The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73

61

The Effect of Academic Environments' Quality on Improvement of Participation in Learning Process; Case Study: University of Bojnord

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ABSTRACT

Universities are physical environments and social environments that influence attitudes, behaviors, and scientific interactions between professors and students, as well as the relationship between university management, the academic community, and learning participation. Meanwhile, consideration of factors affecting learning participation can play a vital role in the utility and desirability of these spaces. Regarding the significance of environment quality, the extant study examined dimensions of the environment quality concept (independent variable), determined its indicators, and examined its role in learning participation (dependent variable). In other words, the present research aimed to improve participation in learning using factors of environmental quality in the University of Bojnord. The research method was descriptive and analytical. Bibliographic tools and questionnaires were employed to gather data. This was applied research in terms of objective. The statistical population comprised students of the University of Bojnord, and samples were selected using a random sampling method. Data analysis was done through SPSS software, Spearman and Pearson correlation tests, and the eta-squared test. Accordingly, 58 items were assessed under the six indicators. In summary, research results indicated that vitality, efficiency, justice (equality), and fit (alignment) were the most important physical factors affecting participation in the learning process on the university campus.

Keywords: University of Bojnord, Educational Environment, Participation in Learning Process, Quality of Environment.

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1. INTRODUCTION

University campuses must provide characteristics of an ideal collective to create more relationships between students, professors, and other associations (Edwards, 2007). Some assume that the learning environment must facilitate non-static activities and comprise required motives since physical and mental mobility and social morale development are core needs of the modern educational system. In other words, the new learning technique is connected to continual interactions between humans and natural resources, so it must be participatory (also known as cooperative and collaborative) (Greeno, 1998). In recent years, higher education campuses have been created in Iran regarding a substantial purpose of quantitative development of higher education institutions to meet young people's needs inclusively. However, this quantitative need for educational spaces has been somewhat fulfilled now. Therefore, new and high-quality campuses must be considered for education-centered activities in the university. One of the core objectives and missions of universities is enhancing academic ideals through education and research; hence, universities are responsible for encouraging learning and research morale among beneficiaries. Participation in the learning process and permanent interactions between people shape the base of the educational system. Accordingly, some scholars believe that new approaches require students' movement, teamwork, and dynamism. Hence, the definition of needs and organizing an environment where such learning is realized are necessary actions.

University is a social environment whose role becomes highlighted if the university is closer to the city. Hence, university campuses must share characteristics of an ideal collective space (spaces for collective life, entertainment, pleasure, and invitational) to make more relationships between students, professors, and other associations and learn participation (Gharavi Alkhansari, 2008).

The research procedure shows how the quality of the university environment can affect participation in the learning process; in other words, this study aims to find how spatial qualities of the university can contribute to higher participation in the learning process. In this case, the necessity of participation in and attention to educational space is determined after reviewing the background, then research questions and hypotheses are formulated. A suitable research method and structure are found in the next step then data analysis and conclusion are done. The extant study was conducted to examine environment quality (of the University of Bojnord) in the frame of some criteria, including efficiency, sense, vitality, monitoring and authority, access and fit (as independent variables), and components of cooperative learning (as dependent variable) assessing their effects on each other.

2. LITERATURE REVIEW

Qualitative evaluation of the central campus of Tehran University's Fine Art Faculty and identification of its strengths and weaknesses is an Iranian sample of studies that have been conducted on Iranian universities by Gharavi Alkhansari (2008). To derive evaluation criteria, the mentioned study used theories related to university sites and the idea of "university as a city" by comparing similarities between university sites, urban spaces, and cities.

Health-oriented schools have been created in practical action for participation in learning and its impact on the environment. This project that was started in cooperation with the Ministry of Education and Health and Health Promotion Agency in the field of creating health-oriented schools in the UK, pursued some goals:

1. Rising pupil's success in the school environment;
2. Promoting social cohesion between pupils in the school;
3. Reducing unsound and low-quality factors in the environment.

In general, this project strived to make the process of participation and the environment safe allowing them to be involved in the environment. Overall, 137 children and teachers were from health schools, 76 were from primary school, and 61 were from secondary school that participated in the research process. Pupils were asked in this project to work to 1. be healthy, 2. stay safe, 3. have economic wellbeing, 4. enjoy and achieve their goals. The concept of participation is based on three bases in such schools: 1. activity and cooperation (interaction between students in the environment: generating possible satisfying outputs in specific time between individuals), 2. exploration (suggestion, exploratory idea, problem-solving), 3. challenging and exciting environment (Blake, 2005).

The program of health-oriented schools has been designed to move from traditional pedagogy approaches towards health-based and health-promoting educations that have a social base. The health21 plan introduced by the World Health organization has moved towards some concepts in the contemporary era, including health for all people, health as a basic human right, equality in health, and participation of individuals, groups, and organizations in the health process. This organization has recently addressed a key strategy comprising health for all people (public health) from school to the workplace.

According to WHO, health school is where learning, work, and life are done healthily. The environmental health-oriented schools have been generally defined with work-life interconnection potentials. The general principles and policies of planning and design of such schools are as follows: 1. opportunities and capabilities for pupils' fostering, 2. environment' attention to pupil's practice and experience, 3. the environment must be proper for activity (Jensen et al., 2008).

The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73

63

A study was conducted in Malaysia through interviews and observation from 85 18-19 years old students of two university classes whose data were collected through one academic year. Student participation patterns in the class include student involvement in classroom activities, such as reading, writing, and listening. Some specific factors, including age, gender, and students' willingness to talk, student preparation, and emotions of students (like fear and confidence), are significant personal factors, and environmental factors, such as classroom size and so on are substantial factors for students' participation in the learning process. Study results indicate that users introduced some factors affecting learning: individual variables, involvement in classroom activities, relationship with nature, security, convenience, small (including 30 students or fewer) and cheerful classrooms, low density of students in the classroom and low noise, desired ventilation, and environmental quality (Siti Maziha & Suryani, 2010).

Some studies have been conducted on the impact of environmental quality on participation in the learning process regarding pedagogical psychology and architecture, while a few studies are in architecture scope, so the extant study expands the innovative domain of this field. The most important studies have been reported in Table 1.

Table 1. Studies Conducted on the Effect of Environment on Learning Participation

Reference	Research Area	Important Subjects
(Lahlou, 2009)	Architecture	Participatory spaces' patterns include healthy and recreational places, events places, circulation spaces, service places, personal and public meetings' places, spaces, and places to do practical projects and activities
(Miller, 2010)	Architecture	Environmental competence is one crucial factor of participation in environmental activities, including learning. Following factors are necessary to provide environmental competence for children and adolescents: suitable space scale for control and monitoring; the presence of complex (challenging) opportunities regarding appropriate aesthetics in the environment; providing an opportunity for exploration through green and free spaces; paving the way for privacy and restoration; accessibility to public places; encouraging child's independence in the accessible sites; maintainability; control over the environment.
(Siti Maziha & Suryani, 2010)	Educational psychology	Factors affecting learning: individual variables, involvement in classroom activities, interaction with nature, security, convenience, small (including 30 students or fewer) and cheerful classrooms, low noise, desired ventilation, and quality
(Cleveland, 2011)	Architecture	Cleveland studied the effect of learning environments on participation in the learning process and introduced some important factors for engagement in learning and involvement in learning activity: freedom of movement in the environment; accessibility to a variety of spaces; providing students creative learning environments; free spatial choice for students; flexibility and its effect on the child; the strong relationship between spaces and their accessibility; physical and mental comfort of the student.
(Reich Shapiro, 2014)	Educational psychology	In the opinion of Shapiro, some factors must be considered for more participation of students in classroom space: the sense of community; security; technology application in classroom space; ownership and authenticity in classroom space; accessibility in the space; flexibility; the presence of space for the empowerment of children's personal space.
(Wolff, 2002)	Educational psychology	Wolff introduces the most significant concepts for participation in the learning process: creating a relationship between people and spaces, and between individuals (social relationships between people); observability of spaces for users; thinkable spaces; supporting social networks; using technology; creating the group and collective spaces; strengthening and supporting the environment and communications (creating capabilities in spaces to make the student have a sense of belonging and ownership); psychological and physiological supports.
(Weber-Bezich, 2014)	Educational psychology	In his Ph.D. dissertation entitled classroom design and student engagement in the learning process, Bezich believes that, unlike contemporary classrooms, traditional classrooms do not have the required flexibility for students' engagement in the learning process. This study indicated that in classrooms that allow group activity and discussion present, more flexibility for a variety of activities is seen providing student participation.

3. FUNDAMENTAL CONCEPTS

Theoretical foundations of the studied topic have been examined under the titles "participation in the learning process" and "quality of the environment."

3.1. Participation and Learning Process

Learning and information acquisition are prominent characteristics of human beings. Such searching morale has always been a stimulator that encourages people to acquire and produce knowledge from the beginning of creation. However, cultural-social features and philosophical schools have influenced relevant dimensions and approaches. Regarding God's order for thinking of and reflecting on the world's creation, humans must learn to see, listen, think well and discover creation secrets (Shariatmadari, 1983). Participatory or cooperative learning is one of the learning types. The level of students' participation in learning is the strongest index of education quality and active learning. Active participation is an essential factor for learning (Norouzi & Nasrabadi, 2005). Participation in the learning process is a process that prepares the learner for new needs and expectations of learning by understanding, developing, and applying learner-related projects and collective needs (Wolff, 2001).

Nasrabadi and Norouzi (2005) conducted a study entitled "Impact of participatory learning on academic and social growth of learners" to study and examine various factors, advantages, and specifications of participation in the learning process. They explained: 1. students are responsible and perform to achieve group goals, 2. student's experience is fostered, 3. student needs specific encouragement and stimulation, 4. students work together, 5. student learn actively using problem-solving, critical thinking, and discussion skills, 6. (collective, collaborative, and practical) activity is an important factor in learning, 7. student is involved in classroom activities, 8. student is the main component of the learning process, 9. a variety of educational activates exist in the classroom, 10. students observe their classmates in the environment, 11. the space is full of trust and confidence and self-esteem is increased, and 12. psychological health indicators, such as personal identity and good social relationships are enhanced, and sense of responsibility is developed. Students usually work together and learn from each other and the teacher in participatory learning, so they are active in this process rather than passively listening to a teacher who provides information as a single speaker. The student learns to help his/her classmates while addressing other issues in participatory learning. Critical thinking encourages this method to express their ideas in clear ideas (Johnson, 1971; 1979). David Johnson and Roger Johnson introduced specifications of learning participation within five key elements, including positive interdependence, individual accountability, face-to-face interaction, learning social skills, and group processing

(Herreid, 2000).

Following core components of cooperative learning are the accepted base for this paper following various studies on cooperative learning.

3.2. Quality of Environment

Quality is one of the basic professional concepts of design, so it benefits a considerable theoretical and practical importance. In addition to theoretical importance, quality has been essential practically due to the quality crisis seen in urban environments. Many designers and stakeholders have expressed their concerns about the low-quality design of urban environments. However, theoretical determination and development of environmental quality are necessary to achieve a common, comprehensive, and complete understanding of this concept.

"quality" is used in all artistic, scientific, and industrial disciplines. Architecture quality is mainly about visual, semantic, cultural, symbolic, and functional in architecture journals and discussions. However, it is not a simple attempt to understand the meaning of this term (Voordt & Wegen, 2005).

According to the history of quality in the architecture field, architecture quality has been examined as functional quality; some estate corporations created Real Estate Law in the early 1990s. This law that focused on functional quality was an important document for assessing architecture quality in Europe. Moreover, Dutch Government Building Agency established the National properties of the Netherlands and Rennes Foundation. This Foundation invented a simple method for quick and concise evaluation of buildings' architecture quality, which reduced evaluation of architecture quality to 50 aspects. This Foundation considers five general parts for quality assessment: 1. general information: information related to the user, area of floors, and financial data, 2. functional quality, location, building, and workplace, 3. visual and spatial quality, location, building, and workplace, 4. technical quality, general conditions of properties and its equipment, and 5. environmental quality (Voordt & Wegen, 2005). In general, criteria of environment quality from the viewpoint of different researchers have been reported in Table 2.

The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73

65

Table 2. Criterial of Environment Quality from the Viewpoint of Researchers

Reference	Criteria
(Roger Trancik, 1986)	Keeping movements' continuity, enclosure of spaces, continuity of edges, controlling axes and perspectives, combination indoor and outdoor spaces
(Donald Appleyard, 1987)	Livability, identity and control, access to opportunities, imagination and joy, authenticity and meaning, community and public life, urban self-reliance, and environment for all
(Rachel & Stephen Kaplan, 1998)	Distance, emancipation, expansion of mind, openness, width and breadth, attractiveness and mania, adaption and adjustment with environmental conditions
(Kevin Lynch, 1984)	Vitality, sense, fit, access, control and monitoring, efficiency, and justice
(Jane Jacobs, 1961)	Considering suitable activities before paying attention to the visual discipline of environment, using mixed-use either in the type of use or in terms of buildings' presence in an area, considering the element "street," social mixture, and flexibility of space
(Tibbalds, 1992)	Place or site, hierarchy, scale, enclosure, materials, decorations, symbols, signs and lights, attention to local society
(Southworth, 1989)	Structure, legibility, form, sense of place, identity views and landscapes, etc. human or pedestrian scale
(Voordt & Wegen, 2005)	Accessibility and parking facilities, accesses, flexibility, safety, spatial orientation or direction, privacy, and realm orientation, and social relationship, physical hygiene, and wellbeing, stability
(Dijkstra, 1985)	Being practical, clarity and complexity, meanings, proportion or fit, materials, fabric, color, and light
(Pakzad, 2011)	Vitality, flexibility, and safety
(Adham, 1996)	Green yard full of flowers, clean space, suitable and desirable color

Because Lynch's theory is a comprehensive framework, it was used as a base model to examine the quality of environment (independent variable) in the extant study. Table 3 presents nominal and operational definitions of environment quality's components based on the views of Lynch in his book "A Theory of Good City Form".

Table 3. Nominal and Operational Definition of Lynch's View Towards Dimensions of Environment Quality

Five Dimensions of Environment Quality	Nominal Definition	Operational Definition
Access	Having everything immediately (Lynch, 2002).	1. Suitable accessibility to different spaces
	The origin and destination can become closer by increasing the total density of occupation in a resident or compressing and compacting shared distance (Lynch, 2002)	2. Spaces are changeable
		3. Spaces destiny in an area is proper, and spaces are close

Five Dimensions of Environment Quality	Nominal Definition	Operational Definition
Efficiency and Justice	A fair site is where all have equal positions to express their hidden capacities while benefiting the interest created by others' development (Lynch, 2002). Every person must have the right to access vital requirements and needs (Lynch, 2002).	4. Individuals can participate in different activities in this place. 5. Individuals' needs and demands are satisfied in this place.
Vitality	The spatial environment must be matched with the main biological structure of humans (Lynch, 2002). A good residence is where fear of coping with risks, poisons, and disease has been minimized (Lynch, 2002).	6. There is thermal comfort in this place. 7. Visual comfort exists in this place. 8. The environment neither is crowded nor secluded visually. 9. There is suitable ventilation in indoor spaces of the place. 10. Buildings' form and location allow suitable sunlight to enter the indoor space. 11. The green space here is protected perfectly. 12. This place is controllable. 13. No risk threatens me in this place. 14. Walking and physical exercises are possible in this place.
Control and Authority	There are some rights in spatial control or surveillance, including the right to use, act, and behave freely in a place or using those facilities without assigning them to self (Lynch, 2002). There are various tools and methods for allocation and surveillance supply. Construction of privacy and border is one of these tools, i.e., through fences, tableau, symbol and sign, and manipulation of access indeed walls and other sources can be created can be set up against movement (Lynch, 2002). Both kings repetitively use spatial size, height, and distance on their thrones or by managers on top of skyscrapers (Lynch, 2002). Now, we depend on the central power to remove spatial control barriers. Police forces indeed are responsible for planning this case under the support of legal institutions. Moreover, another solution to resolve spatial surveillance is space division to relatively small sections separated clearly to prevent any interaction (Lynch, 2002).	15. A personal closet exists for devices in this place. 16. It is possible to determine the realm in this place. 17. I feel space ownership in this site. 18. It is possible to monitor and observe different spaces in this space. 19. It is possible to keep and maintain the environment. 20. It is possible to be a presence in this space. 21. It is possible to act and behave freely on this site. 22. I can use the amenities of this place accurately. 23. Environment management is possible in this place. 24. Accesses and passages are controlled on this site. 25. There are various signs and symptoms of surveillance in this environment. 26. It is essential to pass through the spatial filter to access important spaces, such as the university principal's office. 27. This place is controlled by university regulatory agents. 28. Different spaces have been separated completely. 29. Spaces' scale is suitable for surveillance in this place.

The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73

67

Five dimensions of Environment Quality	Nominal Definition	Operational Definition
Sense	Sense depends on the spatial form and quality (Lynch, 2002). The simplest form of sense or meaning is the extent to which a person can recognize a place distinguishing it from other places (Lynch, 2002). Events can have an identity; this is the meaning of the occasion. Specific and glorious ceremonies highly have meaning (Lynch, 2002). Another element, meaning, is a formal structure that combines components on a small scale and a mean sense of navigation in large residences (Lynch, 2002). Local structure makes the place recognition meaningful by understanding how its components are aligned, and people usually use different signs to create a structure (Lynch, 2002).	1. Classroom space is clear and recognizable. 2. Public space is clear and recognizable. 3. This university is distinguished from other universities. 4. Sometimes specific events and ceremonies are held in this place. 5. This place is memorable for me. 6. This place is familiar to me. 7. I easily find my way and will not get lost. 8. The form and activities of this place are harmonic and matched. 9. I can find my way into university due to the buildings' location. 10. There are meaningful signs and symptoms in this place. 11. Individuals have common mental imaginations from this environment. 12. This place is maintained very well. 13.This place has a good physical quality.
Fit	Invention and introduction of new place behavior forms can be as creative as the invention and construction of new physical forms (Lynch, 2002).	43. This is a good place for education. 44. I feel comfortable in this place. 45. I feel satisfied in this place. 46. Spaces of this place have satiable dimensions and sizes. 47. Spaces benefit from various usability options. 48. Spaces can be changed in this place.

4. METHOD

A survey method was used in this research. This method includes description, determination, and discovery of relationships between variables. The theoretical framework was formulated using the bibliographic method and reviewing the relevant background, while the evaluation model was designed based on the foundations. The researcher-made questionnaire with closed-ended questions was designed based on the derived indicators in the next step. After the validity and reliability of the questionnaire were examined, it was distributed among statistical society members. The statistical population comprised 200 junior and senior students of the University of Bojunrd. Finally, responses of 185 students were entered into the analysis after removing unavailable students and incomplete responses. The results were extracted using SPSS Software.

5. RESEARCH VALIDITY AND RELIABILITY

After variables were designed, the questionnaire was designed to determine validity and reliability. To do this, questionnaires were distributed among university professors to express their ideas about the measurability of variables by items and grammatical issues. Based on the expressed opinions, some items were corrected, modified, and removed in this step. After face validity was determined, the validity of indicators was assessed within two primary test steps and an interview with 20 students. The final test of the questionnaire was done among 200 senior and junior students of the University of Bojnord. The University of Bojnord was chosen since it is a comprehensive university with 4000 students in northern Khorasan, Iran. The questionnaire items were designed in the frame of three conceptual categories based on the research literature. For this purpose, 58 items were designed. Finally, qualitative data was converted to quantitative ones through SPSS software. These data have been reported herein. Cronbach's alpha coefficient of the final test equaled 0.803.

6. RESULTS

This was applied research in terms of objective. Survey and correlation research methods examined the relationship between environmental quality and students' participation in the learning process. Smirn-

ov-Kolmogorov Statistical Test was used to detect the normal distribution of data. Spearman (Pearson) and eta-squared tests were employed to determine the relationship between intensity and direction. The statistical population comprised all students of the University of Bojnord. The sample size was measured using the Cochrane formula; sample size equaled 200 (n=200) to achieve suitable results for analysis through software. Finally, 185 questionnaires were collected and analyzed. A random sampling method was used. The results showed skewness and kurtosis values varied between -2 and 2. However, Smirnov-Kolmogorov indicated that data distribution of general indicators "control" and "sense" was normal was, while other indicators had non-normal distribution. According to the scattering diagram, there was a linear relationship between variables. Variables were continuous and distant. There were many stochastic samples; hence, the Pearson correlation coefficient was used for correlation analysis of control and sense indicators due trot her normal distribution, while the Spearman test was used for other six variables (due to their non-normal distribution). Eta-squared was used to analyze the causal relationship between two dependent and independent variables.

Table 4. The Correlation Coefficient of Six Independent Variables with Participation in the Learning Process Based on the Pearson Coefficient

	Participation	Access	Justice	Vitality	Control	Sense	Fit
Pearson correlation of participation Sig. (2-tailed)	1	0.310** 0.001	0.407** 0.000	0.351** 0.000	0.324** 0.001	0.282** 0.003	0.304** 0.001

Two variables of control and sense were evaluated using the Pearson correlation coefficient, while the rest four variables were evaluated using the Spearman correlation coefficient. Correlation results indicated that "efficiency and justice" had the highest correlation (0.398) with participation in the learning process, while "sense" had the lowest correlation (0.282) with participation in the learning process. The efficiency and justice index of the environment quality concept had the highest effect on participation in the learning process, followed by the vitality index (0.367). "Sense" index had the lowest effect on participation in the learning process. Moreover, the results indicated no significant difference between the opinions of girls and boys about participation in the learning process and six indicators of environmental quality.

Table 5. The Effect Size of Indicators of Participation in Learning and Environment Quality among Students of the University of Bojnord (Based on Gender)

	Variable	Gender	Mean	Statistic	df	Sig.
Index	Participation	Female Male	3.10 2.94	2.376	196	0.126
	Access	Female Male	2.54 2.41	0.639	196	0.426
	Justice	Female Male	2.44 2.34	0.499	196	0.482
	Vitality	Female Male	2.85 2.96	0.649	196	0.422
	Control	Female Male	2.82 2.70	1.290	196	0.259
	Sense	Female Male	2.97 2.95	0.017	196	0.897
	Fit	Female Male	2.79 2.84	0.097	196	0.757

Table 6. The Correlation Coefficient between Six Components of Environment Quality (Independent Variable) and Participation in the Learning Process (Dependent Variable) based on the Spearman Coefficient

	Participation	Access	Justice	Vitality	Control	Sense	Fit
Pearson correlation of participation Sig. (2-tailed)	1	0.283** 0.003	0.398** 0.000	0.367** 0.000	0.312** 0.001	0.253** 0.008	0.329** 0.001

The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73

69

Table 7. Eta-Squared Coefficient of Questionnaire Items

Criterion	Items	Eta2
Access	1. Suitable accessibility to different spaces	0.041
	2. Spaces are changeable	0.129
	3. Spaces destiny in an area is proper, and spaces are close	0.045
Efficiency and Justice	4. Individuals can participate in different activities in this place.	0.067
	5. Individuals' needs and demands are satisfied in this place.	0.176
Vitality	6. There is thermal comfort in this place.	0.075
	7. Visual comfort exists in this place.	0.045
	8. The environment neither is crowded nor secluded visually.	0.216
	9. There is suitable ventilation in indoor spaces of the place.	0.085
	10. Buildings' form and location allow suitable sunlight to enter the indoor space.	0.141
	11. The green space here is protected perfectly.	0.030
	12. This place is controllable.	0.10
	13. No risk threatens me in this place.	0.108
	14. Walking and physical exercises are possible in this place.	0.062
Control and Authority	15. A personal closet exists for devices in this place.	0.022
	16. It is possible to determine the realm in this place.	0.011
	17. I feel space ownership in this site.	0.018
	18. It is possible to monitor and observe different spaces in this space.	0.054
	19. It is possible to keep and maintain the environment.	0.140
	20. It is possible to be a presence in this space.	0.019
	21. It is possible to act and behave freely on this site.	0.077
	22. I can use the amenities of this place accurately.	0.066
	23. Environment management is possible in this place.	0.054
	24. Accesses and passages are controlled on this site.	0.058
	25. There are various signs and symptoms of surveillance in this environment.	0.061
	26. It is essential to pass through the spatial filter to access important spaces, such as the university principal's office.	0.042
	27. This place is controlled by university regulatory agents.	0.077
	28. Different spaces have been separated completely.	0.076
	29. Spaces' scale is suitable for surveillance in this place.	0.058
Sense	30. Classroom space is clear and recognizable.	0.049
	31. Public space is clear and recognizable.	0.082
	32. This university is distinguished from other universities.	0.103
	33. Sometimes specific events and ceremonies are held in this place.	0.021
	34. This place is memorable for me.	0.063

Criterion	Items	Eta2
Sense	35. This place is familiar to me.	0.056
	36. I easily find my way and will not get lost.	0.029
	37. The form and activities of this place are harmonic and matched.	0.067
	38. I can find my way into university due to the buildings' location.	0.082
	39. There are meaningful signs and symptoms in this place.	0.119
	40. Individuals have common mental imaginations from this environment.	0.049
	41. This place is maintained very well.	0.049
	42. This place has a good physical quality.	0.036
Fit	43. This is a good place for education.	0.122
	44. I feel comfortable in this place.	0.154
	45. I feel satisfied in this place.	0.100
	46. Spaces of this place have satiable dimensions and sizes.	0.043
	47. Spaces benefit from various usability options.	0.089
	48. Spaces can be changed in this place.	0.037

According to the results of the eta-squared analysis, vitality had the highest effect on participation in the learning process. The item "the environment neither is crowded nor solitude visually" had the highest effect on participation in the learning process; it means that 21% of the total variance of participation in the learning process can be explained by the desired visual environment. The next item, "individuals' needs and demands are satisfied in this place," had the highest variance (0.176) of effect on participation in the learning process. In contrast, items "I feel comfortable in this place" (0.154), "buildings' form and their location allows suitable sunlight enter the indoor space" (0.141), "it is possible to keep and maintain the environment" (0.140), "spaces are changeable" (0.129), and "this is a good place for education" were at next ranks. Finally, the item "green space here is cared perfectly" of vitality index could explain 3% in the variance of participation in the learning process, so it was at last rank.

Moreover, analysis results implied that items of control and authority index had the lowest variance value in explaining the variance of participation in the learning process, so this item had the lowest effect on the learning process. In general, item "it is possible to determine realm in this place" (0.011) could explain 1% of the total variance of participation in the learning process, so this item had the last rank among 48 items.

7. CONCLUSION

The extant study was conducted to evaluate the relationship between environmental quality and participation in the learning process. Educational spaces provide the field for participation in the learning process. The present study aimed to identify factors affecting strengthening participation in the learning process relying on improving indoor and outdoor spaces of campuses in the University of Bojnord due to its importance and specifications. According to studies conducted on the impact of the environment on human behavior, it was concluded that students' activities in academic spaces and university campuses are influenced by the designer. Therefore, any positive change made by a designer in this field requires identifying and using design determinants.

The results indicated no significant difference between girls' and boys' opinions about participation in the learning process and six indicators of environmental quality. Component "efficiency and justice" of quality environment index (correlation coefficient=0.407) had the highest correlation with participation in the learning process. Vitality under the quality of environment index (0.351) was at the next rank. According to obtained results, almost every effective variable could equally and independently affect the increase in the learning participation process at the University of Bojnord. This also confirmed that all six selected dimensions could improve participation in learning inside and outside the university. The results indicated that item "the environment neither is crowded nor solitude visually" (eta2=0.216) under the vitality index had the highest eta-squared, subsequently the highest impact on participation in the learning process. This item could explain 21% of the variance of participation in the learning process. Visual elements must be used in a balanced way in fa-

The Effect of Academic Environments' Quality on Improvement
of Participation in Learning Process
Page Numbers: 61-73
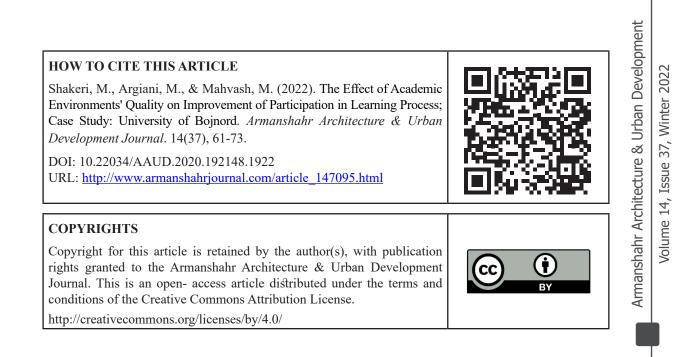
71

cades to have a suitable geometrical composite. Moreover, the item "satisfying individuals' needs" under the efficiency and justice index (eta2=0.176) was at the next rank and could explain 17% of the variance in participation in the learning process. Therefore, social norms and participation can meet individuals' needs based on these conditions: 1) considering different facilities and amenities required for a student on the university campus, so they do not have to go outside, 2) paying attention to different spaces and performances in university space. Moreover, the item of feeling comfortable (0.154) under the fit index of environment quality was at the next rank and could explain 15% of variance n participation in the learning process.

Shakeri, M. et al.

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The Effect of Academic Environments' Quality on Improvement
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Page Numbers: 61-73

73

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