

MEASURING EDUCATIONAL ENVIRONMENT

1. The importance of educational environment was established by Genn in 2001. It was explained by the quote:

- “Considerations of climate in the medical and other health institutes, along with the lines of continuous quality improvement and innovation, are likely to further the institutes as a learning organization with the attendant benefits.”

2. Introduction

- Educational environment is identified as one of the important determinants of an effective curriculum.
- Research into educational environment began in the 1930s and accelerated with the work of Pace and Sten (1958), and Moos (1974).
- Started as a qualitative method of observation and interview to identify atmosphere of the classroom or other learning environment.
- But gradually the strategies became more quantitative studies.

3. Development of the learning environment measuring instrument

- Stimulated by suggestion for action research by Genn and Harden, 1986, an educational environment tool was developed by Roff and McAleer, 1997.
- Genn and Harden highlighted the importance of understanding the environment for effective management of learning development and change within the health profession, 2001.
- Linda Hachison provides a good overview on educational environment, 2003.

4. Background information:

- They involved about 80 international medical educators around the world who visited Dundee from 1995-1997.
- Their inventory was validated over 1000 students worldwide
- Now being widely used in order to measure and diagnose undergraduate educational climates in the health profession.
- The inventory can be administered by postal survey or face to face in the teaching sessions.
- Translated into Spanish, Arabic, Swedish, Norwegian, Malay and Thai.
- Used in several setting including the middle east (Al-Qathani, 1999), Thailand (Primparyo et al., 2000), Nepal and Nigeria (Roff et al, 2001).
- It is currently being used in the UK, Canada, Venezuela, Brazil and the West Indies, Sri Lanka, Oman and Yemen.

5. DREEM

- **D**undee **R**eady **E**ducation **E**nvironment **M**easure is known as DREEM (by Roff and McAleer, 1997).
- Includes 50 items relating to the range of topics directly relevant to educational climate.
- Scoring of DREEM
 - DREEM is mainly for to measure and diagnose undergraduate educational climates in the health professions.
 - It has constantly high reliability
 - Data can be collected and analysed according to variables such as year of study, gender, and courses/attachment.
 - The inventory can be administered by postal survey or face-to-face in teaching session room.

- It uses a 5 point Likert-type of scale ranging from Strongly Agree (SA) to Strongly Disagree (SD).
- Items should be scored SA-4, A-3, U-2, D-1, D-0.
- 9 out of 50 items (4, 8, 9, 17, 25, 35, 39, 48 and 50) are negative statements and should be scored SA-0, A-1, U-2, D-3, SD-4.
- DREEM gives a global score for the 50 items.
- It has 5 sub-scales
 - Students' perception of learning
 - Items 1, 7, 13, 16, 20, 22, 24, 25, 38, 44, 47 & 48.
 - Items 25 & 48 are negative statement.
 - 12 items maximum score 48.
 - Students perception of teachers
 - Items 2, 6, 8, 9, 18, 25, 29, 32, 37, 39, 40 & 50.
 - Items 8, 9, 39 & 50 are negative items.
 - 11 items maximum score 48.
 - Students' academic self-perception
 - Items 5, 10, 21, 26, 31, 41 & 45.
 - 8 items maximum score 32
 - Students' perception of atmosphere
 - Items 11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43 & 49.
 - Items 17 & 35 are negative items.
 - 12 items maximum score 48.
 - Students' social self-perception
 - Items 3, 4, 14, 15, 19, 28 & 46.
 - Item 4 is negative item.
 - 7 item maximum score 28.
- The 50 items DREEM has maximum score of 200 indicating the ideal educational environment. A score of 0 is minimum and very worrying result.

- The following is an approximate guide to interpreting the score
 - 0 – 50 → very poor
 - 51 – 100 → plenty of problems
 - 101 – 150 → more positive than negative
 - 151 – 200 → excellent
- Interpret a score of 100 as environment which is viewed with considerable ambivalence (scope) by students and as such needs to be improved.
- DREEM can also be used to pinpoint more specific strengths and weaknesses within the educational climate.
 - It needs to look responses in individual items.
 - Items have mean score 3.5 above are positive points.
 - Items have mean score 2 or less indicate problem areas.
 - Items have mean score between 2-3 are the areas that could be improved.

6. PHEEM

- Roff and McAleer also developed PHEEM with their post graduate student Dr Alyson Skinner.
- **P**ostgraduate **H**ospital **E**ducation **E**nvironment **M**easure is known as PHEEM
- The DREEM has been recommended to 30 UK medical schools by the council of heads of medical schools and at least 2 schools has already begun to administer it.
- The PHEEM has been translated into Dutch for administration in Netherlands and is about to be used in USA and Australia.
- The PHEEM has been recommended by the council of Post Graduate Medical Deans of the United Kingdom.

7. ATTEM

- Roff and McAleer also developed ATTEM with their post graduate student Dr Mile Holt
- **A**nesthetic **T**heater **T**eaching **E**nvironment **M**easure is known as ATTEM.
- Dr Kelvin Casser developed an inventory for Basic Surgical Trainees.