

## Identifying poor concordance between the 'planned' and the 'hidden' curricula at a time of curriculum change in a Sri Lankan medical school using the Dundee Ready Education Environment Measure

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### Abstract

*Introduction:* Often there is a 'hidden' curriculum running alongside the planned curriculum as published in official statements of a medical school. The two aspects of the curriculum may not be in concordance, especially in a phase of change. In this study Dundee Ready Education Environment Measure (DREEM) was used as the tool to determine the level of concordance between two curricula.

*Method:* The DREEM questionnaires were administered face-to-face to two batches of undergraduate medical students of Faculty of Medicine, University of Kelaniya, Sri Lanka. One batch was the first group to follow the integrated curriculum and the other was the last group to follow the discipline-based curriculum.

*Results:* The total scores of both batches indicated a reasonably positive overall perception of the education environment, but still with considerable room for improvement. The scores of third year male students for the domains of student perception of learning and teaching were significantly lower than their female colleagues and the seniors, thus indicating where interventions should be prioritised. By analysing the responses to individual items, a collection of items which were perceived negatively by both batches of students were identified. The items represented all domains with variable degree.

*Discussion:* In addition to its multiple utilities, a careful and deep interpretation of the DREEM results can be used to identify a group affected specifically by the educational environment, possibly caused by a lack of concordance between the planned and the hidden curricula of the same institution.

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### Introduction

The curriculum is seen as covering not only what is taught and learned, but also how learning is managed and the overall learning environment (Harden, 1986). Sometimes there is a 'hidden' curriculum running alongside the

planned curriculum as published in official statements of a medical school.

The hidden curriculum can be defined as 'the set of influences that function at the level of organisational structure and culture including, for example, implicit rules to survive the institution such as customs, rituals, and taken for granted aspects' (Lempp & Seale, 2004). Changes made to the planned curriculum may not have a positive impact on the hidden facet of the curriculum. As a result, the development of medical education can become a history of reform without change (Bloom, 1989). Measurement of the educational environment may reflect the conflict or agreement

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between the planned and hidden curricula, and therefore will be a useful indicator of degree of concordance between the two curricula.

The Faculty of Medicine, University of Kelaniya (FMUK) is one of the six state-owned medical schools in Sri Lanka. A traditional discipline-based undergraduate medical curriculum had been followed by the medical school since its inception. A new integrated curriculum based on organ systems with a more student-centred approach was introduced in 2004. Although 'what educational environment or climate should be fostered' (Harden, 1986) was one of the questions considered deeply in the process, the possibility of leaving the problems of certain student groups unattended in the new environment cannot be ignored.

The Dundee Ready Education Environment Measure (DREEM) (Roff *et al.*, 1997) is a generic instrument which has been used for generating institutional profiles, comparing groups and institutions, relating the perception of educational environment and learning styles and predicting academic achievements globally (Roff, 2005). It has been validated and utilised in assessing the educational environments in more than 20 countries, including a Sri Lankan medical school (Jiffry *et al.*, 2005). In this study we used DREEM to investigate implications of curriculum change on the perceived educational environment. As well as establishing the overall student perceptions, the data identified one group for whom there seems to be poor concordance or 'fit' – between the proclaimed curriculum and the hidden, possibly 'null' curriculum.

## Method

The DREEM questionnaires were administered face-to-face to two batches of undergraduate medical students of the Faculty of Medicine, University of Kelaniya, Sri Lanka. The sample consisted of 112 third year students, which was the first group to follow the integrated curriculum and 146 fourth year students, which was the last group to follow the discipline-based curriculum.

The 50 items of DREEM measure the educational environment under five domains, namely the students' perception of learning (SPL), students' perception of teaching

(SPT), students' academic self-perception (SAS), students' perception of atmosphere (SPA) and students' social self-perception (SSS). The response for each item is indicated on a five-point Likert scale. The mark allocation of the positive extreme (strongly agree) and negative extreme (strongly disagree) are four and zero respectively. Nine out of fifty items are negatively marked and the reverse is followed in allocating marks for them. The maximum possible total score is 200.

The total and subscale scores were computed and interpreted according to the DREEM interpretation guidelines. The results of two batches and of gender groups in each batch were statistically compared using non-parametric tests. Subsequently the responses of all students for individual items of the DREEM questionnaire were analysed.

## Results

The age of participating students ranged from 21 to 24 years with male to female ratio of the third and fourth year respondents being approximately 1:2 and 1:1 respectively. The return rate was 112/160 (70%) for third year and 146/173 (83%) for fourth year.

The scores for each batch and gender group are comparatively summarised in table 1. The total scores of both batches (113 for third year students and 116 for fourth year students with *p value* of 0.251) indicated a reasonably positive overall perception of education environment, but still with considerable room for improvement.

The scores of third year male students for the domains of student perception of learning and teaching were significantly lower than those of their female colleagues (*p value* of 0.007), thus indicating where interventions should be prioritised. There were no statistically significant differences in total scores or subscale scores between male and female students in the fourth year.

By analysing the responses to individual items, a collection of items which were perceived negatively by both batches of students were identified. The items represented all domains with variable degree (table 2). No statistically significant inter-batch or gender difference was observed in relation to any item.

**Table 1: DREEM scores and p values for batches and genders**

		Total score	p value	Scores-males	Scores-females	p value
Total scores	3 <sup>rd</sup>	113	0.251	108	115	0.131
	4 <sup>th</sup>	116		116	116	0.904
Scores-SPL <sup>a</sup>	3 <sup>rd</sup>	23	0.000	22	25	0.007
	4 <sup>th</sup>	29		29	29	0.421
Scores-SPT <sup>b</sup>	3 <sup>rd</sup>	23	0.433	21	24	0.007
	4 <sup>th</sup>	23		23	23	0.122
Scores-SAS <sup>c</sup>	3 <sup>rd</sup>	18	0.002	18	18	0.75
	4 <sup>th</sup>	20		20	20	0.509
Scores-SPA <sup>d</sup>	3 <sup>rd</sup>	27	0.295	27	27	0.247
	4 <sup>th</sup>	28		28	28	0.269
Scores-SSS <sup>e</sup>	3 <sup>rd</sup>	16	0.004	16	16	0.919
	4 <sup>th</sup>	17		17	17	0.785

<sup>a</sup>students' perception of learning

<sup>b</sup>students' perception of teaching

<sup>c</sup>students' academic self-perception

<sup>d</sup>students' perception of atmosphere

<sup>e</sup>students' social self-perception

**Table 2: DREEM items which had a median of 2 or less**

Educational Environmental Domain		Item
Students' perceptions of learning	(25)	Teaching over emphasises the factual learning
Students' perceptions of teachers	(8)	The teachers ridicule students
	(9)	Teachers are authoritarian
	(39)	Teachers get angry in classes
	(50)	Teaches are irritated by students
Students' academic self-perceptions	(27)	The students were able to memorise all they needed
Students' perceptions of atmosphere	(11)	The atmosphere during the ward teaching is relaxing
	(12)	The school is not well time tabled
Students' academic self-perception	(3)	There is good support system for students who get stressed
	(14)	I am rarely bored on this course
	(28)	I seldom feel lonely

## Discussion

### **Implications of a new curriculum on the educational environment**

Interpretations of scores according to the guidelines provided a useful insight to the overall picture. The students following the integrated curriculum perceived the overall educational environment reasonably positively, but to an insignificantly lesser

degree than their seniors, who follow the discipline based curriculum. The perception of both batches is similar to the comparable groups in another medical school in Sri Lanka (Jiffry *et al.*, 2005).

Both batches of students indicated that the teaching is 'moving in the right direction'; the academic environment and atmosphere are positive; the social environment is 'not

too bad'. The seniors' view of the academic and social environment was significantly more positive compared to their juniors. However, third year students perceived teaching negatively compared to their colleagues in the fourth year. As indicated by the DREEM data, the continuation of teacher-centred practices and ineffective student support system in a student-centred curriculum (i.e. components of hidden curriculum) might be responsible for the different perceptions of the third year male students. The reliability of the picture may be improved by analysing the perception of the second batch of students who follow the integrated curriculum. The first population exposed to a marked change in a long-lasting system report some reservations initially as reported by Davis *et al.* (2001) in analysing the students' perception on the introduction of portfolio assessment at the Dundee University Medical School.

These results point to some specific issues of concern related to the teaching and learning process. They may or may not be directly related to the planned curriculum, as the degree of concordance between planned and taught curricula may not be high especially during the early stages of implementation. Though its determinants are many, the extent of descent of the macro level message (i.e.

planners' mission) to micro level (i.e. teachers' practices) is particularly important to this situation. Information overload, improper timetabling and lack of good support systems for students relate directly to the planned curriculum, while authoritarian and ill-tempered approaches of the teachers and stressful ward teaching related to the 'hidden' curriculum as it is actually taught.

**Groups affected specifically by prevailing educational environment**

We further analysed the interpretations of scores deeply, in identifying group/s affected specifically by the prevailing educational environment.

In contrast to their seniors who perceived teaching being 'more positive' without any gender difference, the third year students as a batch viewed it as being more 'negative'. This was particularly the view of male students, as the female students of the third year reported a more positive perception similar to their seniors. In contrast to the perception of both male and female students in the fourth year and their female batch mates, the male students in the third year considered that the teachers are 'in need of some retraining'. This might direct us to explore issues such as sexism in future studies.

**Figure 1: Interrelationship of educational environment issues related to negative perception**

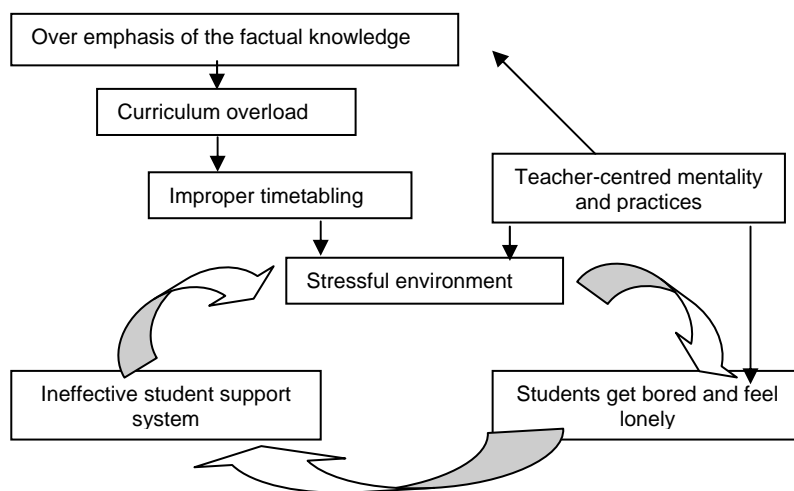


Table 2 indicates coherence between the lowest-scored items which formed recognisable components of a cycle that students were caught up in (figure 1). They revolved around perceptions of the performance of the tasks, attitudes and approaches of the teachers.

In conclusion, in addition to its multiple utilities, a careful and deep interpretation of the DREEM results can be used to identify a group/s affected specifically by the educational environment, possibly caused by a lack of concordance between the planned and the hidden curricula of the same institution.

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