

# Perception of Learning Environment among Clinical Students of a Tertiary Hospital

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## Abstract

**Objectives:** To determine the perception of the learning environment of the clinical students of Bayero University Kano, Nigeria.

**Methods:** This was a cross-sectional observational study involving the 400, 500 and 600 levels clinical students. Ethical approval was obtained. The Dundee Ready Educational Environment Measure (DREEM) questionnaire was used to assess the perception of the students. All data were analyzed by the SPSS version 16. The difference between the classes was analyzed using one-way ANOVA while student's t-test was used to analyze the difference between the genders. A p value of  $\leq 0.5$  was taken as the level of statistical significance.

**Results:** There were 205 students, with a male female ratio of 1.7:1. The global DREEM mean score was  $136.02 \pm 6.66$  out of a possible maximum total of 200. There was no significant difference between the levels in all five domains of learning environment. Female students had a more positive view on students' perception of learning and teachers only.

**Conclusion:** Students are more positive in their perception of all the five domains of the learning environment. No domain was rated as excellent hence there is room for improvement. The only identified troublesome area is the lack of adequate facilities for the management of stress. Students will benefit from adequate social and psychological support from the teaching and non-teaching staff of the faculty.

**Key word:** Learning environment, Bayero University, clinical students

## Introduction

According to Bloom (1964), learning or the educational environment can be described as the conditions, forces and external stimuli which challenge on the individual. These forces include physical, social, intellectual conditions.

He concluded that these forces surround, engulf and play on the individual. Glenn (2001) defined learning environment as everything that happens within the classroom, department, faculty or university.

The importance of the learning environment to the attainment of the goals of education cannot be overemphasized. Hutchinson (2003) stated that in adult learning, teaching is all about setting the context or climate for learning. Learning is influenced by several factors, with engagement of the learners being a crucial factor (Al Rukban *et al.*, 2010). The educational environment is known to influence the approach of students to learning and eventual academic success (Roff, 2005; Till, 2004). A better school climate translates to higher achievement and better socio-emotional health (less anxiety, depression, higher self-esteem) (Jamaiah, 2008). Several methodologies have been used to investigate educational environment but the Dundee

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Ready Educational Environment Measure (DREEM) questionnaire is widely accepted and focused on the learning environment of medical students (Roff *et al.*, 1997). The DREEM questionnaire was originally developed in Dundee and its use as a diagnostic inventory of educational environment in medical schools has been validated (Roff *et al.*, 1997).

This study intends to determine the perception of the learning environment of the clinical students of a tertiary institution. The findings of this study will identify factors that if improved upon will assist in improving overall academic achievement. The findings may also form a baseline data of students' perception of the learning environment after future changes of the faculty of clinical sciences.

**Methods**

This was a cross-sectional descriptive study involving the 400, 500 and 600 levels clinical students of the Faculty of clinical sciences. Ethical approval was given by the appropriate authority of the university. The Dundee Ready Educational Environment Measure (DREEM) questionnaire was used to assess the perception of the students. The DREEM questionnaire has five subsections covering the different areas of learning environment: students' perception of learning, students' perception of teaching, students' academic self-perception, students' perception of

atmosphere and students' social self-perception. The DREEM questionnaire consists of 50 statements which the students responded to according to Likert scale, after carefully reading them. All data derived from the study were entered into Microsoft excel spread sheet, analyzed by the use of means of total perception and the five components of the DREEM. The difference between the various classes was analyzed using one-way ANOVA while student's t – test was used to analyze the difference between the genders. A P value of  $\leq 0.5$  was taken as the level of statistical significance.

The possible maximal global score for the DREEM questionnaire is 200, and it is interpreted as follows: 0–50 = very poor; 51–100 = many problems; 101–150 = more positive than negative; 151–200= excellent (Genn, 2001). Items with a mean of  $\geq 3.5$  are positive points while those with a mean of  $\leq 2$  are problem areas while those with a mean between  $< 3.5$  and  $> 2$  are factors that can be improved upon.

*Data Analysis*

There were 205 responses out of a total of 215 students giving a response rate of 95.3%. Of the 205 students, there were 130 males and 75 females with a male female ratio of 1.7:1. The global DREEM mean score of all the students is 136.02  $\pm$  6.66 out of a possible maximum total of 200 (Table 1).

**Table 1: Overall DREEM scores (Mean and Standard deviation) for students**

Domain	Score	Standard deviation
Students' perceptions of learning (Maximum score = 48)	33.42	2.79
Students' perception of teachers (Maximum score = 44)	30.40	2.76
Students' academic self-perception (Maximum score = 32)	23.20	2.90
Students' perception of atmosphere (Maximum score = 48)	31.50	2.63
Students' social self-perception (Maximum score = 28)	17.50	2.49
Total DREEM score (Maximum score = 200)	136.02	6.66

Table 2 shows the mean DREEM score of individual score items. Most items score a mean of  $\geq 2$ . Only two items had a mean score of  $\leq 2$ . These were 'There is a good support system for students who get stressed' (1.69  $\pm$  0.86) and 'The enjoyment outweighs the stress of the course' (2  $\pm$  0.97). No item has a mean

score of  $\geq 3.5$ . Table 3 shows significant difference between the gender on perception of learning and perception on teachers. The female students have a more positive view but there is no significant difference in the other domains of learning environment.

**Table 2: Mean DREEM item scores for clinical students**

Item	Mean	Standard deviation
<b>Students' perceptions of learning</b>		
1. I am encouraged to participate in class	3.02	0.78
7. The teaching is often stimulating	2.87	0.74
13. The teaching is student centered	2.67	0.73
16. The teaching helps to develop my competence	2.94	0.72
20. The teaching is well focused	2.77	0.68
22. The teaching helps to develop my confidence	2.82	0.79
24. The teaching time is put to good use	2.83	0.77
25. The teaching over-emphasizes factual learning*	2.32	0.68
38. I am clear about the learning objectives of the course	2.77	0.77
44. The teaching encourages me to be an active learner	2.90	0.77
47. Long term learning is emphasized over short term learning	2.81	0.80
48. The teaching is too teacher-centered*	2.70	0.83
<b>Students' perception of teachers</b>		
2. The teachers are knowledgeable	3.26	0.83
6. The teachers are patient with patients	2.89	0.88
8. The teachers ridicule the students*	2.45	0.84
9. The teachers are authoritarian*	2.89	0.90
18. The teachers have good communication skills with patients	2.92	0.88
19. The teachers are good at providing feedback to students	2.55	0.77
32. The teachers provide constructive criticism here	2.44	0.77
37. The teachers give clear examples	2.88	0.77
39. The teachers get angry in class*	2.63	0.67
40. The teachers are well prepared for their classes	2.84	0.82
50. The students irritate the teachers*	2.65	0.89
<b>Students' academic self-perception</b>		
5. Learning strategies which worked for me before continue to work for me now	2.69	0.93
10. I am confident about my passing this year	3.0	0.83
21. I feel I am being well prepared for my profession	2.95	0.81
26. Last year's work has been a good preparation for this year's work	2.88	0.80
27. I am able to memorize all I need	2.32	0.79
31. I have learned a lot about empathy in my profession	3.18	0.85
41. My problem solving skills are being well developed	2.95	0.70
45. Much of what I have learn seems relevant to a career in health care	3.24	0.80
<b>Students' perception of atmosphere</b>		
11. The atmosphere is relaxed during the ward teaching	2.32	0.92
12. This school is well time tabled	2.40	0.87
17. Cheating is a problem in this school*	3.0	1.17
23. Cheating is a problem in this school	2.54	0.89
30. There are opportunities for me to develop interpersonal skills	2.83	0.72
33. I feel comfortable in class socially	2.94	0.75
34. The atmosphere is relaxed during seminars/tutorials	2.65	0.90
35. I find the experience disappointing*	3.0*	0.88
36. I am able to concentrate well	2.75	0.67
42. The enjoyment outweighs the stress of the course	2.0	0.97
43. The atmosphere motivates me as a learner	2.55	0.85
49. I feel able to ask the questions I want	2.65	0.79

**Students' social self-perception**

3. There is a good support system for students who get stressed	1.69	0.86
4. I am too tired to enjoy the course*	2.74	0.74
14. I am rarely bored on this course	2.31	0.86
15. I have good friends in this school	3.10	0.86
19. My social life is good	2.74	0.87
28. I seldom feel lonely	2.60	0.88
46. The accommodation is excellent	2.27	1.07

\*Low score signifies agreement.

**Table 3: Mean score  $\pm$  SD of both gender for the five domains of DREEM**

Domain	Male	Female	P value
Students' perceptions of learning (Maximum score = 48)	2.67 $\pm$ 0.39	2.82 $\pm$ 0.45	0.013*
Students' perception of teachers (Maximum score = 44)	2.67 $\pm$ 0.39	2.79 $\pm$ 0.49	0.04*
Students' academic self-perception (Maximum score = 32)	2.91 $\pm$ 0.53	2.94 $\pm$ 0.40	0.75
Students' perception of atmosphere (Maximum score = 48)	2.65 $\pm$ 0.45	2.64 $\pm$ 0.40	0.86
Students' social self-perception (Maximum score = 28)	2.47 $\pm$ 0.45	2.55 $\pm$ 0.39	0.20
Total DREEM score (200)			

\*P value <0.05 is significant.

Table 4 shows the mean score of the three clinical levels (400, 500 and 600) for the five domains of DREEM. There was no significant difference among these levels in all five subscales covering the different areas of

learning environment: students' perception of learning, students' perception of teaching, students' academic self-perception, students' perception of atmosphere and students' social self-perception.

**Table 4: Mean score  $\pm$  SD of three clinical levels for the five domains of DREEM**

Domain	400 level	500 Level	600 Level	F	P value
Students' perceptions of learning (Maximum score = 48)	33.23 $\pm$ 0.21	34.35 $\pm$ 0.19	32.2 $\pm$ 0.15	1.91	0.15
Students' perception of teachers (Maximum score = 44)	30.05 $\pm$ 0.31	30.12 $\pm$ 0.28	28.45 $\pm$ 0.29	2.70	0.07
Students' academic self-perception (Maximum score = 32)	23.06 $\pm$ 0.31	23.77 $\pm$ 0.28	22.51 $\pm$ 0.31	1.31	0.27
Students' perception of atmosphere (Maximum score = 48)	31.62 $\pm$ 0.33	31.77 $\pm$ 0.31	31.04 $\pm$ 0.32	0.25	0.78
Students' social self-perception (Maximum score = 28)	17.86 $\pm$ 0.44	17.05 $\pm$ 0.40	17.02 $\pm$ 0.53	1.42	0.24
Total DREEM score (200)	135.82 $\pm$ 6.49	137.06 $\pm$ 6.98	131.22 $\pm$ 6.3		

## Discussion

This study has provided an overview of the perception of the clinical students on the educational environment of Bayero University Medical School, Kano, Nigeria. The global DREEM mean score of 136.02 in this study is higher than those described in Zaria in Northern Nigeria, Nepal, Pakistan, India and Sri Lanka (Roff *et al.*, 2001; Said *et al.*, 2013; Mayya & Roff, 2004; Jiffry *et al.*, 2005) whose mean scores are 118, 130, 121, 107 and 108 respectively but is comparable to those of Dundee University medical school with a score of 139.

A global mean score of between 100 and 150 signifies that students have a more positive than negative view of their learning environment (Genn, 2001; McAleer & Roff, 2001). Several factors may explain the different DREEM scores in the various institutions. These include the curriculum strategies, students' admission criteria and students' expectations (Youssef *et al.*, 2013).

Although, there is room for improvement, a mean global score of 136 is a positive finding. It reflects a bright prospect for the attainment of the goals of the curriculum because the role of the learning environment to the attainment of the goals of education cannot be overemphasized.

### *Students' perception of learning*

The students have a positive perception of learning with a mean item score ranging from 2.67 to 3.02. They agreed that lectures and bedside teachings are student centered with clear learning objectives. The teachings are well focused with maximum use of time with factual learning not over emphasized. No item has a mean score >3.5, so there is room for improvement. The female students have a more positive perception of learning than their male counterparts, this difference is of statistical significance. The same observation was noted among students in United Kingdom and Australia (Roff *et al.*, 1997; Dune *et al.*, 2006) but studies in the Middle East and Sri Lanka (Bassau *et al.*, 2003) reported the opposite. The gender difference may be explained by the difference in learning style between female and male students as documented by (Philbin *et al.*, 1995). The 600 level students appear to have the lowest score (32.2±0.15) for this domain but there was no significant difference among the three levels of study.

### *Students' perception of teachers*

The students also have a positive perception of their teachers with a mean score ranging from 2.44 to 3.26. It ranks second to students' perception of learning. This positive rating is evidence that teachers in this tertiary institution demonstrate some necessary attributes of effective clinical teachers. (Bannister *et al.*, 2010) divided these attributes into Cognitive and Non cognitive attributes. They postulated that the non-cognitive play equally important roles. These non-cognitive attributes include enthusiasm, encouragement, ability to create a positive learning environment, listening and respect for the students. Female students also have a more positive perception of the teachers than their male counterparts. There was no significant difference among the three levels of study, although the 600 level students have the lowest mean score for this domain.

### *Students' academic and social self-perception*

These domains have the least mean scores of the five domains of the DREEM questionnaire. It reflects students' difficulty in coping with the demands of the training despite having positive perception of learning and teachers. There was no gender difference in the perception of both domains. Several studies have documented high prevalence of highly perceived stress in medical schools particularly amongst medical students (Olayinka *et al.*, 2006; Naidoo *et al.*, 2014). It is pertinent to note that the mean score for the item, There is a good support system for students who get stressed scored the lowest (1.69). Identification of stressors will assist the faculty to take appropriate steps to combat the stress and the students will benefit from adequate social and psychological support from the teaching and non-teaching staff of the faculty. There was no significant difference among the three levels of study, although the 600 level students have a marginally lower score than the 400 and 500 level students.

### *Students' perception of atmosphere*

The students are less positive of the academic atmosphere. It is interesting to note that this perception does not differ when analyzed based on gender or year of study. The students are positive about the relaxed atmosphere for learning with opportunity to develop interpersonal skills. No item in this domain has a mean score of >3.5 so there is room for improvement. The 600 level students

have the lowest mean score for this domain, although there was no significant difference among the three levels of study. Our findings is in agreement with those of (Al – Kabbaa *et al.*, 2012; Mohd *et al.*, 2009; Bakhshialiabad *et al.*, 2015) who observed lower scores for the senior students. They postulated that the senior students having lost the initial euphoria of being clinical students, are discontent and are looking forward to graduating from school after years of training.

## Conclusion

Students are more positive in their perception of all the five domains of learning environment. No domain was rated as excellent hence there is room for improvement in all domains. The only identified troublesome area is the lack adequate facilities for the management of stress. The mentoring system of the faculty of clinical sciences should be strengthened. Studies to identify stressors should be carried out and adequate support facilities for management of academic stress should be set up.

## Limitations

The study was conducted in a single medical school in Northwestern Nigeria therefore the results cannot be generalized to other medical schools in the country. The study also depended on responses obtained from a self-administered questionnaire which may be affected by external interferences.

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