

Students' perceptions of learning environment in Guilan University of Medical Sciences

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Abstract

Background and purpose: *There is an increasing interest and concern regarding the role of learning environment in undergraduate medical education in recent years. Educational environment is one of the most important factors determining the success of an effective curriculum. The quality of educational environment has been identified to be crucial for effective learning. we compared the perceptions of Basic sciences students and clinical phase regarding the learning environment and also to identify the gender related differences in their perceptions.*

Method: *In this study, the Dundee Ready Education Environment Measure (DREEM) inventory was used. The total score for all subscales is 200. In this study, DREEM was administered to undergraduate medical students of basic sciences students (n=120), and clinical phase (n= 100) and the scores were compared using a nonparametric test.*

Results *Between the two batches, basic sciences students were found to be more than satisfied with the learning environment at GUMS compared to the clinical phase. Gender wise, there was not much difference in the students' perceptions.*

Conclusion: *This study revealed that both groups of students perceived learning environment relatively more Negative than Positive in GUMS. It is essential for faculty members to place more efforts on observing principals of instructional design and create an appropriate educational environment in order to provide a better learning for students.*

Keywords: *LEARNING ENVIRONMENT,,MEDICAL SCHOOL*

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Introduction

Nowadays, reform is one of the most valuable needs of educational strategies specially for achieving educational objectives. The necessity to change and new innovations in structure of medical education process all over the world has been confirmed by much universal studies. The quality of educational climates impacts the quality of the curriculum, teaching and learning consideration and

developing student outcomes as practitioners.

The World Federation for Medical Education (WFME) singles out the learning environment as one of the targets for the evaluation of the medical education programs (1), therefore the changes in the learning environment would necessitated for development in medical education. However, there is an increasing interest and concern regarding the role of learning environment in undergraduate medical education.

Educational environment is one of the most important factors determining the success of an effective curriculum (2). The Knowledge about students' perceptions of their educational environment is a useful basis for modifying and improving the

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quality of educational environment. Students' perception of learning environment is also found to influence their behaviour (till 2004). Pimparyon et al. observed significant positive relationships between meaning orientation and all the five scales of the medical education environment measures:

Student's perception of teaching and learning, Teachers, Academic atmosphere, Self and Social perceptions. Mayya & Roff had found significant differences in the students' perceptions of learning environment between academic achievers and under-achievers (3).

Reem Rachel Abraham et.al (1) in the similar study showed the perception of academic under-achievers were found to be significantly different from those of academic achievers (4), so revealed problematic area in the medical school environment where remedial measures are to be taken. I.H.Al-Ayed in assessment of the educational environment at the college of Medicine of King Saud University (5) Showed: the scores for first year students were significantly higher than the others. Scores for pre clinical students were also significantly higher than those of students in clinical years. The objective of the present study was: to compare the quality of the educational environment as perceived by the first and second year and Extern and Intern (clinical) students for learning Experiences.

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Methods

The Dundee Ready Educational Environment Measure (DREEM) was used to collect data on educational environment (Roff et al, 1997) (6). The DREEM questionnaire consists of 50 items, each DREEM item was scored 0 to 4 with scores of 4,3,2,1 and 0 assigned for strongly agree, agree, uncertain, disagree and strongly disagree, respectively. Reverse scoring was used for the negative items (9 items).

DREEM is a 50 items inventory, consisting of subscales.

- a) Students' Perceptions of Learning (SPL) -12 items; maximum score is 48;
- b) Students' Perceptions of Teachers (SPT) - 11 items; maximum score is 44;
- c) Students' Academic Self-Perceptions (SASP) - 8 items; maximum score is 32;
- d) Students' Perceptions of Atmosphere (SPA) - 12 items; maximum score is 48;
- e) Students' Social Self-Perceptions (SSSP) - 7 items; maximum score is 28.

The total score for all subscale is 200.

The DREEM questionnaire was administered to students of GUMS (n=220) in 2009. They consisted of 120 and 100 students in first and second years (Basic) and forth and fifth years (Clinical phase) respectively. The questionnaire was administered at the end of term to both the student groups on different occasions after a lecture class. It was also explained that the data would be used for quality assurance as well as for research purpose and their co-operation was requested. Students completed the questionnaire anonymously.

To pinpoint more specific strengths and weaknesses within the learning environment at Guilan University of Medical Sciences (GUMS), items with a mean score of 3 above were taken as positive points and items with a mean score of 2 and below were taken as problem areas. Items with a mean score between 2 and 3 were considered as aspects of the learning environment that could be enhanced. By means of the statistical package SPSS; Mann-Whitney test was used for the comparisons.

Result

Of the 220 students in our sample 78 were males and 142 were females. Their mean

Table 1. Mean (SD) DREEM domain scores for Basic and clinical students

Domain	Basic	Clinical
Students' Perceptions of Learning (SPL)	23.83/48	21.17/48
Students' Perceptions of teachers (SPT)	22.37/44	21.48/44
Students' Academic Self-Perception (SASP)	17.26/32	16.27/32
Students' Perceptions of Atmosphere (SPA)	24.45/48	22.25/48
Students' Social Self-Perceptions (SSSP)	13.05/28	13.02/28
Total DREEM item Score for the group	100.96/200	94.19/200

Table 2: Mean (SD) DREEM item scores for Basic and clinical students

Domain	Items	Basic	Clinical
SPL	1. I am encouraged to participate in class	2.30 (1.14)	1.99 (1.08)
	7. The teaching is often stimulating	1.93 (1.14)	2.00 (1.10)
	13. The teaching is student centred	1.49 (1.15)	1.65 (1.13)
	16. The teaching helps to develop my competence	2.36 (1.33)	2.20 (1.18)
	20. The teaching is well focused	2.42 (1.03)	1.85 (1.03)
	21. The teaching helps to develop my confidence	2.42 (1.16)	2.34 (1.17)
	24. The teaching time is put to good use	2.28 (1.01)	1.74 (1.08)
	25. The teaching over-emphasizes factual learning	1.98 (1.27)	1.57 (1.14)
	38. I am clear about the learning objectives of the course	2.33 (0.97)	2.01 (1.02)
	44. The teaching encourages me to be an active learner	2.23 (1.15)	1.87 (1.17)
SPT	47. Long term learning is emphasized over short term learning	2.00 (1.31)	1.83 (1.10)
	48. The teaching is too teacher centred	1.20 (0.98)	1.45 (1.03)
	2. The teachers are knowledgeable	2.50 (0.99)	2.72 (0.78)
	6. The teachers are patient with patients	1.92 (0.93)	1.99 (0.88)
	8. The teachers ridicule the students	1.93 (1.15)	1.55 (1.01)
	9. The teachers are authoritarian	2.33 (1.11)	2.48 (0.85)
	18. The teachers have good communication skills with patients	2.18 (0.86)	2.08 (1.00)
	29. The teachers are good at providing feedback to students	2.30 (1.02)	1.91 (1.00)
	32. The teachers provide constructive criticism here	1.98 (1.11)	1.67 (1.09)
	37. The teachers give clear examples	2.48 (1.13)	2.45 (0.93)
SASP	39. The teachers get angry in class	1.85 (1.12)	1.96 (1.17)
	40. The teachers are well prepared for their classes	2.70 (1.00)	2.55 (0.90)
	49. The students irritate the teachers	2.09 (1.15)	1.41 (1.02)
	5. Learning strategies which worked for me before continue to work for me now	2.78 (0.98)	2.67 (0.96)
	10. I am confident about passing this year	2.75 (1.16)	3.07 (0.92)
	22. I feel I am being well prepared for my profession	2.04 (1.04)	1.47 (1.05)
	26. Last year's work has been a good preparation for this year's work	2.13 (1.10)	1.68 (1.02)
SPA	27. I am able to memorize all I need	2.18 (1.22)	2.76 (0.96)
	31. I have learned a lot about empathy in my profession	2.83 (0.92)	2.52 (0.99)
	41. My problem-solving skills are being well developed here	2.27 (1.01)	1.87 (1.10)
	45. Much of what I have to learn seems relevant to a career in healthcare	2.39 (1.07)	1.91 (1.56)
	11. The atmosphere is relaxed during the ward teaching	2.19 (1.25)	2.31 (1.05)
	12. The course is well timetabled	1.88 (1.15)	1.53 (1.18)
	17. Cheating is a problem in this course	1.90 (1.35)	2.11 (1.19)
SSSP	23. The atmosphere is relaxed during lectures	1.99 (1.12)	2.10 (0.98)
	30. There are opportunities for me to develop my interpersonal skills	2.18 (1.14)	1.53 (1.12)
	33. I feel comfortable in class socially	2.58 (1.07)	2.12 (1.12)
	34. The atmosphere is relaxed during seminars/tutorials	1.25 (0.98)	2.27 (0.95)
	35. I find the experience disappointing	2.19 (1.05)	1.97 (1.15)
	36. I am able to concentrate well	2.24 (1.17)	2.49 (1.16)
	42. The enjoyment outweighs the stress of studying medicine	2.42 (1.17)	1.77 (1.16)
	43. The atmosphere motivates me as a learner	2.30 (1.15)	1.87 (1.22)
	50. I feel able to ask the questions I want	1.90 (1.17)	2.16 (1.26)
	3. There is a good support system for students who get stressed	1.25 (1.02)	1.14 (1.15)
SSSP	4. I am too tired to enjoy the course	1.83 (1.12)	1.76 (1.25)
	14. I am rarely bored on this course	1.32 (1.27)	1.24 (1.20)
	15. I have good friends in this course	2.98 (1.02)	3.13 (0.87)
	19. My social life is good	2.93 (0.97)	2.98 (0.93)
	28. I seldom feel lonely	2.34 (1.28)	2.37 (1.28)
	46. My accommodation is pleasant	2.83 (0.95)	2.85 (0.80)

Table 3. Mean (SD) DREEM Inventory items where significant differences were observed between students studying different phases

Items	Basic	Clinical	P-value
1. I am encouraged to participate in class	2.30 (1.14)	1.99 (1.08)	0.026
8. The teachers ridicule the students	1.93 (1.15)	1.55 (1.01)	0.008
12. The course is well timetabled	1.88 (1.15)	1.53 (1.18)	0.022
20. The teaching is well focused	2.42 (1.03)	1.85 (1.03)	0.000
22. I feel I am being well prepared for my profession	2.04 (1.04)	1.47 (1.05)	0.000
24. The teaching time is put to good use	2.28 (1.01)	1.74 (1.08)	0.000
25. The teaching over-emphasizes factual learning	1.98 (1.27)	1.57 (1.14)	0.015
26. Last year's work has been a good preparation for this year's work	2.13 (1.10)	1.68 (1.02)	0.002
27. I am able to memorize all I need	2.18 (1.22)	2.76 (0.96)	0.001
29. The teachers are good at providing feedback to students	2.30(1.02)	1.91 (1.00)	0.002
30. There are opportunities for me to develop my interpersonal skills	2.18 (1.14)	1.53 (1.12)	0.000
31. I have learned a lot about empathy in my profession	2.83 (0.92)	2.52 (0.99)	0.013
33. I feel comfortable in class socially	2.58 (1.07)	2.12 (1.12)	0.002
38. I am clear about the learning objectives of the course	2.33 (0.97)	2.01 (1.02)	0.019
41. My problem-solving skills are being well developed here	2.27 (1.01)	1.87 (1.10)	0.007
42. The enjoyment outweighs the stress of studying medicine	2.42 (1.17)	1.77 (1.16)	0.000
43. The atmosphere motivates me as a learner	2.30 (1.15)	1.87 (1.22)	0.013
44. The teaching encourages me to be an active learner	2.23 (1.15)	1.87 (1.17)	0.028
45. Much of what I have to learn seems relevant to a career in healthcare	2.39 (1.07)	1.91 (1.56)	0.002
49. The students irritate the teachers	2.09 (1.15)	1.41 (1.02)	0.000

Table 4. Mean (SD) DREEM items showing significant differences between male and female students in basic sciences phase

Items	Male	Female	P-value
15. I have good friends in this course	2.80 (0.94)	3.06 (1.06)	0.050
49. The students irritate the teachers	2.40 (1.19)	1.94 (1.11)	0.034

Table 5. Mean (SD) DREEM items showing significant differences between male and female students in Clinical students

Items	Male	Female	P-value
3. There is a good support system for students who get stressed	1.47 (1.11)	0.94 (0.90)	0.022
10. I am confident about passing this year	3.32 (0.84)	2.92 (0.945)	0.029
15. I have good friends in this course	2.87 (0.96)	3.29 (0.77)	0.017
22. I feel I am being well prepared for my profession	1.87 (1.09)	1.23 (0.96)	0.004
33. I feel comfortable in class socially	2.42 (1.10)	1.94 (1.10)	0.030
40. The teachers are well prepared for their classes	2.32 (0.90)	2.69 (0.88)	0.042
41. My problem-solving skills are being well developed here	2.13 (1.07)	1.71 (1.10)	0.042
45. Much of what I have to learn seems relevant to a career in healthcare	2.21 (1.07)	1.76 (1.17)	0.033
47. Long term learning is emphasized over short term learning	2.11 (1.06)	1.66 (1.10)	0.042

age was 21.63 (SD= 2.85) and 21.15 years (SD= 1.93) respectively. Of the 120 Basic students, 40 were male and 80 were females and 100 Clinical students 38 were males and 62 were females. Table 1 shows the DREEM domain scores for Basic and Clinical batch students. For Students' Perceptions of Learning, Students' Perceptions of Teachers, Students' Academic Self – Perception, Students' Perceptions of Atmosphere and Students' Social Self – Perceptions, the mean domain scores for Basic students were 23.83/48, 22.37/44, 17.26/32, 24.45/48, and 13.05/28 respectively. While for the clinical phase students, the scores were found to be 21.17/48, 21.48/44, 16.27/32, 22.25/48 and 13.02/28 respectively. The mean total DREEM score was found to be 100.96/200 for Basic students and 94.19/200 for the clinical batch students. In general, the total DREEM domain score was found to be higher for Basic students. Table 2 shows the mean DREEM item scores for Basic and clinical batch students. It was observed that the Basic students scored less than 2 for 16 items (3, 4, 6, 7, 8, 12, 13, 14, 17, 23, 25, 32, 34, 39, 48, and 50). Clinical batch students scored less than 2 for 26 items (1, 3, 4, 6, 8, 12, 13, 14, 20, 22, 24, 25, 26, 29, 30, 32, 35, 39, 41, 42, 43, 44, 45, 47, 48, and 49) and above 3 for 2 items (10, 15).

Table 3 shows the mean of items, which showed statistically significant differences between the Basic and Clinical batch students.

Out of the 20 items, 6 items (1, 20, 24, 25, 38, 44) were from students' perceptions of learning, 3 items (8, 29, 49) from students' perceptions of Teachers, 7 items (22, 26, 27, 30, 31, 41, 45) from students' Academic Self-perceptions, 4 items (12, 33, 42, 43) from students' perceptions of Atmosphere.

Table 4 depicts the items showing significant differences between male and female students in Basic.

Table 5 depicts the items showing significant differences between male and female students in Clinical 9 of the items showed gender wise differences. The mean scores for female students were found to be higher for 8 items compared to the male students. **Discussion**

The finding of the research indicated that overall mean DREEM score for our medical school was found to be 98/200 (n= 220), indicating, students' perceptions showed many problems. The DREEM global scores for medical schools in India, Sri-Lanka, Nepal, Nigeria, Saudi Arabia and UK were reported as 117/200 [2], 108/200 [7], 130/200[8], 118/200[8], 89.9/200[5] and 139/200[9] respectively.

In our sample, the score for all the five domains of DREEM indicated that Basic students were found to be more satisfied with the learning environment at GUMS (as indicated by their higher DREEM score) compared to the clinical batch students. Our results showed a low overall score on the DREEM inventory: as far as we can verify, a score of (98/200) is the low score reported among published studies using the relatively recently validated DREEM inventory. The only published study result close to ours were from Saudi Arabia, which reported an overall score of 89.9/200[4]. Basic students' overall score and subscale scores were higher than those of clinical students; this is similar to the finding in Saudi Arabia [5].

In a report from Thai nursing school, 14.8% of students rated their institution below 50% and generally the scores decreased from the first year to the second year nursing course and increased from the second year to the third and fourth year nursing course in all 5 scales [10]. This decrease maybe because first year students are not experienced enough to give a valid report of the educational

process. In some of the areas surveyed by the DREEM inventory, the first year students might not have been too sure how to respond although this might simply mean that the first year students were not (yet) too stressed by their. However, a study of Nepalese students reported a trend towards improved perceptions in years 2 and 3 over year 1 as reflected in different DREEM totals from the 3 years [8]. Our results indicate that first year students felt to a greater extent that the course over-emphasizes factual learning and is too teacher centred, compared to the clinical batch students. This is in agreement with the report Abraham et al. from India [2].

The mean scores for Basic students were found to be higher for items (1, 20, 24, 47, 29, 26, 41, 45, 30 & 43) compared to the clinical batch students. They felt to greater extent that teaching was stimulating enough for them to participate during teaching sessions (2). 20 items (Tables 3) were found to have significant difference ($P < 0.01$) between the two batches of students. 3 items from all domains (items 10, 34, 15) were rated higher by the clinical batch students. They felt that the learning environment at GUMS make them more confident with respect to their perception regarding passing the course and also the relax atmosphere during seminars.

Our study did not show a statistically significant difference between males and females for the 5 subscales and total score of DREEM. This is in agreement with what reported by I.H.AI-Ayed (5), Abraham et al (2) and Till from Canada (11). But is contrary to that reported in a study carried out in Argentina in which a statistically significant difference between the sexes was found; with women generally more critical about the quality of teaching and the general climate of the school, especially in the areas of students' participation in class and the authoritarian attitudes of teachers. Women reported far less satisfied with their social lives than men (10). In our study, Gender-wise, the

studies. It became clear that the students lost some of the neutrality that they exhibited in the first year and became more critical of the educational environment as they progressed through the programme.

It became clear that the students lost some of the neutrality that they exhibited in the first year and became more critical of the educational environment as they progressed through the programme. overall rating (total DREEM score) of female students was significantly less compared to males in the two groups (Basic and Clinical students). DREEM scores were lower for female students compared to males.

Conclusion

This study indicated that both groups students perceived the learning environment relatively more Negative than Positive. It is essential for faculty members to place more efforts on observing principals of instructional design and create an appropriate educational environment in order to provide a better learning for students. A large study may need to be undertaken to verify the above results and conclusions.

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