

Original Article

Measuring and Comparing Educational Environment of Two Education Systems (Integrated and Traditional Medical Curriculum) Running Simultaneously at Islamic International Medical College with (DREEM) Inventory

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ABSTRACT

Objectives: Measuring and comparing educational environment of two education systems (integrated and traditional medical curriculum), running simultaneously at Islamic International Medical College with (DREEM) Inventory

Study Design: It was a quantitative descriptive study, a survey was conducted using DREEM inventory.

Place and Duration of Study: The study was carried out at Islamic International Medical College from September 2011 to January 2012.

Materials and Methods: Total 137 out of 180 students filled the Dundee Ready Education Environment Measure (DREEM) Inventory (Roff et al., 1997) respectively. In traditional system, i.e. final year MBBS, the number of students who filled the inventory was n=63; out of which 46 were females and 17 were males. In integrated system MBBS i.e. 4th year, the number of students who filled the inventory were n=74 out of which 49 were females and 25 were males. Response rate was 76%. Mean age of the final year and 4th year students was 23 and 22 years respectively.

Results: On analysis of DREEM Inventory the overall score of integrated system was 130 and traditional system scored 114, fall in more positive than negative environment, but integrated system score was more towards excellent i.e.150-200, subscale of inventory revealed the following mean score results: Perception of learning, 4th year scored 37-a more positive perception while traditional class had 25, just on border of teaching is viewed negatively. Others subscales does not deviate more.

Conclusions: Positive perceptions of integrated system's students identified the strengths of the curriculum i.e. curriculum enhance their problem solving skills, competencies, student centeredness, teaching and learning strategies strengthened retention of their knowledge in long term memory on the other hand traditional system students scored negative to these areas. Dreem inventory is a useful tool in measuring the learning environment and helps in finding the problems in it.

Key words: *Educational environment, DREEM inventory, Integrated curriculum*

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Introduction

When students enter a new learning institution, they become aware of the curriculum they will follow through various explicit means such as the course syllabi, the classes they attend, the examinations they prepare for.^{1,2} The teachers, of course, should be well aware of the curriculum they are expected to teach through the course documentation and through faculty meetings and discussions.³

In addition to documented curriculum, students and teachers both should be aware of the educational environment' or 'climate' of the institution as well.^{4,5}

There are some important key questions in determining the nature of the learning experience these are; is the teaching and learning environment very competitive? is it authoritarian? is the atmosphere in classes and field placements relaxed or is it in various ways stressful, perhaps even intimidating? These expectations can be varied from course to course or from class to class and can be perceived as either formal or informal components of the educational experience and they can vary from individual to individual.^{6,7,8} They can be motivating or de-motivating and individual students may respond differently to these subtle elements in their learning experience.⁹ In order to enhance the learning experience in relation to teaching goal, it is of prime importance that institution should identify the basis for modifying the course by recognizing the elements operating in the educational environment of the institution or a course and evaluate how they are perceived by the students and teachers (strengths and weaknesses).¹⁰

Materials and Methods

In 2009, department of medical education of Riphah International University initiated a major reform in its undergraduate medical curriculum with profound impact on the overall organization and delivery of educational strategies, after doing need analysis and piloting of project. The purpose of the paper is to identify and compare the educational environment of traditional and integrated system of undergraduate medical education by using Dundee Ready Education Environment Measure¹ (DREEM) Inventory (Roff et al., 1997) in order to diagnose the strengths and weaknesses in the climate of both systems. The overall aim of the project was to improve the quality of medical education and providing a more holistic way of education to the medical students, which should be student centered and ultimately improves the health care delivery system. The educational strategy used in curriculum organization was integrated modular system (both vertical and horizontal) with Problem-Based Learning used as a teaching and learning

strategy along with lectures, small group learning, role plays, skill lab and clinical clerkships. The curriculum reform project was implemented in 2009 on the newly inducted first year medical students; rest of the four years were on traditional medical education system, i.e. subject based, teacher centered. After completion of three years of new system, the two systems were compared in terms of its effectiveness by identifying the educational environment at the end of its users i.e. the students. We selected the two classes 4th year (senior most class of integrated system) and final year MBBS (traditional system), and asked them to fill the inventory named *DREEM* (Dundee Ready Environment Measure). The DREEM Inventory (Roff et al.2001) was used, it contains 50 statements relating to a range of topics directly to educational climate. The inventory was administered by a survey face to face in the class room. Students were asked to read each statement carefully and to respond using a 5 point Likert-type scale ranging from strongly agree to strongly disagree. This inventory can produce global readings and diagnostic analysis of undergraduate educational environments in medical schools and other health professions institutions.

Results

Total 137 out of 180 students filled the Dundee Ready Education Environment Measure (DREEM) Inventory (Roff et al., 1997) respectively. In traditional system, i.e. final year MBBS, the number of students who filled the inventory was n=63; out of which 46 were females and 17 were males. In integrated system MBBS i.e. 4th year, the number of students who filled the inventory were n=74 out of which 49 were females and 25 were males. Response rate was 76%.

On analysis of DREEM inventory *the overall* score of integrated system was 130 and traditional system scored 114, placed in more positive than negative environment, but integrated system score was more towards excellent i.e.150-200.

Subscale of inventory revealed the following mean score results:

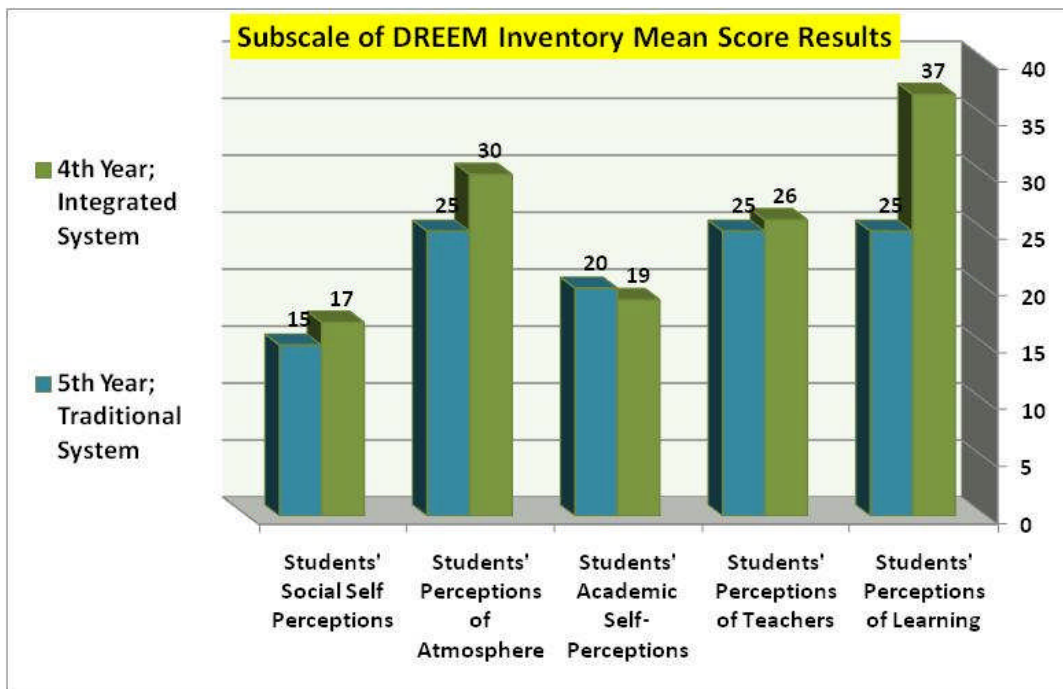
I: Students' perception of learning, 4th year scored 37, a more positive perception while traditional class had 25 that is just on border of teaching which is viewed negatively.

II: Students' perceptions of teachers 4th year scored 26 and traditional class have 25- not much difference because same teachers are teaching i.e. moving in the right direction.

III: Students' Academic self –perception of 4th & 5th year is nearly same for both i.e. 19-20, means feeling more on the positive side.

IV: Students' perception of atmosphere 4th and 5th years scored 30& 25; more towards positive but 5th year is on borderline.

V: Students' social self perceptions of 4th & 5th year scored 17 & 15 respectively which is on not too bad.



Discussion

To pinpoint the specific strengths and weaknesses within the climate we look at the responses to individual items. No item falls in the mean score of 3.5 (real positive points) for both years, 62% of items from 4th year and 34% from final year have the mean score between 2-3 (aspects of climate that can be enhanced),while 38% from 4th year and 66% of items from final year scores 2 or less indicate problems. Among the problem areas 5th year (traditional system) students identified that teaching is teacher centered, , teaching overemphasized factual knowledge, teachers ridicule the students, feeling about well prepared for the profession, I am able to memorize all I need on the other hand 4th year students rated high to their problem solving skills

are well develop, teaching helps in developing my competency and rated high to student centered teaching and long term learning is emphasized over short term learning.

Positive perceptions of integrated system's students identified the following strengths of the curriculum i.e. curriculum enhance their problem solving skills, competencies, student centeredness, teaching and learning strategies strengthened retention of their knowledge in long term memory on the other hand traditional system students scored negative to these areas. But the problem areas identified by the new system need to be rectified i.e. teachers ridicule the students and are still authoritarian, teaching do not develop their confidence, teachers do not provide constructive criticism, the atmosphere is not relaxed during teaching, good support system for students who get stressed is not available, I am too tired to enjoy the course, hence DREEM, inventory help in identifying the important areas which need to be modified in students perspective in order to enhance their learning. The ultimate aim of teaching... is to help students learn" and this will be achieved by enhancing the educational environment Overall, scores reflect that both classes did not score excellent on subscales but 4th year scores (integrated curriculum) are little higher than 5th year and their self efficacy is higher because their attributes about their self are more towards positive hence their educational environment is little better than traditional education system. Further exploration is required to justify it and identify the areas of strengths and weaknesses in both education systems.

Conclusion

The DREEM (Roff et al., 1997) thus provides useful and powerful tool in providing diagnostic information about a particular education system of any institution. 'Considerations of climate in a medical school, along the lines of continuous quality improvement and innovation, are likely to further the medical school as a learning organization with attendant benefit' (Jack Genn) and this can be done by using DREEM inventory.^{11, 12, 13} To pinpoint the specific strengths and weaknesses within the climate we also looked into the individual items responses. Positive perceptions of integrated system's students identified the strengths of the curriculum i.e. curriculum enhance their problem solving skills, competencies, student centeredness, teaching and learning strategies strengthened retention of their knowledge in long term memory on the other hand traditional system students scored negative to these areas.

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