the Role of Each Factors of Landscape Desirability

The mean of that component is calculated and compared with other averages of the same component to determine the priority of the role of each of the variables (items) in each component of the landscape. According to that, if the average of one variable is higher, it is indicating the importance of that factor comparing to other factors in the desirability of a landscape in a particular component. Considering the explanation in Figure 4, which relates to the variables of the component of understanding and realization, we can see that the effect of spatial arrangement on the landscape desirability has a greater impact on the other variables. The design of landscape architecture can be considered as one of the main design features for achieving more general spatial alignment. This will lead to greater community participation and greater attendance in open spaces and will ultimately help to increase the student's academic motivation.



Figure 4. Prioritizing the understanding and realization components based on the mean of data

Considering other variables, in Figure 5 it can be seen that “entrance gate variable” has the highest positive answer and it means that “entrance gate variable” has the most significance compared to other components of landscape exploration.

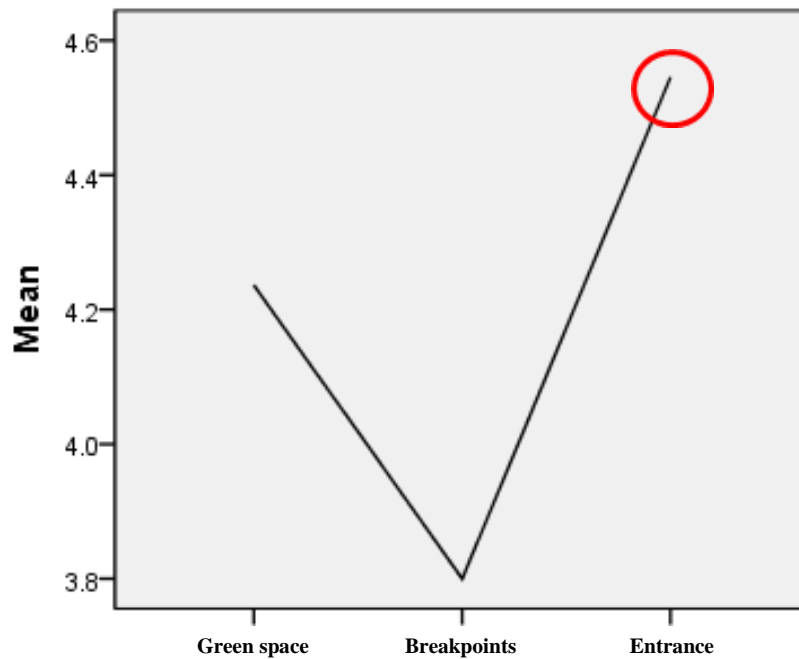


Figure 5. Prioritizing the components of landscape exploration based on the mean of data

View from window." This means that the variables listed in the component of relaxation and enjoyment are of the highest importance to other components. Analyzing the components of the relaxation and the enjoyment of the landscape, in Figure 6, shows that the "water and plant adjacency" variable has the highest positive response, and then "using happy colors", "climate comfort", and "the

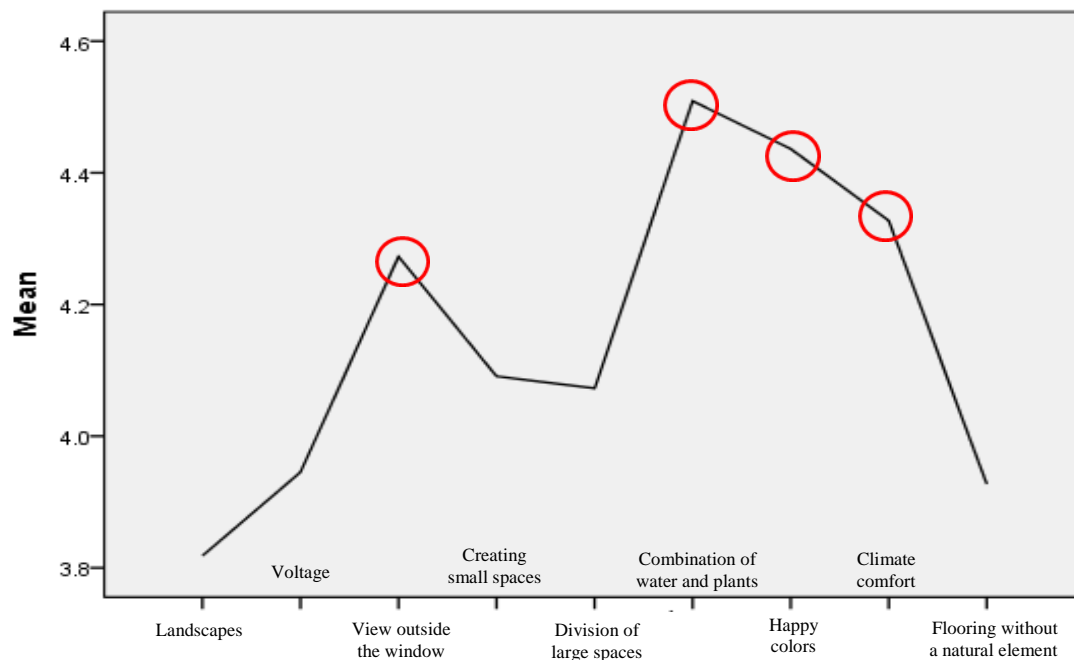


Figure 6. Prioritizing the components of landscape exploration based on the mean of data

Analyzing the components of the relaxation and the enjoyment of the landscape, Figure 7, shows that the "natural and movable furniture" variable has the highest positive response

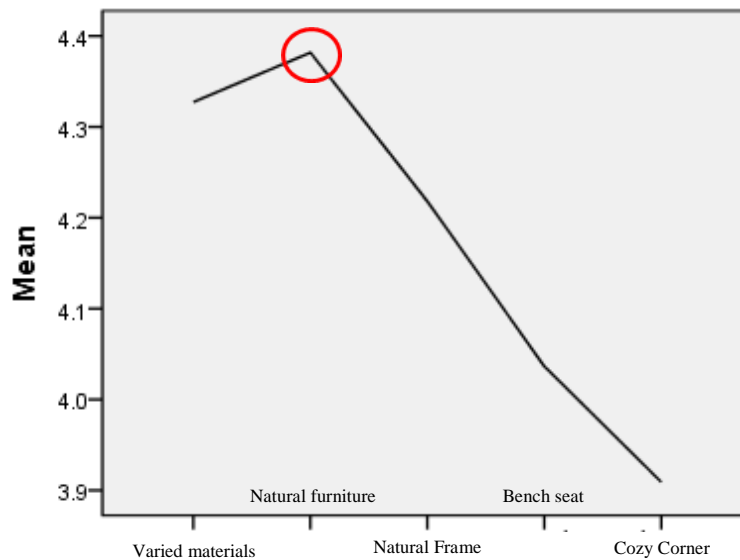


Figure 7. Prioritizing the components of adjustment with human desires based on the mean of data

11. Practical Solutions of University Landscape Design

This research shows that there are ways in the design of a university landscape that will enhance learning in open spaces of university and increase academic motivation through interaction with the university's landscape. These are presented in Table 2.

Table 2. Practical solutions of university landscape design to enhance academic motivation

Using natural materials, along with the way to round setting in open space, is useful in gatherings and landscape socialization.
Designing prominent signs and elements of academic indexes in accordance with educational concepts for creating spatial identity and enhancing the sense of belonging in environment routing.
Considering the proper design and location of the university entrance.
Establishing stopping points and spaces for sitting along walking paths
Creating enclosed spaces next to vast spaces to help creating a variety of activities.
Creating appropriate views across the classroom's window and closed spaces to satisfy the fatigue and viewer satisfaction.
Creating small and enclosed spaces alongside spacious spaces to enhance the peace and enjoyment of the environment.
Creating an inviting sense and environmental attractiveness by creating level differences with elements such as stairs and ramps in space.
Using vegetative coatings adjacent to the water for relaxation and mental comfort.
Creating climate relaxation and expanding outdoor educational motivation by creating pavilions and shadows.
Use natural and happy colors to create visual appeal and enhance the environment inviting.
Designing open spaces using natural elements of the landscape (trees and plants).
Designing the couches in appropriate shady and space-free places.
Dividing large spaces and turning them into smaller spaces to create an ecological attraction and sense of belonging.
Consultation with students and staff to design and review the university's landscape and use their ideas in designing by using visual and understandable questionnaire.

12. Conclusion

Nowadays, academic places are filled with books and websites full of information and students are constantly faced with them, thus mental fatigue is inevitable. Continued focus on the study behind the desk will make the mind tired, which is leading to distraction, boredom, mental impairment and reducing performance, but as the research parameters show about University of Bojnord campus, the mental fatigue can be improved by the deliberate arrangement of landscape elements in universities' campus. In this study, University of Bojnord campus was analyzed according to

components of landscape desirability in term of ART in a natural environment. The desirability components were categorized into five groups of realization and understanding, exploration, relaxation and landscape enjoyment, adjustment with human desires and valuable participation. According to the research findings, students' mental and intellectual evaluation can be based on visual imagery measurements through a visual or vista visual questionnaire from the perspective of academic campuses. By analyzing the visual questionnaire it can be concluded that the landscape desirability of the university through an appropriate design, architecture based on scientific findings lead to the creation of spaces for student satisfaction is way that with the attention restoration ultimately increase the motivation of students on campus. Another finding is that the landscape architecture of the University of Bojnord has already made students reluctant to attend in open space due to lack of desirable perspective components. Proper designing of campus landscape can increase students' willingness to attend on campus, which leads to their academic motivation. Finally, it is recommended that academic campus in academic and practical terms, need more attention and extensive researches in term of physiological and environmental aspects.

13. Conflicts of Interest

The authors declare no conflict of interest.

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