

## “Educational Environment”- reflection of MBBS students; in a rural medical college of West Bengal

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**Abstract:** *Background:* A good learning environment is always essential for quality training and in parallel to enrich the learning environment by identifying its weakness in different arenas. In the state of West Bengal, amongst the existing Government medical colleges, this study is done in a rural medical college, situated in a rural area in the foothill of Himalaya. *Aim and Objectives:* To analyze the existing Educational Environment in the North Bengal Medical College, from students’ feedback; using the DREEM inventory; and subsequently to frame the recommendations for its betterment (if needed). *Methodology:* After getting the proper permission from the regulatory bodies and sensitization to the students, the classes of all Phases of MBBS were approached. 142 responses came from Phase 1 MBBS, 133 responses came from Phase 2 MBBS, 97 responses came from Phase 3 Part 1, and 100 responses got collected from Phase 3 part 2 students. All the responses got tabulated in Microsoft Excel sheet and against each component of the questionnaire the average got calculated. *Result:* The mean DREEM score of the institution found to be 123.8/200 i.e. ‘more positive than negative’. The ‘perception of Learning’ gradually declines in higher phases of MBBS. The ‘perception of Teachers’ is almost equivocal; highest among the Phase 2 MBBS class. Least ‘academic self perception’ has been observed among the Phase 1 MBBS class. Whereas in Phase 3 students the ‘atmosphere’ perceived to be lower. Socially none is much affluent and for every class it was noted to be low. In total the Phase 1 students quantified the educational environment as 134.2/200, Phase 2 students have quantified as 127.4/200, so for Phase 3(part 1) class as 114.7/200 and the final year class has opined for 118.7/200 (all in the range of “more positive than negative”). *Conclusions:* The present study reveals that all the students on an average perceive their Educational Environment “more positive than negative”. However a few lacunae came out of their perception, as- long term learning is not emphasized, lack of support system in “stress”, not so-good ward atmosphere, teachers not address empathy- these all are having an impact on revision of the students’ learning-assessment plans & programmes.

**Keywords:** DREEM, Students’ perception of learning, Students’ perception of teachers, Students’ Academic Self Perception, Students’ perception of environment, Students’ social self perception.

### Introduction

The ‘Educational Environment’ can be defined as ‘a social system that includes the learner (including the external relationships and other factors affecting the learner), the individuals with whom the learner interacts, the setting(s) and purpose(s) of the interaction, and the formal and informal rules/policies/norms governing the interaction’ [1]. So it is obvious that especially in today’s context, when the ‘Total Quality assurance’ and ‘Continuous Quality Improvement’ in each and every medical education is concerned in every corner of the earth, the Educational Environment has definitely

some impact on the learners. Even if we consider the entire medical education as a ‘system’ the educational environment is not only the ‘input’ but also shares some ‘process’ through which a novice passes for achieving his/her expertisation.

The Dundy Ready Education Environment Measure (DREEM) Questionnaire has developed first in 1997 to measure the ‘Educational Environment’ in a set up. Later on it has been used widely in different medical schools throughout the world and those works have shown that DREEM is internationally accepted, reliable, validated,

culturally non-specific generic instrument to provide feedback on strengths and weaknesses of the educational climate at particular educational institutions. The one of the strength of this questionnaire is that it locates areas of concern shared by most students that might be unintentionally neglected by educators [1-2]. To the author, so far literature searched for, although the data gets available for capital based Medical College, but, no data comes available in concerned to rural medical college in West Bengal.

In West Bengal of India, amongst the present fourteen medical teaching institutions, the North Bengal Medical College of Darjeeling district is a 50 years old Government Medical College, the only medical college situated farthest from the capital city, in a rural area, under Panchayat jurisdiction, in foothill of Himalaya. So the educational environment is diverse if compared to other medical colleges situated in the heart of Kolkata. So an endeavor was taken to assess the scenario of existing 'educational environment' using the DREEM inventory with feedback from the students at this medical college.

*Aim:* To assess the existing Educational environment in North Bengal Medical College from students' feedback; and subsequently to frame recommendations for its betterment (if needed).

*Specific Objectives:* To measure the Educational Environment in North Bengal Medical College, using DREEM inventory.

### Material and Methods

*Approval from FAIMER-CMCL Institute & Ethics Committee:* After getting the final approval from the FAIMER CMCL institute to carry on the project, the matter was discussed in College council with permission of the Principal. On approval of the College council, the permission has been obtained from Institutional Ethics Committee to carry on the study.

*Data collection & analysis:* The project was carried out amongst all students of the institution from Phase 1 to Phase 3 (part 2); available on the day of interview. In total 472 feedbacks were obtained. 142 students of Phase 1, 133 students of Phase 2, 97 students of Phase 3 part 1 and 100

students of Phase 3 part 2 have participated in this project. Students have been sensitized using the social media network of the institute (NBMC facebook page, which is free to comment by all students) as well as the students' union. Members of the students' union were invited to discuss the purpose of the project, and they were requested to sensitize the all students for providing their free responses. The purpose and mode of the study was also briefly described in the social-media webpage made and maintained by the students of the institution.

In the College council meet, Head of the department(s) of one subject from each Phases of MBBS were approached for allotment of one lecture hour for the data collection. By the consent of the College council, one lecture hour of each phase MBBS i.e. one lecture hour of 1<sup>st</sup> Prof MBBS class, one lecture hour of 2<sup>nd</sup> Prof MBBS class, one lecture hour of each 3<sup>rd</sup> Prof Part 1 & Part 2 were allotted for the author to collect the data. The data was collected by the author himself. During the permitted time in the lecture hours, the class was addressed about the study, its purpose; and the students were also addressed with request to participate in the study. Those who liked, allowed to opted out. Those who liked to participate, were taken the informed consent signed.

After that the questionnaire was distributed amongst the participating students. They all were directed not to write their roll numbers or names on the questionnaire. On distribution everyone was requested to response freely; in all questions, to minimize the chance of exclusion. After fifteen minutes, the questionnaires were taken back. The collected data is placed in the Microsoft excel sheet and analysed for descriptive statistics in excel.

### Results

The DREEM inventory questionnaire provides scope to response in five major aspects of Educational Environment as:

- (1) *Students' Perception of Learning (PoL)*
- (2) *Students' Perception of Teachers (PoT)*
- (3) *Students' Academic self-Perception (AsP)*
- (4) *Students' Perception of Atmosphere (PoA)*
- (5) *Students' social self perception (SsP).*

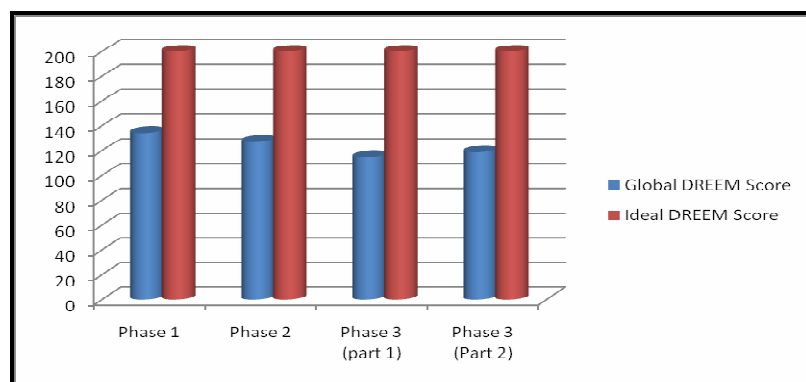
Through 50 items scored 0 to 4 on a five point likert scale of strongly disagree (0) to strongly agree (4). This in total the DREEM scoring is 200, which indicates the 'ideal educational environment'.

From the Table no. 1 & Figure no. 1 & 2; it is evident that the DREEM scoring of our medical school is 123.1/200 i.e. 'More positive than negative'.

<b>Table-1: The responses of DREEM Questionnaire items for each year of the course</b>					
<b>Subscale</b>	<b>QUESTION</b>	<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3 -Part 1</b>	<b>Phase 3 -Part 2</b>
<i>Students' Perception of Learning (PoL)</i>	I am encouraged to participate in class	3.2	3	3.11	2.43
	The teaching is often stimulating	3.1	2.9	2.1	3.1
	the teaching is sufficiently concerned to develop my competence	3.7	3.2	2.8	3
	the teaching is well focused	3.2	2.1	2.2	2.8
	the teaching is sufficiently concerned to develop my confidence	3.1	3.1	2.6	2.3
	the teaching time is put to good use	3.1	2.1	3.1	2.1
	the teaching over emphasizes factual learning	3.5	3.2	2.2	2.6
	I am clear about the learning objective of the course	2.8	2.3	2.2	2.1
	the teaching encourages me to be an active learner	1.3	2.2	2.2	2.1
	long term learning is emphasized over short-term	1.1	1.3	1.8	3.2
	teaching is too teacher centred	3.6	3.1	3.3	3.8
	<b>TOTAL SCORE</b>	<b>31.7</b>	<b>28.5</b>	<b>27.61</b>	<b>29.53</b>
<i>Students' Perception of Teachers (PoT)</i>	Teacher are knowledgeable	3.2	3.6	3.5	3.6
	teachers are patient with patients	Not applied	2.8	2.8	2.4
	teachers ridicule the students	2.1	2.2	2.2	2.1
	teachers are authoritarian	3.5	3.2	3.1	3.6
	teachers have good communication skills with patients	Not applied	2.9	1.5	1.9
	teachers are good to provide feedback to students	1.3	1.6	1.2	1.3
	teachers provide constructive criticism here	1.3	1.6	1.2	1.1
	teachers give clear example	3.2	3.1	2.1	1.1
	teachers get angry in class	3.2	2.2	2.4	2.5
	teachers are well prepared to their class	3.8	3.2	2.4	2.1
	students irritate the teachers	1.1	1.2	2.2	2.3
	<b>TOTAL SCORE</b>	<b>22.7</b>	<b>27.6</b>	<b>24.6</b>	<b>24</b>
<i>Students' Academic Self Perception (AsP)</i>	Learning strategies which work for me before, continue to work for me now	2.6	2.8	2.1	2.8
	I am confident for my passing in this year	2.2	2.3	2.5	2.2
	I feel that I am well prepared for the profession	3.1	3.2	2.9	2.7
	last years' work had been a good preparation that this years' work	Not applied	3.9	2.6	2.2
	I am able to memorize all I need	1.3	1.7	1.6	2.3
	I have learned a lot about "empathy" in my profession	1.2	1.4	1.5	1.1
	My problem solving skills are being well developed here	1.5	2.4	2.2	2.1
	Much of what I have learnt seems relevant to my carrier of medicine	1.6	2.1	2.4	3.2
	<b>TOTAL SCORE</b>	<b>13.5</b>	<b>19.8</b>	<b>17.8</b>	<b>18.6</b>

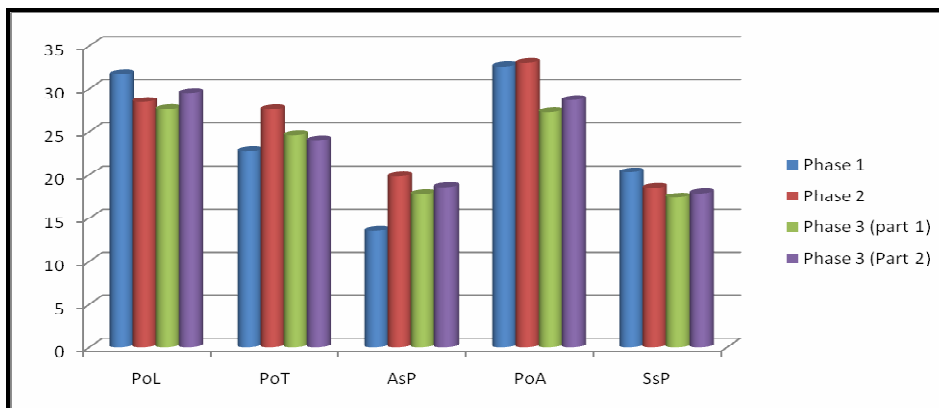
Subscale	QUESTION	Phase 1	Phase 2	Phase 3 -Part 1	Phase 3 -Part 2
<i>Students' Perception of atmosphere (PoA)</i>	The atmosphere is relaxed during the ward teaching	Not applied	2.1	1.2	1.1
	the school is well time tabled	4	3.2	2.1	1.7
	"Cheating" is a problem in this school	3.5	3.4	3.1	3.2
	The atmosphere is relaxed during the lectures	3.3	3.2	3.4	3.2
	there are opportunities for me to develop inter-personal skills	2.1	2.2	2.3	2.5
	I feel comfortable in class socially	3.2	3.2	2.3	3.2
	the atmosphere is relaxed during seminar and tutorials	3.2	2.2	1.6	1.2
	I find the experience disappointing	1.2	1.2	1.1	2.1
	I am able to concentrate well	3.2	2.6	2.5	2.8
	the enjoyment outweighs the stress of studying medicine	3.4	3.8	3.2	3.7
	the atmosphere motivates me as a learner	3.2	3.2	2.3	2.2
	I feel able to as the questions, which I want	2.3	2.7	2.2	1.8
	<b>TOTAL SCORE</b>		<b>32.6</b>	<b>33</b>	<b>27.3</b>
<i>Students' social self perception (SSP)</i>	There is a good support system for students, who gets stressed	2.2	1.3	1.6	1.7
	I am too tired to enjoy the course	3.6	3.2	3.2	2.9
	I am really bored on this course	3.8	3.2	3.2	3.1
	I have good friends in this school	3.6	3.2	3.1	3.5
	My social life is good	3.2	3.4	2.1	2.1
	I seldom feel lonely	2.7	1.7	1.4	1.7
	my accommodation is pleasant	1.2	2.5	2.8	2.9
	<b>TOTAL SCORE</b>		<b>20.3</b>	<b>18.5</b>	<b>17.4</b>
<b>GLOBAL SCORE</b>		<b>120.8</b>	<b>127.7</b>	<b>114.7</b>	<b>118.7</b>
<b>OUT OFF</b>		184 (as four responses were not applied in Phase 1)	200	200	200
<b>GLOBAL SCORE (Each component is Out of 200)</b>		<b>131.3</b>	<b>127.7</b>	<b>114.7</b>	<b>118.7</b>
<b>Mean DREEM Score (out of 200)</b>		<b>123.1</b>			

**Fig-1:** Global scoring of DREEM in its different domains (as were perceived in different Phases of MBBS class)



The figure depicts that the students perceives the Educational Environment gradually declines from Phase 1 to Phase 3. Highest perception was achieved in Phase 1 and the lowest perception in Phase 3- part 1

**Fig-2:** Total scoring of different domains of DREEM, as perceived in different Phases of MBBS class



The figure elaborates the perception of components of DREEM in different phases of MBBS students.

From the responses of the students of different classes of MBBS, it has been found that ‘*Students’ perception of learning*’ is 31.7/50 in MBBS Phase 1, 28.5/50 in MBBS Phase 2, 27.6/50 in MBBS Phase 3 part 1 and 29.5/50 in final year students. In all classes it was perceived as ‘a more positive perception’ (range= 25-36). Their responses explored that in present days’ curriculum teaching-learning rarely gives any motivation to be a life-long learner, as almost in all cases ‘short term learning’ is more addressed.

‘*Students’ perception of Teachers*’ was scored as 22.7/50, 27.8/50, 24.6/50 and 24/50 respectively in Phase 1 to final year MBBS classes and in all category it was ‘feeling more positive sides (range= 17-24). Almost all students have opined that there is no practice of ‘feedback’ or ‘positive criticism’ in present days’ teaching-learning.

‘*Students academic self perception*’ was found to be 13.5/50 in Phase 1 class which is in the range of ‘many negative aspects’ (range= 9-16), 19.8/50 in 2<sup>nd</sup> Phase MBBS, 17.8/50 in MBBS Phase 3 (part 1) and 18.6/50 in final year students. Besides the first year’s response, all have opined as ‘feeling more on positive side’ (range=17-24). The weakest area was addressed for lack of learning of ‘empathy’ in present practice.

‘*Students perception of Atmosphere*’ as been extrapolated as 32.6/50, 33/50, 27.3/50, 28.7/50 respectively in Phase 1, Phase 2, Phase 3(part 1) and Phase 3(part 2) MBBS classes, where almost all have opined as felt ‘a more positive attitude’ (range= 25-36). Senior students have opined that

atmosphere in clinical wards are not at all relaxed to be healthy for learning.

Lastly, in ‘*Social self perception*’ students have quantified their perception as 20.3/50, 18.5/50, 17.4/50, 17.9/50 respectively from Phase 1 to final year batches and all of them have perceived the absence of any ‘support system for students in stress’. Finally they have opined for ‘not too bad’ remarks (range= 15-21).

So, from the students’ feedback the area which are perceived to be the weakness in the teaching-learning process of this institute:-

1. Long term learning is not emphasized
2. Teaching does not encourages to be active learner
3. Teachers are not used to provide any good feedback, or constructive criticism
4. Students get less exposure on ‘empathy’
5. Ward atmosphere is not relaxed
6. Lack of good support system in ‘stress’

**Discussion**

Feedback from the stakeholders is important tool for the future planning for an organization. So, the measurement of Educational environment has been carried out using DREEM questionnaire based on the feedback of the students. The result explored that the students perceived their Educational environment positively. The DREEM scoring of our medical school is 123.8/200 i.e. ‘More positive than negative’.

The 'perception of Learning' gradually declines in higher phases of MBBS. The weaker area which got explored as, in this curriculum the 'long term learning' is not at all emphasized, rather 'short term learning' is more stressed (response score is in avg. below 2). More over the students never feel encouraged to be an active learner (response score is in avg. below 2). The 'perception of Teachers' is almost equivocal; highest among the Phase2 MBBS class. All students perceived the lack of practice of 'feedback' as well as 'constructive criticism' from the teachers. Weakest area scored 'Teachers provide good feedback' (avg. score below 2) and 'teachers provide constructive criticism' (avg. response below 2).

Least 'academic self perception' has been observed among the Phase 1 MBBS class. Senior students also opined that the 'empathy' has never been learned throughout the curriculum. Avg. response score is below 2 in 'I have learned a lot of empathy in my profession'. Whereas the Phase 3 students the 'atmosphere' perceived to be lower. 'Atmosphere in ward' is not at all relaxed, as was perceived by the students. But fortunately the students not feel 'totally disappointing' in this environment. Socially none is much effluent and for every class it was noted to be low. There is neither a least provision of 'stress management' nor any scope of 'support in stress in the institution. Avg. response score in 'Good support system who is stressed' is below 2.

So, from the students' feedback the area which are perceived to be the weakness in the teaching-learning process of this institute:-

1. Long term learning is not emphasized
2. Teaching does not encourages to be active learner
3. Teachers are not used to provide any good feedback, or constructive criticism
4. Students get less exposure on 'empathy'
5. Ward atmosphere is not relaxed
6. Lack of good support system in 'stress'

Educational environment influences how, why and what a student learn; which is crucial for the medical curriculum. The curriculum and students' perception towards it may affect the Quality of Learning and ultimately the patient care service in long run. As a student passes though the entire

Educational Environment during his/her course of study, so feedback from a students, can be considered the strongest measurement of the strength of the environment. The DREEM questionnaire is one of the globally accepted quantitative assessments of the educational environment of a medical teaching institution.

Every medical teaching institution should aim to provide the confident and competent medical graduates; and in this process the students will not act merely as passive receivers of the curriculum, rather they should interact to be confident in their learning. In the present study the total educational environment was rated as 'more positive than negative'; but failed to achieve the highest ranking of the DREEM inventory.

Earlier several studies have been conducted to assess the Educational Environment using this DREEM inventory throughout the world. In 2003, at Trinidad, in Faculty of Medical Sciences, the Educational Environment was measured with global DREEM score of 109 i.e. more positive than negative [3]. At Ankara University faculty of Medicine, at 2008, the DREEM score was perceived as 117.63 amongst the final year medical students [4].

Study amongst the students of Victoria University at Melbourne, Australia in 2014 revealed the Educational Environment to be more positive than negative with global DREEM score 137.37 [5]. Recent study in Saudi Arabia at King Saud University, explored the Educational Environment in Dental students using this DREEM Questionnaire [6]. The Health Science Centre of the Kuwait University is presently using the on-line feedback from the students using the DREEM questionnaire in their website [7].

Studies in Srilanka in different schools explored their DREEM score to be 108/200 [8], 107/200 [9] whereas in Nepal explored DREEM scoring of 130/200 and in Nigeria 118/200 [10]. In India, at different medical colleges the DREEM questionnaire was used to measure the Educational Environment at different times. Study in 2004, at Kasturba Medical College under Manipal University

was 117/200 [11]; whereas in the same setting later on at 2014, it was revealed to be 123/200 with quiet improvement [12]. At Malyeka Manipal Medical College (Manipal campus) in 2008, it was seen that DREEM global score is 119/200 in first year students, but the score becomes 114 in final year students [13].

In 2013, Kohli V & Dhaliwal U have administered the DREEM questionnaire amongst the students of University College of Medicine, New Delhi; where the Educational Environment was measured as 101/200 i.e. more positive than negative [14]. In a medical college of Western Maharashtra at 2015, the DREEM questionnaire was administered amongst students and the Educational Environment was measured to be 136/200 [15]. Study by Sharma S (2016) in Rajasthan, India has explored the mean score 118.9 in first year students and 120 in second year students; where both the groups have perceived the environment positively [16].

In 2017, study of Sengupta P, Sharma S & Das N [17] revealed the DREEM score in two Kolkata based (capita based) Government medical schools of West Bengal, namely, the Nilratan Sircar Medical College & College of Medicine Sagore Datta Hospital; where the Educational Environment measured by the students with almost similar values as 119/200. Although the previous study explored the Educational Environment in a capital-based Medical College of West Bengal, but till date no data was found for the medical college placed in rural part of West Bengal. So this study is an endeavor to explore the Educational Environment in a medical college at rural part of West Bengal.

Several weak-areas have been explored in 'educational environment' in a rural medical college of West Bengal as, there is no motivation of active-learning in present days teaching, nor the long-term teaching is emphasised over short term. Moreover the 'feedback to a student' not usually practiced. Present days' universities as well as the curriculum not depict the 'specific instructional objectives (SIO)' in no disciplines. Simultaneously present administration also not mandates the basic course workshop in MeT for all faculties. As a result in major cases hindrances for adapting the newer aspects come from the

senior faculties and also from Board of Studies of the universities.

'Empathy' truly is the most neglected aspect in present days' teaching, as it seldom gives any scope for such. Being tertiary centre, the institute has a huge patient load almost twice its bed-strength at any cross section. Again being a rural medical college, farthest from capital city, the crunch in faculties and doctors prevails through-out the year. So naturally, the rush and crowds in wards also prevail. For visiting a patient there remains no way but to provide as minimum time as possible. So nowhere 'empathy' comes in light. The students have addressed the necessity of 'support on stress, though in present days' curriculum there is no provision for it. But again this can be initiated in institutional level. So finally it can be stated that this quantitative measurement of the Educational Environment says "where are we", it pin points the areas of improvement in educational technology.

### Conclusion

Quantitative estimation always gives a better and instant impression to any reader, that the qualitative estimation. On the other hand in the present days' scenario, when the governing body of the medical education (MCI) is in attempt to shift to the competency based learning from the traditional age-old teaching learning curriculum. So, in this context the Quantitative measurement of the Educational Environment of a medical school is always welcome to get analyzed 'where we are' and 'how far to go'. For the said purpose using the DREEM inventory students' feedback have been taken. This explored different weakness and strengths of the medical school. Future policies can be framed depending upon the weaknesses to overcome it in all aspects. Moreover this first time evaluation also provided us a base-line data upon which future improvements can be assessed.

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