



Experimental Research

DREEM; dreams of the educational environment as its effect on education result of 11 Medical Faculties of Turkey

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ABSTRACT

Educational environment has an extremely important role on students' learning and educational activity. The DREEM (Dundee Ready Educational Environment Measure) questionnaire is an important tool for assessing educational environment. This study used qualitative analysis with the DREEM questionnaire, to evaluate the educational environment during Medical Students' Congress. The DREEM questionnaire was administered to 204 undergraduate students from 11 different medical faculties all over Turkey. 149 students were from Ondokuz Mayıs University Medical Faculty (OMU) and remaining 55 students were from 10 different medical faculties. Total 265 students attended to congress and 204 (76.98%) of them answered DREEM questionnaire. Two items with low scores on the DREEM questionnaire were identified as in need of rehabilitation. All results grouped in two as OMU and NON-OMU Group. In this study, DREEM questionnaire administered to undergraduate medical students of OMU (n = 149) and NON-OMU (n = 55) and the scores were compared. And then all groups' data accepted as overall scores of Medical Faculty in Turkey. In our study revealed that NON-OMU students perceived the learning environment more positively than OMU students. But in overall both group tends to give positive score with some questionable areas.

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1. Introduction

Many researchers focused on the role of learning environment in undergraduate medical education and investigative perceptions of educational environment in the recent years. Educational environment is one of the most important determining factors of an effective curriculum (Bassaw et al., 2003). The quality of the educational environment reflects the quality of the curriculum (Genn, 2001).

The Dundee Ready Education Environment Measure (DREEM) is an instrument designed for measurement of educational climate specifically for undergraduate medical education (Roff, 1997). DREEM questionnaire has also been used to compare different medical schools or faculty (Roff et al., 2001; Al-Hazimi et al., 2004). Students' perception of the educational environment has great effects on their responses to learning processes. Even changing the physical structure of a classroom is one way to alter the environment of a classroom and influence on students' perception.

There is growing consensus of the importance

of educational environment in student learning. Students' perception of the environment within which they study has been shown to have a significant impact on their behaviour, academic progress and sense of well-being (Pimparyon, 2000; Genn, 2001; Audin, 2003). Various methodologies have been utilised to investigate educational climate. Studies about educational climate dated back to 1970s. In 1970, Arnold Rothman and colleagues from University of Toronto studied about Learning Environment Questionnaire (LEQ). It was a 65 item survey with scales for goal direction, academic enthusiasm, internal and external pressures on students, student interaction and authoritarianism in the medical school. 8 years later from this research Marshall adapted over half of Rothman's 55 items in the Medical School Learning Environment Survey (MSLES). And finally, DREEM questionnaire introduced in late 1990s.

The DREEM questionnaire is more specific on medical and healthcare-related programs. This questionnaire applied to a number of undergraduate medical educational centres worldwide (Roff, 2005). DREEM is valuable in

point out areas of concern by students. They don't give any details about the underlying reasons for pointed out problems. There are some ideologies that have proven helpful to learning. The setting in which the learning takes place is one often-overlooked aspect that can help students absorb information and ideas. This includes several aspects including educational climate. There have been many studies conducted about the learning process and how to best create an effective environment for the student. The DREEM questionnaire is an ideal chance for exclaim their opinions.

2. Methods

DREEM has been widely used as a tool to collect information about the educational environment in many institutions (GMC, 1993; Genn, 2001, Bassaw, 2003).

It was originally developed at Dundee and released as AMEE Medical Education Guide No.23 by Genn in 2001 and has been accepted as an international instrument for assessing the educational environment.

DREEM consists a 50 item inventory each of the 50 items is scored on a 5-point scale, where 4 = Strongly agree, 3 = Agree, 2 = Unsure, 1 = Disagree and 0 = Strongly disagree. Reverse scoring is required for items 4, 8, 9, 17, 25, 35, 39, 48 and 50. Thus, higher scores indicate a more positive evaluation. Depending on DREEM questionnaire student perception on educational environment items subdivided of 5 subscales. This subscales gives opportunity to researcher to specify weaknesses or strengths of program/course. Roff et al., (1997) indicates that individual items with a mean score of 3 and above reflect a positive educational climate and are considered areas of strength for a school; and items with a mean score below 2 are considered areas of weaknesses for a medical faculty. Items with a mean score between 2 and 3 reflect areas that are neither strengths nor weaknesses but identify areas that could be enhanced.

5 separate elements of the DREEM questionnaire and their maximum scores are :

- Students' Perceptions of Learning: 12 items (items 1, 7, 13, 16, 20, 22, 24, 25, 38, 44, 47 and 48) (maximum score 48)
- Students' Perceptions of Teachers: 11 items (items 2, 6, 8, 9, 18, 29, 32, 37, 39, 40 and 50) (maximum score 44)
- Students' Perceptions of their Academic Skills: 8 items (items 5, 10, 21, 26, 27, 31, 41 and 45) (maximum score 32)
- Students' Perceptions of the Learning Atmosphere: 12 items (items 11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43 and 49) (maximum score 48)
- Students' Perceptions of the Social Environment: 7 items (items 3, 4, 14, 15, 19, 28 and 46) (maximum score 28)

The questionnaire was administered to students in all six years of the undergraduate medical education. The questionnaire was available in paper format. Students were made aware of the aims of the study and the importance of high levels of participation, by face-to-face communication

at foyer of the congress centre and poster announcements over the campus.

The DREEM questionnaire was administered to 204 students when they were attending 3rd Medical Students Congress in March 2010. Total 265 students attended to congress and 204 (79.98%) of them answered DREEM questionnaire. They consisted of 149 from Ondokuz Mayıs University Medical Faculty and 55 students from 10 different Medical Faculties of Turkey. The questionnaire was administered during the congress which Ondokuz Mayıs University was organizing centre of 3rd Medical Students Congress.

3. Results

A total of 204 students completed the questionnaire (OMU=149, Non-OMU=55) giving an overall response rate of 79.98%. Among respondents, there were 131 (64.22%) males and 73 (35.78%) females participants.

Table 1 shows the DREEM subscale scores for OMU Students and Non-OMU students. The mean total DREEM score was found to be 104.05/200 for OMU students and 115.55/200 for Non-OMU students. Overall total DREEM score for a group of 11 medical faculties was 107.15/200.

Responses to all items are shown in Table 1 and highlighted items showed an overall response across the medical faculty of below 2, which was accepted as negative. OMU students scored less than 2 for 21 items (3, 4, 5, 7, 12, 17, 20, 21, 22, 23, 24, 25, 26, 27, 32, 34, 36, 38, 40, 42, 43, & 45) and above 3 for 2 items (15, 46). Non-OMU students scored less than 2 for 8 items (4, 24, 25, 42, 43, 44, 48, and 50) and above 3 for 3 items (10, 15, and 46). In total group there were 18 negative statements (4, 12, 20, 21, 23, 24, 25, 26, 27, 34, 36, 38, 40, 42, 43, 44, 45 & 50). The worst score of OMU Group was 1.48 for "The teaching time is put to good use". The worst score of Non-OMU Group was for "The teaching is too teacher centred". 5 items are scored negatively by both groups which items are 4, 24, 25, 42 and 43.

Table 2. DREEM subscale scores for all groups

	Turkey		
	OMU	Non-OMU	(11 Med. Fac.)
Perception of learning	23,93	25,45	24,34
Perception of teachers	23,17	27,33	24,29
Academic self perception	17,01	19,13	17,58
Perception of atmosphere	23,50	26,22	24,23
Social Self perception	16,43	17,42	16,70
Overall	104,05	115,55	107,15

Table 2 shows all the subscale scores for all groups. OMU results for the subscale scores for the actual DREEM indicated that students' perception of learning was

Table 1. Mean DREEM scores per item and Medical Faculty Groups.

QUESTIONS	OMU Students	Non-OMU	All Groups	P value
1. I am encouraged to participate during teaching sessions	2.00	2.40	2.11	0.012*
2. The program organisers are knowledgeable	2.42	2.64	2.48	0.164
3. There is a good support system for studentss who get stressed	1.80	2.53	2.00	0.000*
4. I am too tired to enjoy the course	1.60	1.67	1.62	0.824
5. Learning strategies which worked for me before continue to work for me now	2.46	2.53	2.48	0.542
6. The course organisers espouse a patient centred approach to consulting	2.48	2.64	2.52	0.202
7. The teaching is often stimulating	1.99	2.15	2.03	0.252
8. The teachers ridicule the registrars	2.01	2.51	2.14	0.002*
9. The teachers are authoritarian	2.05	2.24	2.10	0.141
10. I am confident about my passing this year	2.60	3.00	2.71	0.012*
11. The atmosphere is relaxed during consultation/clinic teaching	2.12	2.27	2.16	0.366
12. This program is well timetabled	1.85	2.35	1.99	0.011*
13. The teaching is student centred	2.54	2.04	2.40	0.002*
14. I am rarely bored on this program	2.13	2.27	2.17	0.489
15. I have good friends on this program	3.06	3.42	3.16	0.000*
16. The teaching helps to develop my competence	2.05	2.49	2.17	0.005*
17. Cheating is a problem on this program	1.90	2.35	2.02	0.027*
18. The teachers have good communication skills with patients	2.31	2.67	2.41	0.001*
19. My social life is good	2.40	2.18	2.34	0.314
20. The teaching is well focused	1.79	2.25	1.91	0.007*
21. I feel I am being well prepared for my profession	1.92	2.11	1.97	0.174
22. The teaching helps to develop my confidence	1.94	2.31	2.04	0.015*
23. The atmosphere is relaxed during lectures	1.87	2.09	1.93	0.230
24. The teaching time is put to good use	1.48	1.93	1.60	0.015*
25. The teaching over emphasizes factual learning	1.99	1.91	1.97	0.684
26. Last year's work has been a good preparation for this year's work	1.84	2.33	1.97	0.001*
27. I am able to memorise all I need	1.83	2.22	1.94	0.004*
28. I seldom feel lonely	2.38	2.29	2.36	0.548
29. The teachers are good at providing feedback to students	2.01	2.42	2.12	0.015*
30. There are opportunities for me to develop interpersonal skills	2.44	2.51	2.46	0.791
31. I have learnt a lot about empathy in my profession	2.33	2.31	2.32	0.873
32. The teachers provide constructive criticism here	1.95	2.35	2.06	0.042*
33. I feel comfortable in class socially	2.19	2.51	2.27	0.033*
34. The atmosphere is relaxed during seminars / tutorials	1.70	2.35	1.87	0.000*
35. I find the experience disappointing	2.23	2.24	2.24	0.947
36. I am able to concentrate well	1.79	2.04	1.86	0.114*
37. The teachers give clear examples	2.03	2.51	2.16	0.003*
38. I am clear about the learning objectives of the program	1.71	2.16	1.83	0.004*
39. The teachers get angry in teaching sessions	2.06	2.25	2.11	0.297
40. The teachers are well prepared for their teaching sessions	1.62	2.38	1.82	0.000*
41. My problem solving skills are being well developed here	2.09	2.29	2.15	0.248
42. The enjoyment outweighs the stress of the program	1.71	1.76	1.73	0.752
43. The atmosphere motivates me as a learner	1.66	1.91	1.73	0.189
44. The teaching encourages me to be an active learner	2.00	1.91	1.98	0.448
45. Much of what I have to learn seems relevant to a career in healthcare	1.91	2.15	1.98	0.186
46. My accommodation is pleasant	3.06	3.05	3.06	0.663
47. Long term learning is emphasized over short term learning	2.03	2.49	2.16	0.005*
48. The teaching is too teacher centred	2.44	1.62	2.22	0.000*
49. I feel able to ask the questions I want	2.23	2.73	2.37	0.002*
50. The students irritate the course organisers	2.03	1.85	1.98	0.378

“Teaching is viewed negatively” (17–24), and students’ perception of the teachers was that they were “moving in the right direction” (23–33). Their academic self-perception was “Feeling more on the positive side” (17–24), their perception of the atmosphere was “There are many issues which need changing” (13–24). The students’ social self-perception was not too bad (15–21). All 5 subscale results were better for Non-OMU Medical Faculties when comparing as two groups. The overall DREEM score of OMU Group, Non-OMU Group and all groups is accepted as “More Positive than Negative” according to Practical Guide to using the DREEM by S. McAleer and S. Roff. That means there are undeniable need for improvement on many items in particular areas of educational environment in some of Turkey’s Medical Faculties.

4. Discussion

This is the first study to report results of undergraduate medical school students from the 11 different medical faculties all over Turkey. The DREEM questionnaire was found to be an important instrument for measuring students’ opinions on the educational climate in Turkey.

Collected data has provided an overview of student opinion throughout the medical school, its environment and program. Educational environments are also students’ perceptual field. Also the DREEM questionnaire has been useful in identifying the strengths and limitations of the educational climate. There is no accepted agreement on what is an acceptable DREEM inventory score from published literature (Rajesh, 2005). Nevertheless, our DREEM score of 104.05/200 was similar to many other reports.

OMU Medical Education programme is based on problem-based learning (PBL). This is a method of learning that many students may not have encountered in

their previous education with this kind of learning model. Other 10 medical faculties which their students were part of this questionnaire are based on classical or integrated educational programme. When comparing two different educational climates on the base of PBL or classical curriculum, we believe item 13 reflects that PBL model is a more student centred educational concept. ($p = 0,002$)

Any items that were scored below 2.0 for medical faculty were examined in depth. The differences between the medical faculties in the average scores per item and per subscales (Table 1 and Table 2) representing students’ smell of the educational environment, were somewhat to be expected. However, the low total scores for OMU were a stressful concern which needs to as quick as action. In order to manage change successfully, it is necessary to collect students’ regular evaluation and feedback. (Till, 2004). Although DREEM gives information about students’ perception of their educational environment, DREEM cannot provide good information about the concerns underlying poor scores (Whittle, 2007).

16 items (refer to Table 1) were found to have significant difference ($p < 0.01$) between OMU and Non-OMU scores (3, 8, 13, 15, 16, 18, 20, 26, 27, 34, 37, 38, 40, 47, 48, 49). The DREEM subcategories are more realistic to measure of the overall motivation and learning attitude of the individual student. The DREEM inventory may be a useful tool for course/program organizers to ensure and maintain high quality educational environments and recheck students’ standpoint.

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