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Review Paper

Effect of a new campus, educational level, and instructional mode on the students' perceptions of educational environment of physical therapy program, King Saud University

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Purpose: The primary aim of this study was to investigate the effect of a new campus on the students' perception of the educational environment. The secondary aim is to investigate the effect of educational level and instructional mode on the students' perceptions of educational environment.

Method: The Dundee Ready Education Environment Measure (DREEM) inventory was used to collect the data from 71 students enrolled in educational level 7-9 at Physical Therapy Program, King Saud University, Saudi Arabia during the academic year 2013-2014.

Results: Students showed the significant higher perception of the educational environment at the new campus than the old one (mean score for the inventory total scale were 152.1 and 127.7 respectively, $P= 0.0001$). There were significant relationship between the educational level and educational environment ($P= 0.025$) from one side and between the instructional mode and the educational environment ($P= 0.019$) from the other side. Inventory sub-scales also revealed to be affected by the new campus, educational level, and instructional mode.

Conclusion: The new campus of Physical Therapy Program positively affected the students' perception of the educational environment. Mostly interactive instructional mode was preferred by the students. The students' educational level also showed a significant relationship with their perception of the educational environment.

Keywords: Educational environment, Physical Therapy, King Saud University, Saudi Arabia, Campus, Educational level, Instructional mode, Students' perception, Dundee Ready Education Environment Measure (DREEM).

INTRODUCTION

The educational environment covers everything happening in the institutions [1]. It is widely agreed among medical educators that an optimal educational environment hugely impacts the learning process, students' learning experience and outcomes [2-6]. Moreover, the effectiveness of an educational program is strongly related to the quality of the educational environment [5, 7, 8].

Evaluation of educational environment was highlighted as key to the delivery of high quality education [2, 3] and studying each unique educational environment provides a rich source of data which can be used to enhance students' learning experiences and develop their satisfaction and achievements [1].

Students' perception of their educational environment has progressively attracted more attention [9] and it is always recognized as important to consider the students' perceptions to improve the educational environment because students' perceptions are associated positively with learning outcomes, learning approach and attitude toward studying [5]. Assessment of students' perceptions regarding the educational environment was believed to assist educators and administration of health professions colleges in gauging the quality of learning [4].

One of the famous methods for assessing the students' perceptions is using the Dundee Ready Education Environment Measure (DREEM), particularly in health and medical programs [10, 11]. The DREEM, is a universal,

validated, and non- culturally specific diagnostic inventory for assessing the whole or part of the educational environment of health profession institutes, medical schools, and allied sciences schools that shows high reliability in a range of cultural contexts [1, 6, 7, 10, 12- 16]. DREEM has been used widely to introduce useful diagnostic information about the current climate in schools in developing and developed countries, to guide the remedial plan, to address identified weaknesses of climate or to reinforce the positive aspects [1]. It also provides a clear indication of the priorities for reform of the curriculum and basis to design intervention strategies [5, 16]. The DREEM was developed by Roff and McAleer (1997) at the Centre of Medical Education, University of Dundee, using a Delphi panel of nearly one hundred medical educators from different countries all over the world. The DREEM was validated in many research projects for Master and Doctoral degrees and has been translated into many languages without affecting its reliability. It measures quantitative and qualitative data [1, 10].

The DREEM contains 50 items measuring the educational environment in five major sub-scales; Students' Perceptions of Learning (SPL) (12 items), Students' Perceptions of Teachers (SPT) (11 items), Students' Academic Self-Perceptions (SASP) (8 items), Students' Perceptions of Atmosphere (SPA) (12 items), and Students' Social Self-Perceptions (SSSP) (7 items). Students are asked to read each statement very carefully, then respond using a 5-point Likert-type scale ranging from strongly agree to strongly disagree. It could be administered and completed in a short period of time. It has a maximum score of 200, which indicates that students perceive their learning environment as an ideal educational climate [1, 10].

Physical Therapy (PT) program is one of the programs offered by College of Applied Medical Sciences (CAMS) at King Saud University (KSU), Riyadh, Saudi Arabia. The CAMS is located in two separate campuses; one for the male students and one for the female students. At the end of the first semester of the academic year 2013-2014 the female students' campus had moved to a new campus. The new campus is hugely larger than the old one. It is supported by remarkable infrastructure, learning resources and facilities that are non-comparable with the old campus. These tremendous changes inspired the current study. The primary aim of this study is to investigate the effect of a new campus on the PT students' perceptions of the educational environment. The secondary aim is to investigate the effect of educational level and instructional mode on the PT students' perceptions of the educational environment.

Method

The target population of this study was the students of Physical Therapy Program, College of Applied Medical Science, King Saud University, Riyadh, Saudi Arabia during the academic year 2013-2014. The college is composed of 9 educational levels; 2 of them are university core levels and the students join the specific program from level 3. Levels are offered according to the students' registration. During the academic year 2013-2014 levels 5-9 were offered for the PT program with total 120 students. Convenience sampling was employed to collect data and student who agreed to participate in the study and who completed the DREEM inventory was included. Eligible students were 71 from educational levels 7, 8, and 9. The 50- item DREEM inventory was used to collect the students' perceptions regarding the educational environment. It

was administered on the same day three weeks before the final exams of first semester while the students were in the old campus and three weeks before the final exam of the second semester where the students were in the new campus. Before administration, the researcher used Rania's definition of educational environment (The educational environment covers everything happening in the institutions) [1] to develop a common operational definition with the students for educational environment. The researcher also explained to the students the importance of this study and how to answer the inventory as it reflects their perceptions toward the current educational environment. The researcher assured the confidentiality and anonymity for the students and encouraged them to complete the inventory with highest possible objectivity. The researcher asked the students to read each statement very carefully, then respond using a 5-point Likert-type scale ranging from strongly agree to strongly disagree and the researcher was available to answer students' questions during the inventory administration. The researcher also encouraged the students to record any further comments concerning the factors that affect the educational environment.

The researcher used the guide developed by McAleer and Roff to score and interpret the inventory [17- 18]. The following score values were used; strongly agree = 4, agree = 3, unsure = 2, disagree = 1, and strongly disagree = 0. Nine of the 50-item (item 4, 8, 9, 17, 25, 35, 39, 48, and 50) is negative statement and the score value was reversed; strongly agree = 0, agree = 1, unsure = 2, disagree = 3, and strongly disagree = 4. The researcher calculated the mean score of items, sub-scales and total scale and interpreted accordingly. Items with an individual mean score of less than 2 indicate the need for further examination.

The below table shows the DREEM total and sub-scales mean score interpretation [17, 18].

The researcher generated operational definition for the instruction modes. Mostly traditional instructional mode means that the instructors use power point presentations only. When the instructors use power point presentations with hyperlinked scientific videos, worksheets, etc and apply regular enter classroom activities as brainstorming, problem solving exercises, group discussion, individual or group quizzes, etc the mostly interactive instructional mode was considered. The combined instructional model describes the instructors application of traditional and interactive instructional mode alternatively during their lectures. The researcher coded the instructional modes. Mostly traditional instructional mode coded with the number 1, combined instructional mode 2, and mostly interactive instructional mode 3. Campus location was also coded; old campus as 1 and new campus as 2.

Data analysis

Using version 21 of SPSS, data were analyzed as means and standard deviations of total scale, sub-scales, and item scores. The independent t-test was used to compare the total scale and sub-scale mean scores between old and new campuses. One-way ANOVA with Tukey post hoc test was used to compare the total scale and sub-scale mean scores among 3 program educational levels (level 7, 8, and 9) and the 3 instructional modes (mostly traditional, combined, mostly interactive). Two-tailed Spearman correlation was used to study the relationship between campus, students' educational level, and instructional mode and the students' perception of the educational environment (Total scale and sub-scales). P value equal or less than 0.05 was considered significant.

Table 1. Guide for interpretation of DREEM total scale and sub-scales mean scores.	
Students' Perception of Learning	
Items	1,7,13,16,20,22,24,25, 38,44,47,48
Maximum Score	48
Very poor	0-12
Teaching is viewed negatively	13-24
A more positive perception	25-36
Teaching highly thought of	37-48
Students' Perception of Teachers	
Items	2, 6, 8, 9, 18, 29, 32, 37, 39, 40, 50
Maximum Score	44
Abysmal	0-11
In need of some retraining	12-22
Moving in the right direction	23-33
Model teachers	34-44
Students' Academic- Self Perception	
Items	5, 10, 21, 26, 27, 31, 41, 45
Maximum Score	32
Feeling of total failure	0-8
Many negative aspects	9-16
Feeling more on the positive side	17-24
Confident	25-32
Students' Perception of Atmosphere	
Items	11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43, 49
Maximum Score	48
A terrible environment	0-12
There are many issues which need changing	13-24
A more positive atmosphere	25-36
A good feeling overall	37-48
Students' Social-Self Perception	
Items	3, 4, 14, 15, 19, 28, 46
Maximum Score	28
Miserable	0-7
Not a nice place	8-14
Not too bad	15-21
Very good socially	22-28
Total	
Items	1-50
Maximum Score	200
Very poor	0-50
Plenty of problems	51 – 100
More positive than negative	101 – 150
Excellent	151- 200

Results

The mean score of total scale of DREEM inventory as perceived by the PT program students at KSU was 135.6 interpreting more positive students' perception of the educational environment. The students' perception to the sub-scales was also in the positive direction as shown in table 2. The percentages from the maximum scores for the sub-scales in descending order were as follows; 69.4% for the SASP, 68.4% for SPT, 68.1% for the SPL, 67.5 for SSSP, and 66.3% for SPA. The percentage from the maximum scores for the total scale was 67.8%.

The items of highest mean score were the 2nd item (The course organizers are knowledgeable, 3.46), the 15th item (I have good friends on this course, 3.42), the 19th item (My social life is good, 3.39), the 37th item (The course organizers give clear examples, 3.35), the 10th item (I am confident about my passing this year, 3.30), the 17th item (Cheating is not a problem on this course, 3.27), the 40th item (The course organizers are well prepared for their teaching sessions, 3.24), the 38th item (I am clear about the learning objectives of the course, 3.18), the 20th item (The teaching is well focused, 3.17), the 1st item (I am encouraged to participate during teaching sessions, 3.07), and the 49th item (I feel able to ask the questions I want, 3.06). The items of lowest mean score were the 49th item (The teaching is too teacher centered, 1.55), the 9th item (The course organizers are authoritarian, 1.86), and the 25th item (The teaching over emphasizes factual learning, 1.92).

The students' perception of educational environment in the new campus was significantly higher than their perception to it in the old campus. This phenomenon is true for the total scale mean score as well as the 5 sub-scales mean scores (Table 3).

Students of level 8 showed the highest perception to the physical therapy educational environment, followed by the students of level 7, while students of level 9 showed the lowest perception. The difference between students' perception among different educational levels was significant at the total scale and the sub-scales as well (Table 4). Post hoc test (Table 5) indicated that the differences of students' perception were significant between all levels of the total scale mean score.

Students who taught courses through mostly interactive instructional mode had the highest mean scores for the educational environment total scale and the 5 sub-scales. The lowest mean scores were for students who taught courses through combined instructional mode. While students who showed the intermediate mean scores were the students who taught through mostly traditional instructional mode. The differences in students' perception with different instructional mode were significant for the total scale and sub-scales (Table 6). Post hoc test (Table 7) indicated that the differences of students' perception were significant between all instructional modes for the total scale mean score.

Table 8 shows that there were significant relationships between the total scale mean score and the campus ($r_s = 0.474$, $P = 0.0001$), educational level ($r_s = -0.267$, $P = 0.025$), and instructional mode ($r_s = 0.277$, $P = 0.019$). The sub-scales showed different significant relationships with the campus, educational level, and instructional modes.

Discussion

Studying the environment of educational program is beneficial and has a great role to play in improving and developing the program. Students are the main stakeholder and the essential partner in the educational process. Their perception regarding the educational environment is crucially important.

Students' perception of the new campus

The findings of this study indicated that the students of Physical Therapy Program at College of Applied Medical Sciences, King Saud University, Saudi Arabia perceived the educational environment more positive than negative. The mean of the scale score of the DREEM inventory was 135.6. The new campus with its generous infrastructure and advanced educational facilities positively influenced the students' perception regarding the educational environment. Their mean score for total scale had increased from 127.71 for the old campus to 152.13 for the new campus. Statistically this phenomenon was proved with the positive relationship between the campus and students' perception of the educational environment. It is to be noted that positive impact of new campus on the students' perception of the educational environment is also applicable to all the sub-scales of the DREEM inventory. The availability of audio-visual facilities, well equipped labs, library, large comfort classes with internet access enhanced the learning process and gave better chance for the teachers to improve their teaching. This is documented with the increased the mean scores of the sub-scales of students' perception of learning and students' perception of teachers from the old to the new campus.

Moreover, the supporting departments as students' registration and student affairs got privilege from the new campus facilities. That is why the students perceived the atmosphere as a more positive one. The presence of prayer areas, recreational facilities as billiards, and different nice cafes with many resting areas appeared to be suitable for the students. These facilities allowed the students to spend more comfortable, convenient time during the school day and helped them to enjoy their educational day and foster their social life. This explains why the mean score of the students' social self-perception sub-scale had increased with the new campus. With the new campus the students appeared more satisfied and more confident about their academia as they perceived higher mean score for the students' academic self-perception sub-scale.

In comparison with other Saudi schools and schools in the Gulf region, the PT program at KSU showed a higher mean score for the total scale of DREEM inventory. It is higher than College of Medicine at KSU which had 89.9 mean score in Al-Ayed study [13] and 94.70 mean score in Al-Faris study [19]. Also, it is higher than the 112 mean score of the College of Medicine at Qassim University, SA [4], 102 mean score of College of Medicine at King Abdul Aziz University, SA [12], 107 mean score of Faculty of Medicine & Medical Sciences at Umm Al-Qura University, SA [1], and 112.9 mean score of College of Medicine at King Khalid University, SA [20]. Furthermore, it is higher than the mean score of total scale of DREEM inventory in some Gulf region universities as colleges of Medicine, Dentistry and Nursing at UEA University (125), UAE [21]. PT program at KSU University showed higher mean score even with its old campus. Inclusion of only female students in the current study could be hypothesized to be the cause of this higher mean score. But this gender-based hypothesis would be rejected for 2 reasons. Firstly, the study of Sarah in College of Medicine at King Khalid University included

100 female students in educational levels very similar to the current study. Instead, her findings showed a lower mean score than the current study [20]. Secondly, the effect of gender as a factor that might affect the students' perception of the educational environment is contradictory. Study of Al-Mohaimeed (2013) showed that there were no significant differences of perceptions between genders [4]. Study of Al-Zidgall (1999) agreed on gender differences, but for the advantage of male students, i.e. male students perceive their learning environment more positively than female students [22]. So if this is the case, the studies with male students would have higher mean scores which are not actually. The difference in specialty of the programs could be the acceptable explanation for score differences. All the above mentioned studies conducted at medical school programs while current study was in PT program. Program with close specialty as the Institute of Health Sciences, Oman showed a similar mean score (127) to the score of a PT program old campus [22]. The PT new campus higher mean score (152.13) allowed it to compete with medical school in the Western developed Universities at the College of Medicine, University of East Anglia (143), UK [23] but it has not reached yet to the mean score of close program in these developed universities as Canadian Memorial Chiropractic College, Toronto, Canada with its mean score of 186 [24].

Students' perception to the educational level and instructional mode

Results revealed significant relationships between the educational environment and the instructional mode as well as the educational level. These relationships were applied to the DREEM mean score of the total scale and for the sub-scales. Previous studies had varied results regarding the relationship between the educational level and educational environment. Some studies indicated no significant differences in an educational environment with educational level as those conducted in Qassim University [4] and King Khaled University [20] Saudi Arabia, UAE University in UAE, and Arabian Gulf University in Bahrain [21]. Another study showed that the students' educational level affected their perception of the educational environment as in King Faisal University thus the advanced students have more positive attitudes toward the educational environment [21]. Meanwhile the reverse was found in Umm Al-Qura University, the highest DREEM mean score was achieved by the first year students, while the lowest DREEM mean score was achieved by the fourth year students [1].

Interestingly, the current study results indicated new phenomenon regarding the relation between the educational level and educational environment. The significant difference was for the advantage of level 8 which had the highest mean total scale and sub-scales scores followed by level 7. Level 9 had the lowest mean scores. There was a significant difference that did not follow either descending or ascending order, i.e. neither the lower the level the higher the scores nor the opposite the higher the level the higher the scores. The relationship between the instructional mode and educational environment was significant with mostly interactive showing the highest mean scores of total scale and sub-scale scores followed by most traditional then level combined instructional mode. This relationship is identical to the relationship between educational level and educational environment and with a thorough and comprehensive reading of results we can safely provide explanation to this phenomenon. Level 8 students were taught through mostly interactive instructional mode.

Giving chance to the students to actively participate during class time and become active members in the educational process affected their perceptions of the educational environment. So level 8 students who were at the same time taught with mostly interactive instructional mode perceived the highest score for educational environment. That is why items like "I am clear about the learning objectives of the course", "I am encouraged to participate during teaching sessions", and "I feel able to ask the questions I want" were within the list of items with highest scores.

It is observed that students dislike the mostly traditional instructional mode and they showed that with lower scores of level 7 students who are the students taught through traditional instructional mode. Items with lowest score were "The teaching is too teacher centered" "The course organizers are authoritarian", and "The teaching over emphasized factual learning". These items indicate that students dislike the traditional instructional mode in which the teaching is mainly teacher centered and in which the course organizer become easily authoritarian. Opposite to the interactive instructional mode in which the higher intellectual skills of the students can be tackled through class activities as a problem solving exercise, case scenario discussion, and brainstorming, the traditional instructional mode may draft the teaching toward more factual learning.

Although the students disliked the traditional mode, but they disliked more the combined instructional mode. This is proved with the lowest scores achieved by students of level 9 who at the same time were taught with combined instructional mode. In combined instructional mode some lectures were taught with interactive instructional mode and others were taught with traditional mode. This may cause discomfort and even confusing to the students. They might become not sure about their exact role during the class time, are they suppose to interact and participate or just listen passively. Are their questions and comments are welcomed and enrich the learning process or are they wasting the class time? These unanswered queries might raise the students' irritation and caused the reduction of their perception of the educational environment.

Limitation of the study

Although the researcher, encouraged the students to add any further open ended comments to the inventory, only 2 students did that. Limitation of students' comments hindered the researcher to apply qualitative analysis. The study was limited to the quantitative analysis.

Conclusion

The new campus of Physical Therapy Program, King Saud University and its remarkable facilities positively affected the students' perception of the educational environment as measured by DREEM inventory. Mostly interactive instructional mode was preferred by the students with significant highest mean scores of the total scale and sub-scales of the inventory. The students' educational level also showed a significant relationship with their perception of the educational environment.

Practice Points

- Administrators and funders of educational institutions are recommended to provide care to the institutions' infrastructure and educational facilities. Qualified infrastructure and educational facilities affect positively the students' perception of the educational environment.
- Students of Physical Therapy Program prefer the mostly interactive instructional mode. Teachers and instructors are advised to use these types of instructional mode.
- In depth and more comprehensive interpretation should be applied when DREEM inventory is used to study the students' perception of educational environment.

Notes on Contributors

Salwa B. El-Sobkey honored PhD in Physical Therapy for cardiopulmonary disorders and Geriatrics from Cairo University, Egypt and was working for King Saud University for 6 years. She had Diploma of Health Professions Education from Suez Canal University in 2013 and Joint Master of Health Professions Education in 2015, Suez Canal University, Egypt and Maastricht University, Netherlands

Declaration of Interest

The author reports no declarations of interest.

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Table 2. Students' perception mean scores of educational environment at Physical Therapy Program, King Saud University, Saudi Arabia

Items/ Sub-Scales/ Total Scale	N	Mean	SD	Interpretation
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Students Perception of Learning (SPL)	71	32.7	6.20	Teaching highly thought of
1: I am encouraged to participate during teaching sessions	71	3.1	0.98	*
7: The teaching is often stimulating	71	2.9	0.88	
13: The teaching is registrar centered	71	2.7	0.94	
16: The teaching helps to develop my competence	71	2.9	0.89	
20: The teaching is well focused	71	3.2	0.79	*
22: The teaching helps to develop my confidence	71	2.8	0.89	
24: The teaching time is put to good use	71	3.0	0.85	
25: The teaching over emphasizes factual learning	71	1.9	1.11	-
38: I am clear about the learning objectives of the course	71	3.2	0.83	*
44: The teaching encourages me to be an active learner	71	2.8	0.93	
47: Long term learning is emphasized over short term learning	71	2.8	0.75	
48: The teaching is too teacher centered	71	1.6	0.97	-
Students' Perception of Teachers	71	30.1	5.10	Moving in the right direction
2: The course organizers are knowledgeable	71	3.5	0.69	*
6: The course organizers espouse a patient centered approach to consulting	71	2.9	0.75	
8: The course organizers ridicule the registrars	71	2.2	1.12	
9: The course organizers are authoritarian	71	1.9	1.22	-
18: The course organizers have good communication skills with patients	71	2.8	0.81	
29: The course organizers are good at providing feedback to registrars	71	2.8	0.83	
32: The course organizers provide constructive criticism here	71	2.7	0.86	
37: The course organizers give clear examples	71	3.4	0.61	*
39: The course organizers get angry in teaching sessions	71	2.4	1.18	
40: The course organizers are well prepared for their teaching sessions	71	3.2	0.71	*
50: The registrar irritate the course organizers	71	2.4	0.99	
Students' Academic- Self Perception	71	22.2	4.30	Feeling more on the positive side
5: Learning strategies which worked for me before continue to work for me now	71	2.8	0.95	
10: I am confident about my passing this year	71	3.3	0.68	*

21: I feel I am being well prepared for my profession	71	2.7	0.97	
26: Last years work has been a good preparation for this years work	71	2.6	0.95	
27: I am able to memorize all I need	71	2.5	0.95	
31: I have learnt a lot about empathy in my profession	71	2.8	0.81	
41: My problem solving skills are being well developed here	71	2.7	0.83	
45: Much of what I have to learn seems relevant to a career in healthcare	71	2.8	0.74	
Students' Perception of Atmosphere	71	31.8	7.80	A more positive atmosphere
11: The atmosphere is relaxing during consultation teaching	71	2.5	1.12	
12: This course is well timetabled	71	2.4	1.18	
17: Cheating is not a problem on this course	71	3.3	1.06	*
23: The atmosphere is relaxing during lectures	71	2.6	1.04	
30: There are opportunities for me to develop interpersonal skills	71	2.9	0.80	
33: I feel comfortable in teaching sessions socially	71	2.9	0.96	
34: The atmosphere is relaxed during seminars/ tutorials	71	2.6	0.98	
35: I find the experience disappointing	71	2.1	1.15	
36: I am able to concentrate well	71	2.8	1.03	
42: The enjoyment outweighs the stress of the course	71	2.4	1.05	
43: The atmosphere motivates me as a learner	71	2.3	1.11	
49: I feel able to ask the questions I want	71	3.1	0.91	*
Students' Social-Self Perception	71	18.9	3.80	Not too bad
3: There is a good support system for registrars who get stressed	71	2.3	0.90	
4: I am too tired to enjoy the course	71	2.3	1.09	
14: I am rarely board on this course	71	2.4	1.19	
15: I have good friends on this course	71	3.4	0.91	*
19: My social life is good	71	3.4	0.64	*
28: I seldom feel lonely	71	2.4	1.15	
46: My accommodation is pleasant	71	2.7	0.68	
Total Scale	71	135.6	24.30	More positive than negative

(*) = Item with mean score > 3, (-) = Item with mean score < 2.

Table 3. Comparison between the students' perception mean scores of educational environment in the new and old campuses of physical therapy program at King Saud University, Saudi Arabia.

Total Scale/ Sub-Scales	Campuses	N	Mean	SD	P
Total Scale	Old	48	127.7	20.92	0.0001

	New	23	152.1	22.81	
Students Perception of Learning	Old	48	30.8	5.70	0.0001
	New	23	36.6	5.32	
Students Perception of Teachers	Old	48	28.2	3.94	0.0001
	New	23	34.1	5.05	
Students Academic Self Perception	Old	48	21.4	4.14	0.024
	New	23	23.8	4.28	
Students Perception of Atmosphere	Old	48	29.3	7.14	0.0001
	New	23	37.0	6.34	
Students Social Self Perception	Old	48	18.1	3.32	0.010
	New	23	20.6	4.35	

Table 4. Comparison of students' perception means scores of educational environment between the different educational levels at physical therapy program, King Saud University, Saudi Arabia.

Scale/ Sub-Scales	Level	N	Mean	SD	P
Total Scale	7	23	135.5	16.76	0.0001
	8	23	152.1	22.81	
	9	25	120.5	22.07	

	Total	71	135.6	24.29	
Students Perception of Learning	7	23	33.2	4.39	0.0001
	8	23	36.6	5.32	
	9	25	28.5	5.90	
	Total	71	32.7	6.17	
Students Perception of Teachers	7	23	28.2	3.85	0.0001
	8	23	34.1	5.05	
	9	25	28.2	4.11	
	Total	71	30.1	5.12	
Students Academic Self Perception	7	23	23.3	3.35	0.001
	8	23	23.8	4.28	
	9	25	19.6	4.10	
	Total	71	22.2	4.32	
Students Perception of Atmosphere	7	23	31.6	6.82	0.0001
	8	23	37.0	6.34	
	9	25	27.2	6.89	
	Total	71	31.8	7.76	
Students Social Self Perception	7	23	19.3	2.60	0.004
	8	23	20.6	4.35	
	9	25	17.0	3.58	
	Total	71	18.9	3.83	

Table 5. Tukey post hoc test for the students' perception mean scores of educational environment among different educational levels at physical therapy program, King Saud University, Saudi Arabia.

Scale/ Sub-Scales	(I) Level	(J) Level	Mean Difference (I-J)	Std. Error	P
Total Scale	7	8	-16.61 [*]	6.12	0.023
		9	15.00 [*]	5.99	0.039
	8	9	31.61 [*]	5.99	0.0001
Students Perception of Learning	7	8	-3.35	1.55	0.086

		9	4.70*	1.52	0.008
	8	9	8.05*	1.52	0.0001
Students perception of Teachers	7	8	-5.91*	1.29	0.0001
		9	0.01	1.26	1.000
	8	9	5.93*	1.26	0.0001
Students Academic Self Perception	7	8	-0.57	1.16	0.878
		9	3.62*	1.14	0.006
	8	9	4.19*	1.14	0.001
Students Perception of Atmosphere	7	8	-5.48*	1.97	0.019
		9	4.41	1.93	0.066
	8	9	9.88*	1.93	0.0001
Students Social Self Perception	7	8	-1.30	1.06	0.436
		9	2.26	1.03	0.080
	8	9	3.57*	1.03	0.003

* The mean difference is significant at the 0.05 level

Table 6. Comparison of the students' perception means scores of educational environment between the different instructional modes at physical therapy program, King Saud University, Saudi Arabia.

Scale/ Sub-scales	Instructional Mode	N	Mean	SD	P
Total Scale	Mostly Traditional	23	135.5	16.76	0.0001
	Combined	25	120.5	22.07	
	Mostly Interactive	23	152.1	22.81	
	Total	71	135.6	24.29	
Students Perception of Learning	Mostly Traditional	23	33.2	4.39	0.0001
	Combined	25	28.5	5.90	
	Mostly Interactive	23	36.6	5.32	

	Total	71	32.7	6.17	
Students Perception Of Teachers	Mostly Traditional	23	28.2	3.85	0.0001
	Combined	25	28.2	4.11	
	Mostly Interactive	23	34.1	5.05	
	Total	71	30.1	5.12	
Students Academic Self Perception	Mostly Traditional	23	23.3	3.35	0.001
	Combined	25	19.6	4.10	
	Mostly Interactive	23	23.8	4.28	
	Total	71	22.2	4.32	
Students Perception of Atmosphere	Mostly Traditional	23	31.6	6.82	0.0001
	Combined	25	27.2	6.89	
	Mostly Interactive	23	37.0	6.34	
	Total	71	31.8	7.76	
Students Social Self Perception	Mostly Traditional	23	19.3	2.60	0.004
	Combined	25	17.0	3.58	
	Mostly Interactive	23	20.6	4.35	
	Total	71	18.9	3.83	

Table 7. Tukey post hoc test for the students' perception mean scores of educational environment among different instructional modes at physical therapy program, King Saud University, Saudi Arabia.

Scale/ sub-Scale	(I) Instructional Mode	(J) Instructional Mode	Mean Difference (I-J)	Std. Error	P
Total Scale	Mostly Traditional	Combined	15.00 [*]	6.00	0.039
		Mostly Interactive	-16.61 [*]	6.12	0.023
	Combined	Mostly Interactive	-31.61 [*]	6.00	0.0001
Students Perception of Learning	Mostly Traditional	Combined	4.68 [*]	1.52	0.008
		Mostly Interactive	-3.35	1.55	0.086
	Combined	Mostly Interactive	-8.05 [*]	1.52	0.0001
		Mostly Traditional	-4.70 [*]	1.52	0.008
Students	Mostly Traditional	Combined	0.01	1.26	1.000

Perception of Teachers	Combined	Mostly Interactive	-5.91 [*]	1.29	0.0001
		Mostly Interactive	-5.93 [*]	1.26	0.0001
Students Academic Self Perception	Mostly Traditional	Combined	3.62 [*]	1.14	0.006
		Mostly Interactive	-0.57	1.16	0.878
	Combined	Mostly Interactive	-4.19 [*]	1.14	0.001
Students Perception of Atmosphere	Mostly Traditional	Combined	4.41	1.93	0.066
		Mostly Interactive	-5.48 [*]	1.97	0.019
	Combined	Mostly Interactive	-9.88 [*]	1.93	0.0001
Students Social Self Perception	Mostly Traditional	Combined	2.26	1.03	0.080
		Mostly Interactive	-1.30	1.06	0.436
	Combined	Mostly Interactive	-3.57 [*]	1.03	0.003

* The mean difference is significant at the 0.05 level

Table 8. Relationship between the students' perception to educational environment and their campus, level, and instructional modes at physical therapy program, King Saud University, Saudi Arabia.

Scale/ Sub-Scale	Variables	N	r _s	P
Total Scale	Campus		0.474 ^{**}	0.0001
	Educational Level	71	-0.267 [*]	0.025
	Instructional Mode		0.277 [*]	0.019
Students Perception of Learning	Campus		0.442 ^{**}	0.0001
	Educational Level	71	-0.325 ^{**}	0.006
	Instructional Mode		0.220	0.066
Students Perception of Teachers	Campus		0.545 ^{**}	0.0001
	Level	71	-0.014	0.907
	Instructional Mode		0.468 ^{**}	0.0001
Students Academic Self Perception	Campus	71	0.268 [*]	0.024

	Educational Level		-0.353**	0.003
	Instructional Mode		0.053	0.660
Students Perception of Atmosphere	Campus		0.472**	0.0001
	Educational Level	71	-0.246*	0.039
	Instructional Mode		0.286*	0.016
Students Social Self Perception	Campus		0.305**	0.010
	Educational Level	71	-0.252*	0.034
	Instructional Mode		0.138	0.251

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)