



# The Relationship Between Learning Environment and Expectations and Perceptions of Graduate Students at Kerman University of Medical Sciences, Kerman, Iran

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## Abstract

**Background:** Many factors involve in the process of education i.e., the teacher, curriculum, and learning environment. The educational climate has an exact and tangible relationship with the expectations and perceptions of students, especially students of medical sciences universities, and particularly, the graduate ones.

**Objectives:** The current study aimed at investigating the relationship between learning environment and expectations of graduate students at Kerman University of Medical Sciences, Kerman, Iran.

**Methods:** The present cross sectional study was conducted on 193 graduate students from April to July 2017. The subjects were selected by stratified random sampling and weighting methods from each faculty. Data were collected through Dundee ready education environment measure (DREEM) and SERVQUAL instruments. Data were analyzed using multiple linear regression and Pearson correlation coefficient in SPSS.  $P < 0.05$  was considered as the level of significance.

**Results:** Among the subjects, 62.2% were male and 52.0% single; however, 76.2% were masters' students and 23.8% PhD candidates. From the students' point of view, the educational climate had a better status among the learning environment dimensions. In terms of students' expectations and perceptions of the learning environment, the tangibles and the client consideration dimensions got the highest mean scores as 42.8 and 88.8, respectively. There was a significant relationship between marital status and learning environment ( $P = 0.04$ ). There was also a significant relationship between students' perception of educational services and their semester number ( $P = 0.04$ ).

**Conclusions:** It is better to use student-centered viewpoints in educational planning. Students' satisfaction can be improves by providing appropriate learning spaces and optimizing the existing ones. Adjusting students' expectations by familiarizing them with the line and staff constraints in higher education can play a significant role in enhancing the quality of educational services.

**Keywords:** Learning Environment, Expectations, Perception, Students, Higher Education, University of Medical Sciences

## 1. Background

Higher education is the key element of human development in each community. The quality of education is an effective factor in the output of educational organizations that drives the cycle of cultural and economic development. Today, education, especially higher education, is one of the most important issues facing human societies, which plays a very bold and decisive role in the growth and development of the society; however, with the advent of technology in the last century, this has become even more important. Nevertheless, dare to say education may be the most critical factor in maintaining the dynamics of societies, especially the developing ones (1).

Many factors are involved in the process of education and each alone has a certain impact on learning; teacher is one of them as a human factor. Curriculum and resources is another factor influencing the teaching and learning process, but the climate of the learning environment and spaces, which is most influenced by the implementation of the curriculum, teachers' attitude towards learning behavioral and organizational culture of the institute, and student's attitude toward the learning environment and their perception of social conditions, is the most important factor. The learning environment climate is a determining factor in students' motivation in education, because it promotes behaviors that lead to better learning and academic

achievement (2).

In general, the organizational climate is the internal quality of the organization according to the perception and experience of its members. Climate refers to a set of features that distinguishes one organization from another. As personality refers to one's essential characteristics, the climate also relates to the enduring characteristics of organizations (3). The university climate is also a relatively enduring quality of the learning environment resulting from efforts, relationships, and interactions among internal groups, officials, faculty members, staff, and students. The end result of these interactions is the formation of values, beliefs, and social norms of the university system. The interaction between learners and the social environment is of particular importance (4). The key to building and promoting any society is in the hand of youths. If the best and most advanced stratum of the society, namely young students, does not like its learning environment, does not find the subjects useful, and does not enjoy the kind of relationships with faculty and staff, a severe blow destroys its exploratory spirit (5).

As mentioned, learning climate and environment are among the factors influencing the education process, but they have an exact and tangible relationship with the expectations and perceptions of students, especially students of medical sciences universities, and particularly, the graduate ones. The quality of educational services is determined by examining the gap between students' expectations (optimal status) and their perception of the educational services provided (status quo). The lower the gap between the expectations of students and the educational services provided, the better the quality of educational services (6).

Students receive a variety of services during their education. Therefore, their viewpoint toward the educational services offered can be considered as one of the quality indices of the university (7). Lack of awareness of students' expectations means spending resources on things that are not important to them, which can lead to students' dissatisfaction (8). Expectations and perceptions are directly related to quality; in fact, its customer-centric approach. In this approach, quality is a subjective matter defined and explained by the receivers and depends heavily on clients' perception. A key strategy for the success and survival of any organization (commercial, medial, or educational) is to provide clients with high-quality services. Customer satisfaction is his/her feeling or attitude toward a particular service after receiving it. Satisfaction and quality of services are often discussed as a function of client perceptions and expectations. Customer satisfaction is determined by defining his/her perceptions of quality, expectations, and preferences (9). Knowing this, it can be concluded that the level of these expectations of the learning environments has reached maximum due to particular conditions, and

consequently, the identification of these expectations and being aware of the gap between the services provided and the expectations met in that environment even seem more important (10).

Despite the critical role of educational services among other types of services, the way of delivering such services often leads to dissatisfaction in the students and, subsequently, the society (11). Proper quality control is a way to reduce the quality gap. Evaluation of learning environments indicates that the students' demands are not fulfilled. An essential first step in compensation for gaps in educational services is to identify students' perceptions and expectations of service quality, determine the strengths and weaknesses of educational services, and then adopt strategies to reduce such gaps and fulfill students' demands (12).

The educational climate has a direct relationship with students' expectations and perceptions and influences them. The results of the study by Sanagu et al. (13), conducted at Golestan University of Medical Sciences, Iran, showed that the educational climate is an effective factor in students' satisfaction. Therefore, getting constant feedback from students about their perceptions of the social environment is important. In their study, only 7% of the subjects reported educational climate as dissatisfactory (13). Al-Ayed and Sheik in a study concluded that shortages in the learning environment cause many changes in the learning process (14). The findings of the study by Kavosi et al. (11), at the Faculty of Management and Medical Informatics, Shiraz University of Medical Sciences, showed that students' expectations were significantly higher than their perceptions and there was a large gap between students' expectations and perceptions. According to the research results, there is a direct relationship between the educational climate in the institutions and the expectations and perceptions of their students (15). Also, the research results indicated that there is a significant gap between service quality and students' expectations, indicating that the provided services do not cover the students and teachers' expectations in any of the quality dimensions and some plans should be designed to improve service quality and fulfill demands (12). In his study, Hutchinson concluded that students' learning in different learning environments is influenced by their expectations and perceptions, which in turn indicates the relationship between these two variables (16).

## 2. Objectives

Considering the aforementioned issues and in order to improve the quality of the educational process, it is necessary to investigate the relationship between educational climate and students' expectations and perceptions to reduce the gap between these two variables.

### 3. Methods

The present descriptive-analytical, cross sectional study was performed from April to June 2017 on 193 graduate students at all faculties of Kerman University of Medical Sciences; i.e., 40 students from the Faculty of Medicine, 31 from the Faculty of Midwifery and Nursing, 40 from the Faculty of Management and Medical Information, 50 from the Faculty of Allied Medicine and Public Health, 12 from the Faculty of Pharmacy, and 16 from the Faculty of Dentistry selected by stratified random sampling.

Questionnaires were distributed and collected before or after the class, following the coordination with the professor. The enrolled students studied at semesters 3 to 7. The study population consisted of 643 graduate students at medicine ( $n = 222$ ), midwifery and nursing ( $n = 100$ ), pharmacy ( $n = 29$ ), dentistry ( $n = 73$ ), public health and allied medicine ( $n = 145$ ), and management and medical informatics ( $n = 74$ ) faculties at Kerman University of Medical Sciences, Kerman, Iran.

The required information were collected using the Dundee ready education environment measure (DREEM) including 50 items on learning (12 items), professors (11 items), student perception of academic ability (8 items), educational climate (12 items), and socioeducational environment (7 items). Eight questions (i.e., 48, 39, 35, 25, 17, 9, 8, and 4) had a negative concept; hence, they were scored reversely (13).

The SERVQUAL instrument was used to measure the perceptions and expectations of graduate students of the educational services provided. This 30-item instrument consisted of five service quality dimensions including physical (tangibles) (4 items), validity and reliability (ability of the university to deliver the services promised to students) (5 items), responsiveness (degree of staff responsiveness to the services provided for students) (5 items), professional competence and assurance (11 items), and client consideration (5 items) (17).

Both instruments were scored based on a five-point Likert scale from strongly agree to strongly disagree; scores 1 to 5 were converted to 0 to 100 and the mean score of each dimension was calculated based on the items scores. According to the statistics consultant, the mean scores 0 to 33.3 were considered as poor, 33.4 to 66.6 as moderate, and 66.7 to 100 as good. Reliability of the SERVQUAL was reported 0.93 using Cronbach's alpha coefficient in a similar study on 30 students. The instrument had also a good validity (11). The reliability of the DREEM was confirmed in a pilot study on 20 students; its Cronbach's alpha coefficient was 0.75. SERVQUAL had an acceptable validity (1).

Data were analyzed using multiple linear regression and Pearson correlation coefficient in SPSS version 22 (IBM Corporation, Armonk, NY).  $P$  value  $< 0.05$  was considered as the level of significance. The response rate was 100%

since in case of non-cooperative subjects, alternatives were assigned to complete the questionnaire.

The protocol of the present study was approved by the Ethics Committee (code no.: IR.KMU.REC.1394.355) and the Environmental Health Engineering Research Center (project no.: 94/341) of Kerman University of Medical Sciences; it was also granted by the Vice Chancellor for Research and Technology Affairs of the university.

### 4. Results

Among the students, 62.2% were male and 37.8% female; 72.5% belong to Fars ethnicity and 27.5% to other ethnicities; 52.0% were single and 46.0% married. Also, 76.2% of the participants were master's students and 23.8% PhD candidates. The mean age of the subjects was  $26 \pm 2$  years.

Regarding the learning environment, the highest and the lowest mean scores belonged to the dimensions of educational climate and student perception of academic ability respectively, showing moderate status in this regard. Regarding the variable of students' expectations of the learning environment, the highest and lowest mean scores belonged to tangibles and professional competence and assurance respectively, reflecting the moderate status of these dimensions. Regarding the variable of student's perception of the learning environment, the highest and lowest mean scores were related to client consideration and tangibles respectively, showing the good status of the dimensions (Table 1).

There was a significant relationship between marital status and mean score of learning environment, so that the mean score of married subjects in learning environment was 2.6 points lower than that of single ones. There was no significant relationship between mean scores of other demographic variables and learning environment status (Table 2).

There was a significant relationship between students' semester number and the mean score of their perception of educational status; by each semester increase, the mean score of students' perception of learning environment decreased by 1.2 points, but no significant relationship was observed between the mean score of other demographic variables and students' perception status (Table 3).

There was a significant difference between the students of allied medicine and public health, and management and Medical Informatics faculties and those of the Faculty of Medicine (the reference faculty) in terms of the mean score of expectations; so that the mean scores of students' perception of learning environment 8.8 points in the Faculty of Allied Medicine and 9.8 points in the Faculty of Management and Medical Informatics were higher than that of the Faculty of Medicine; however, no significant difference was found in this regard between other faculties and the faculty of medicine (Table 4).

**Table 1.** Mean Score of Students in Learning Environment, Perceptions, and Expectations<sup>a</sup>

Dimension	Values
<b>Learning environment</b>	
Learning	44.5 ± 9.2
Professors	43.5 ± 10.8
Students' perception of academic ability	42.7 ± 11.2
Educational climate	45.5 ± 9.6
Socio-educational environment	45.0 ± 10.4
Total score	44.3 ± 8.1
<b>Student perception of educational services provided</b>	
Tangibles	87.4 ± 14.3
Validity and reliability	88.2 ± 13.5
Responsiveness	88.0 ± 13.8
Professional competence and assurance	87.7 ± 14.1
Client consideration	88.8 ± 13.4
Total score	88.0 ± 12.9
<b>Expectations of learning environment</b>	
Tangibles	42.8 ± 16.4
Validity and reliability	40.9 ± 15.2
Responsiveness	42.5 ± 16.3
Professional competence and assurance	40.2 ± 15.1
Client consideration	40.6 ± 16.4
Total score	41.1 ± 13.3

<sup>a</sup>Values are expressed as mean ± SD.

There was a significant correlation between learning environment and its dimensions. The highest and lowest correlations were found in the dimensions of professors and socio-educational environment; in other words, the dimension of professors had the highest role and the social-educational environment dimension the lowest role on the perception of postgraduate students of educational environment.

There was a significant relationship and correlation between students' perceptions of learning environment and its dimensions. The dimension of professional competence and assurance played the highest role and the two dimensions of tangibles and client consideration played the lowest role on the perception of postgraduate students of educational environment.

There was a significant correlation between expectations and its dimensions; the highest correlation was related to two dimensions of professional competence and assurance and client consideration and the lowest correlation was related to intangibles dimension, meaning that the dimensions of professional competence and assurance and client consideration had the highest influence and tangibles had the lowest influence on student's expectations.

The correlation between learning environment and students' perceptions and expectations was poor and no significant relationship was also found between learning

environment and students' perceptions and expectations; i.e., by increasing the quality of learning environment, students' expectations of educational quality decreased (Table 5).

## 5. Discussion

The results showed that the highest and lowest mean scores of learning environment were related to the educational climate and students' perception of academic ability, respectively. In the study by Faghani et al. (1), conducted at Golestan University of Medical Sciences, the highest and lowest mean scores belonged to educational climate and social environment. The study by Tripathy and Dudani in India indicated that the highest and lowest scores were respectively attributed to educational climate and students' social perception (18), while in the study by Riquelme et al. (19), in Chile, the highest and lowest scores were respectively related to students' perceptions of academic ability and learning environment.

Concerning the variable of students' perception of learning environment, the highest and lowest mean scores belonged to the client consideration and tangibles, respectively. The results of the study by Aghamolaei et al. (20), showed that the highest and lowest scores of students' perception of learning environment were related to the confidence and responsiveness dimensions, respectively. In a study on students' viewpoint toward the educational climate, Sanagu et al. (13), stated that among the five dimensions, professors and educational climate got the lowest and the highest scores, respectively.

Based on the results of the present study on students' expectations of the learning environment, the highest and lowest mean scores belonged to tangibles and professional competence and assurance dimensions, respectively. Kavosi et al. (11), concluded that among the five dimensions of the SERVQUAL regarding students' expectations and perceptions, the highest and lowest scores in the expectations variable were related to assurance and intangible dimensions, respectively. The highest and the lowest scores in the perception dimension were respectively belonged to the dimensions of assurance and empathy, while the highest and the lowest scores in the present study belonged to the client consideration and tangibles dimensions. The difference between the results of the present study and those of aforementioned studies can be attributed to differences in the studied populations.

The results of the present study showed that the mean score of married subjects in learning environment was 2.59 points lower than that of single ones; to explain, it can be said that married students have other concerns that are more important to them than the classroom and learning environment.

**Table 2.** Relationship Between Demographic Characteristics and Learning Environment in Students<sup>a</sup>

Demographic Characteristics	Values	Regression Coefficient	95% Confidence Interval	P Value
<b>Gender</b>				
Female <sup>b</sup>	43.4 ± 7.9	-	-	-
Male	44.9 ± 8.2	1.60	-0.9, 4.1	0.22
<b>Ethnicity</b>				
Fars	44.5 ± 8.7	-	-	-
Others <sup>b</sup>	43.8 ± 6.2	1.80	-0.6, 4.4	0.15
<b>Marital status</b>				
Single	45.4 ± 8.8	-	-	-
Married	43.1 ± 7.0	-2.59	-5.1, -0.05	0.04
<b>Level of education</b>				
Master's degree <sup>b</sup>	44.6 ± 8.5	-	-	-
PhD	43.5 ± 6.5	1.60	5.4, -2.2	0.41
<b>Faculty</b>				
Medicine <sup>b</sup>	44.9 ± 7.5	-	-	-
Midwifery and Nursing	42.0 ± 5.5	-0.72	-4.6, 3.1	0.71
Allied Medicine and Public Health	44.7 ± 10.1	0.38	-2.8, 3.6	0.81
Dentistry	40.7 ± 2.7	-4.60	-9.6, 0.41	0.72
Management and Medical Informatics	47.3 ± 8.6	3.50	-0.08, 7.2	0.05
Pharmacy	41.3 ± 5.8	-3.40	-8.3, 1.4	0.16
Age	-	0.41	-0.08, 9.0	0.10
Semester	-	-0.42	-1.1, 0.2	0.24

<sup>a</sup>Values are expressed as mean ± SD.<sup>b</sup>Reference group.**Table 3.** Relationship Between Demographic Characteristics and Students' Perceptions of the Educational Services Provided<sup>a</sup>

Demographic Characteristics	Values	Regression Coefficient	95% Confidence Interval	P Value
<b>Gender</b>				
Female <sup>b</sup>	89.4 ± 10.6	-	-	-
Male	87.1 ± 14.1	-2.6	-6.8, 1.6	0.22
<b>Ethnicity</b>				
Fars	87.8 ± 12.9	-	-	-
Others <sup>b</sup>	88.3 ± 13.1	-1.0	-5.3, 3.2	0.62
<b>Marital status</b>				
Single	88.2 ± 14.2	-	-	-
Married	87.7 ± 11.3	-1.2	-5.4, 2.9	0.56
<b>Level of education</b>				
Master's degree <sup>b</sup>	88.0 ± 12.7	-	-	-
PhD	87.7 ± 13.7	2.1	-4.3, 8.5	0.52
<b>Faculty</b>				
Medicine <sup>b</sup>	85.6 ± 15.5	-	-	-
Midwifery and Nursing	87.5 ± 10.7	0.7	-5.7, 7.2	0.81
Allied Medicine and Public Health	90.1 ± 9.9	4.3	-1.0, 9.6	0.11
Dentistry	88.4 ± 11.4	2.4	-5.9, 10.8	0.57
Management and Medical Informatics	88.0 ± 11.4	0.9	-5.0, 7.0	0.74
Pharmacy	88.2 ± 10.7	2.6	-5.4, 10.7	0.52
Age	-	-0.1	-1.0, 0.6	0.65
Semester	-	-1.2	-2.3, -0.04	0.04

<sup>a</sup>Values are expressed as mean ± SD.<sup>b</sup>Reference group.

**Table 4.** Relationship Between Demographic Characteristics and Students' Expectations of the Learning Environment<sup>a</sup>

Demographic Characteristics	Values	Regression Coefficient	95% Confidence Interval	P Value
<b>Gender</b>				
Female <sup>b</sup>	42.1 ± 13.4	-	-	-
Male	40.6 ± 13.3	-1.4	-5.6, 2.7	0.500
<b>Ethnicity</b>				
Fars	42.8 ± 11.1	-	-	-
Others <sup>b</sup>	40.5 ± 14.0	-2.0	-6.1, 2.1	0.340
<b>Marital status</b>				
Single	40.6 ± 14.1	-	-	-
Married	41.8 ± 12.3	-0.8	-4.9, 3.2	0.690
<b>Level of education</b>				
Master's degree <sup>b</sup>	40.6 ± 13.4	-	-	-
PhD	42.8 ± 12.8	2.9	-3.1, 9.6	0.360
<b>Faculty</b>				
Medicine <sup>b</sup>	35.8 ± 14.0	-	3.6, 14.14	-
Midwifery and nursing	37.4 ± 10.6	3.2	-5.9, 10.4	0.320
Allied medicine and public health	44.9 ± 11.7	8.8	3.8, 15.8	< 0.001
Dentistry	41.2 ± 12.0	2.2		0.590
Management and medical informatics	44.9 ± 15.2	9.8		< 0.001
Pharmacy	42.0 ± 10.5	5.3	2.6, 13.2	0.190
<b>Age</b>		0.7	-0.01, 1.5	0.050
<b>Semester</b>		-0.2	-1.3, 0.9	0.700

<sup>a</sup>Values are expressed as mean ± SD.<sup>b</sup>Reference group.**Table 5.** Correlation Between the Dimensions Studied in Students

Dimensions	Pearson Correlation Coefficient	P Value
<b>Learning environment</b>		
Learning	0.76	< 0.001
Professors	0.85	< 0.001
Students' perception of academic ability	0.82	< 0.001
Educational climate	0.84	< 0.001
Socioeducational environment	0.64	< 0.001
<b>Perception of educational services provided</b>		
Tangibles	0.90	< 0.001
Validity and reliability	0.941	< 0.001
Responsiveness	0.91	< 0.001
Professional competence and assurance	0.96	< 0.001
Client consideration	0.90	< 0.001
<b>Expectations for learning environment</b>		
Tangibles	0.75	< 0.001
Validity and reliability	0.81	< 0.001
Responsiveness	0.83	< 0.001
Professional competence and assurance	0.92	< 0.001
Client consideration	0.92	< 0.001
<b>Total expectations for learning environment</b>		
Total perception of educational services provided	-0.02	0.780
Total learning environment	0.01	0.890
<b>Total perception of educational services provided</b>		
Total learning environment	-0.008	0.910



According to the results of the present study, gender differences had no impact on the evaluation of educational services and expectations and perceptions of students of these services. In studies by Abbasian et al. (21), and Faghani et al. (1), a significant difference was found between male and female students in this regard.

In the study by Kavosi et al. (11), a significant relationship was observed between students' perceptions and the semester they spent studying, which was consistent with the findings of the present study.

Students' expectation score in the faculties of allied medicine and public health and management and medical informatics were respectively 8.8 and 9.8 points higher than that of the faculty of medicine. In fact, it can be said that different faculties make different expectations in students; the studies by Mohammadi and Mohammadi (15), and Kavosi et al. (11), also confirmed the obtained results.

There was a poor relationship between educational climate and expectations and perceptions of students. The findings of the present study showed a negative gap in all dimensions of educational service quality and educational climate terms, indicating that from the viewpoint of students, the delivered service did not cover their expectations and necessary measures should be taken in this regard. The results of the studies by Aghamolaei et al. (20), at Hormozgan University of Medical Sciences, Kebriaei and Roudbari (22), at Zahedan University of Medical Sciences, Arbouni et al. (17), at Zanjan University of Medical Sciences, and Tofighi et al. (23), at Paramedical School, Tehran University of Medical Sciences, Iran as well as Tan and Kek (24) in Singapore and Bradley (25) in China confirmed this finding and were in agreement with the present study results.

The mentioned researches were somehow the analyses of learning environment, and their results can be an effective in improving the quality of education. The gaps observed in all components as well as the five dimensions of service quality can be utilized as a guide for proper planning and resource allocation. On the other hand, it is suggested to hold educational workshops for faculty members, advisory professors, and staff in order to improve the quality of services, with the aim of enhancing technical and communication skills using a student-centered viewpoint in educational planning.

Providing appropriate learning spaces and optimizing existing areas can also be effective in increasing students' satisfaction. Also, familiarizing faculty members, advisory professors, teaching staff, and students with educational rules and regulations to better serve students and, on the one hand, moderating students' expectations by familiarizing them with existing line and staff constraints in the higher education system can play an important role in enhancing the quality of educational services. Students may experience a high-quality education, lecturers can receive favorable feedback for professional development,

and the university may gain good credit under such circumstances.

Finally, due to differences in courses and levels of education, facilities, equipment, staff, and faculty members as well as cultural, social, and other indices in different societies, the perceptions and expectations of service providers vary toward service quality. Therefore, in order to improve the quality of educational services, similar studies in other universities are recommended.

## Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal website and open PDF/HTML].

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## Footnotes

**Conflict of Interests:** None declared by the author.

**Ethical Approval:** The protocol of the present study was approved by the Ethics Committee (code no. IR.KMU.REC.1394.355) and the Environmental Health Engineering Research Center (Project no. 94/341) of Kerman University of Medical Sciences.

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