

استخدام مقياس دندي للبيئة التربوية الجاهزة (DREEM) لتقييم البيئة التعليمية في كلية طب الأسنان بجامعة دمشق

*ميسون دشاش

(الإيداع: 22 أيلول 2020 ، القبول: 25 تشرين الأول 2020)

الملخص:

البيئة التعليمية لها تأثير كبير على أداء الطلاب ونتائجهم. أعربت كلية طب الأسنان عن مخاوفها من تدهور البيئة التعليمية بسبب الأزمة السورية. تم استخدام مقياس DREEM لقياس البيئة التعليمية لطلاب كلية طب الأسنان في السنة الأخيرة في جامعة دمشق. تم تطوير استبيان باللغة العربية على الإنترنت من تصميم Google Forms مكون من 50 عنصرًا. النتائج: شملت الدراسة 59 طالبًا، منهم 61 % من الذكور و39% من الإناث. بلغ متوسط مجموع نقاط مقياس دريم DREEM 80.89 من 200 مما يشير إلى أن النظرة تجاه البيئة التعليمية كانت سلبية وليست إيجابية. كان متوسط SPL 14.5 / 48 درجة، وكان متوسط SPT 18.033 / 44 درجة. كان متوسط SASP 16.81 / 32. وكان متوسط SPA 19.169 / 48 درجة. كان متوسط SSSP هو 12.83 / 28 درجة. من المهم أن يساعد الطاقم الأكاديمي والإداري في تقليل الضغوط التي يعاني منها الطلاب في تعلم طب الأسنان وتدريبهم وتوفير بيئة داعمة ودافئة ولاسيما خلال الأزمة السورية. ستكون هذه مهمة أساسية للتعلم الأمثل والحياة المهنية المستقبلية للخريجين لتحقيق الرفاه النفسي الجسدي والاجتماعي.

الكلمات المفتاحية: مقياس دندي، لتقييم البيئة التعليمية، DREEM

**The use of the Dundee Ready Educational Environment Measure (DREEM)
for assessing the Educational environment in the Faculty of Dentistry,
Damascus University**

Mayssoon Dashash*

(Received: 22 September 2020 ,Accepted: 25 October 2020)

Abstract:

Background: The educational environment has a great impact on students' performance and their outcomes. Concerns have been expressed in the Faculty of Dentistry regarding the deterioration of educational environment because of Syrian crisis. **Materials and Methods:** the DREEM measure has been used for measuring the educational environment in undergraduate dental students in the Faculty of Dentistry, Damascus University. Online Arabic questionnaire designed by Google forms with 50 items, has been developed. **Results:** About 59 dental students were included in the study in which 61% were males and 39% were females. The total mean DREEM score was 80.89 out of 200 indicating that the perception towards educational environment was negative rather than positive. The mean score of SPL was 14.5/ 48. The mean score of SPT was 18.033 /44. The SASP was 16.81/ 32. The mean score of SPA was 19.169/48. The mean score of SSSP was 12.83/ 28. **Conclusion:** It is important for the academic and administrative staff to help in decreasing students' stress experienced in dental learning and training and to provide supportive and warm environment. This would be an essential task for optimal learning and future professional life of students as well as for their personal psychosomatic and social well-being.

Keywords: Educational environment, DREEM Measure, Syria, Student..

*Department of Pediatric Dentistry, Faculty of Dentistry, Damascus University, Syria

1-Introduction:

The educational environment has a great impact on students' performance and their outcomes. It can influence their behaviour, attitude and values. It is also a crucial element that determines whether the planned curriculum is delivered successfully as it reflects how, why and what students learn (Pai et al 2014).

Positive Student's feedback towards educational environment is a major determinant of the academic achievement and success of students (Miles et al 2013).

Concerns have been expressed in the Faculty of Dentistry regarding the deterioration of educational environment because of the current situation in Syria. When Syrians starts to think that education is a luxury because of the shortage in basic essentials, shortfalls of electricity supply, and destruction of belongings, many dental students can experience high level of emotional disturbance and psychological problems that can have great influence on their future competencies.

Providing personal support and professional development of students and creating an environment for empowerment can help students to continue towards graduation despite the obstacles faced. In addition, positive discussion with students about their daily challenges and difficulties, finding solutions for their problems and providing them with essential academic advice, and educational help can have significant impact on students' performance and well-being. In this regard, educational environment, which play a very crucial role in student's retention, productivity and performance, should be assessed, monitored and improved.

Therefore, the present study has utilised the Dundee Ready Education Environment Measure DREEM questionnaire (Roff et al 1997) in order to provide a baseline reading and a diagnostic analysis of the current educational environment related to the Faculty of Dentistry in Damascus University.

2-Materials and Methods

The DREEM questionnaire, which has been considered as the most suitable tool for measuring the educational environment in undergraduate health care education institutions has been used (Roff et al 1997). DREEM consists of 50 items including 12 items for assessing **Students' perception of learning SPL**, 11 items for assessing **Students' perceptions of teachers SPT**, 8 items for assessing students' **Students academic self-perceptions SASP**, 12 items for assessing **Students' perceptions of atmosphere SPA**, and 7 items for assessing Students' **social self-perceptions SSSP**.

Each item scored on a five-point scale namely; ‘‘Strongly agree’’ (4), ‘‘Agree’’ (3), ‘‘Uncertain’’ (2), ‘‘Disagree’’ (1) and ‘‘Strongly disagree’’ (0). The DREEM has a maximum score of 200 (Miles et al 2013).

Online Arabic questionnaire designed by Google forms with 50 items, has been developed and linked to the Facebook page of dental undergraduate of the faculty of Dentistry in Damascus University in 2019.

Data collected, after two weeks, indicated that 59 students were responded and filled the questionnaire in which 61% of the students were males and 39% were females. The link was (<https://docs.google.com/spreadsheets/viewform?formkey=dDVSRjJ6VjNtCUXtLTFTUDBCVXIBTVE6MA#gid=0>). The findings related to the mean scores of the 50 items of DREEM obtained from males and females are presented in Table 1

Table(1): The 50-Item DREEM Inventory in Arabic and mean scores obtained in males and females

P value	الانحراف المعياري SD	المتوسط الحسابي للجميع Total mean	الانحراف المعياري للإناث SD for females	المتوسط الحسابي للإناث Mean for females	الانحراف المعياري للذكور SD for males	المتوسط الحسابي للذكور Mean for males	السؤال items	الترقيم N
Students' perception of learning SPL								
0.309	1.075	0.966	1.288	1.250	1.016	0.891	1. يشجعني التدريس على المشاركة في المحاضرة I am encouraged to participate in class	.1
0.169	0.868	0.729	0.899	0.846	0.866	0.696	7. غالبا ما يكون التدريس تحفيزي. The teaching is often stimulating	.2
1.387	1.536	2.051	1.387	1.385	1.537	2.239	13. التدريس مرتكز على الطالب The teaching is student centred	.3
0.967	1.156	0.797	0.967	0.538	1.204	0.870	16. يهتم التدريس بصورة كافية بتطوير مهاراتي The teaching helps to develop my competence	.4
0.260	1.114	1.000	1.166	1.231	1.104	0.935	20. التدريس موجه بصورة جيدة The teaching is well focused	.5

1.281	1.084	0.712	1.281	0.846	1.034	0.674	22. يهتم التدريس بما فيه الكفاية بتعزيز ثقتي بنفسي The teaching helps to develop my confidence	.6
1.092	1.007	0.949	1.092	1.231	0.980	0.870	24. وقت التدريس مستثمر بصورة جيدة The teaching time is put to good use	.7
0.103	1.100	1.220	1.032	1.308	1.128	1.196	25. يؤكد التدريس على حقيقة التعلم The teaching over-emphasises factual learning	.8
0.207	1.130	1.288	0.967	1.462	1.177	1.239	38. إن أهداف البرنامج التعليمي واضحة لدي I am clear about the learning objectives of the course	.9
0.331	1.024	1.051	0.947	1.308	1.043	0.978	44. يشجعني التدريس على أن أكون متعلما نشيطا The teaching encourages me to be an active learner	.10
0.036	1.417	1.424	1.198	1.462	1.484	1.413	47. يتم التأكيد على التعلم طويل الأمد وليس قصير الأمد Long term learning is emphasised over short term learning	.11
0.086	1.432	1.864	1.363	1.769	1.464	1.891	48. يركز التدريس على المدرس The teaching is too teacher centred	.12
Students' perceptions of teachers SPT								
0.237	1.062	1.898	0.760	2.077	1.135	1.848	2. إن المدرسين متمكنون من عملهم The teachers are knowledgeable	.13
0.148	1.017	2.034	1.068	2.154	1.011	2.000	6. إن المدرسين صبورون مع المرضى The teachers are patient with patients	.14
0.029	1.283	1.644	1.121	1.615	1.337	1.652	1. يسخر المدرسون من الطلاب The teachers ridicule the students	.15
0.202	1.200	1.797	1.044	1.615	1.247	1.848	2. إن المدرسين مستبدون The teachers are authoritarian	.16

							The teachers are authoritarian	
1.198	1.142	1.271	1.198	1.538	1.128	1.196	18. إن المدرسين لديهم مهارات تواصل جيدة The teachers have good communication skills with patients	.17
0.209	0.997	1.153	0.855	1.308	1.038	1.109	29. يقدم المدرسون التغذية الراجعة للطلاب بصورة جيدة The teachers are good at providing feedback to students	.19
0.232	1.024	1.051	0.927	1.231	1.054	1.000	32. يقدم المدرسون النقد البناء للطلاب The teachers provide constructive criticism here	.20
0.752	0.931	1.831	0.630	2.308	0.963	1.696	37. يقدم المدرسون أمثلة واضحة The teachers give clear examples	.21
0.062	1.078	1.898	1.068	1.846	1.092	1.913	39. يغضب المدرسون في الدرس The teachers get angry in class	.22
0.211	1.104	1.508	1.109	1.692	1.110	1.457	40. يعد المدرسون للدروس إعدادا جيدا The teachers are well prepared for their classes	.23
0.692	0.972	1.949	0.967	2.462	0.934	1.804	50. يثير الطلاب غضب المدرسين The students irritate the teachers	.24
Students' Academic self-perceptions SASP								
0.235	1.234	1.831	1.044	1.615	1.286	1.891	5. استراتيجيات التعلم التي اتبعتها هي ذاتها الآن Learning strategies which worked for me before continue to work for me now	.25
0.425	0.919	2.814	0.660	2.538	0.971	2.891	3. إنني على ثقة بأنني سأجتاز بنجاح هذا العام I am confident about passing this year	.26

0.137	1.279	2.136	1.225	2.000	1.305	2.174	21. أشعر بأنني على كفاءة جيدة لممارسة مهنتي I feel I am being well prepared for my profession	.27
0.044	1.187	1.729	1.092	1.769	1.223	1.717	26. ساعدني عملي في السنة الماضية على الإعداد الجيد لهذا العام Last year's work has been a good preparation for this year's work	.28
0.020	1.036	1.831	0.899	1.846	1.081	1.826	27. إنني قادر على تذكر كل ما أحتاج I am able to memorise all I need	.29
0.113	1.310	2.356	0.967	2.462	1.399	2.326	31. تعلمت الكثير عن كيفية التعاطف في مهنتي I have learned a lot about empathy in my profession	.30
0.345	1.077	2.339	0.760	2.077	1.147	2.413	41. تطورت مهارتي على حل المشاكل بصورة جيدة My problem-solving skills are being well developed here	.32
0.409	1.233	1.780	1.068	2.154	1.266	1.674	45. إن أغلب ما تعلمته يرتبط بمستقبلي المهني Much of what I have to learn seems relevant to a career in healthcare	.33
Students' perceptions of atmosphere SPA								
0.389	1.095	1.203	1.127	1.538	1.080	1.109	4. تكون بيئة التعلم خلال التدريس مريحة The atmosphere is relaxed during the ward teaching	.34
0.099	1.114	1.390	0.947	1.308	1.166	1.413	5. الجدول الزمني للبرنامج التعليمي جيد The school is well timetabled	.35
0.085	1.338	1.373	1.330	1.462	1.353	1.348	17. يعد الغش مشكلة في الكلية Cheating is a problem in this school	.36
0.444	1.161	1.220	1.121	1.615	1.159	1.109	23. إن بيئة التعلم مريحة خلال المحاضرات النظرية The atmosphere is relaxed during lectures	.37

0.196	1.246	1.712	0.877	1.538	1.336	1.761	30. لدي فرصة جيدة لتطوير مهاراتي الشخصية There are opportunities for me to develop my interpersonal skills	.38
0.530	1.201	2.068	1.050	2.538	1.218	1.935	33. إنني مرتاح اجتماعيا في المحاضرة I feel comfortable in class socially	.39
0.158	1.074	1.949	0.954	2.077	1.112	1.913	34. تكون البيئة مريحة خلال السيمينارات The atmosphere is relaxed during seminars/tutorials	.40
0.173	1.270	1.797	1.446	1.615	1.229	1.848	35. أجد أن التجربة محبطة I find the experience disappointing	.41
0.199	1.132	1.831	1.000	2.000	1.172	1.783	36. أستطيع التركيز على التعلم بصورة جيدة I am able to concentrate well	.42
0.174	1.484	1.271	1.320	1.077	1.536	1.326	42. يفوق الاستمتاع في الكلية الضغط عن دراسة الطب The enjoyment outweighs the stress of learning in Medical Faculty	.43
0.204	1.191	1.407	0.927	1.231	1.260	1.457	43. تحفزني بيئة التعلم كمتعلم The atmosphere motivates me as a learner	.44
0.114	1.238	1.949	0.987	1.846	1.308	1.978	49. أشعر أنني قادر على طرح الأسئلة التي أريد I feel able to ask the questions I want	.45
Students Social self-perceptions SSSP								
0.213	0.600	0.322	0.439	0.231	0.640	0.348	3. هناك نظام دعم جيد للطلاب الذين لديهم ضغوط نفسية There is a good support system for students who get stressed	.46
0.232	1.180	1.508	0.947	1.308	1.241	1.565	4. لا أستطيع التمتع بالبرنامج نتيجة الإرهاق I am too tired to enjoy the course	.47

0.383	1.238	0.949	0.870	0.615	1.316	1.043	6. نادرا ما أصاب بالملل في هذا البرنامج I am rarely bored on this course	.48
0.003	1.133	2.695	0.855	2.692	1.209	2.696	7. لدي عدد جيد من الأصدقاء في هذا البرنامج I have good friends in this program	.49
0.374	1.118	2.695	0.961	2.385	1.153	2.783	19. إن حياتي الاجتماعية جيدة My social life is good	.50
0.388	1.235	2.305	1.320	1.923	1.203	2.413	28. نادرا ما أشعر بالوحدة I seldom feel lonely	.51
0.410	1.411	2.356	1.256	1.923	1.441	2.478	46. إن سكني جيد My accommodation is pleasant	.52

3-Results

About 59 dental students were included in the study in which 61% were males and 39% were females. The findings are presented in Table1.

Table (2): The DREEM domains and mean score in males and females.

Female=13	Male=46	All medical	Domain	interpretation
14.634	13.89	14.05/ 48	SPL	teaching is viewed negatively
19.846	17.521	18.033/44	SPT	in need of some retraining
16.461	16.913	16.813/32	SASP	feeling more on the positive side
19.84	18.978	19.169/48	SPA	a more positive atmosphere
11.07	13.32	12.83/28	SSSP	not a nice place
81.851	80.622	80.895/200		plenty of problems

The total mean DREEM score was 80.89 out of 200. The mean score for Students' perception of learning SPL was 14.05/ 48 indicating that teaching is viewed negatively. When we looked in detail at SPL, we found that the item 7 “*The teaching is often stimulating*” and item 16 “*The teaching is sufficiently concerned to develop my Competence*” had the lowest score (0.72± 0.86 and 0.79±1.156 respectively) in the learning domain and were the cause of deterioration of the mean learning score.

The mean score of SPT of 18.033/ 44 indicated that there is a need for some re-trainings (Table 2). In addition, looking at items for assessing Students' perceptions of teachers SPT, demonstrated that item 8 "***The teachers provide constructive criticism***" had the low score and was (1.64 ±1.28) indicating that teachers are not so supportive and helpful.

On the other hand, the mean score of SASP which was 16.813/ 32, indicated a positive feeling and demonstrated that the majority of students were motivated to learn and that their confidence increased. It was also noted that item 10 "***I am confident about my passing this year***", 21 "***I am feel am being well prepared for my profession***", 31 "***I have learned a lot about empathy in my profession***" and 41 "***My problem-solving skills are being well developed here***" were acceptable. They had the highest score (2.81 ±0.91, 2.13 ± 1.27, 2.35 ± 1.31, and 2.33 ±1.07 respectively), when compared to other items ; "***Last year work has been a good preparation for this year's work***" and "***Much of what I have to learn seems relevant to a career in dentistry***" (items 26 and 31; 1.72±1.18 and 1.78 ±1.23 respectively), which had the lowest score in academic domain.

The findings of SASP strongly suggest that the faculty should support self-directed learning as this might improve educational outcome of learning and decrease negative reactions.

The analysis of SPA domain related to Students' perception of atmosphere indicated that the mean score was 19.169/ 48 in which the item 11 "***The atmosphere is relaxed during the ward teaching***" had the lowest score. This has demonstrated that the atmosphere during teaching is not so comfortable (1.20± 1.095). In addition, the mean score of SSSP, which was 12.83/ 28, demonstrated that the place is not a nice one.

Several weak areas have been identified indicating that the educational environment is stressful. Majority of students indicated the lack of good support system for those who get stressed (mean score for item 3 as they gave the lowest score to question number 3 "***There is a good support system for students who get stressed***" (0.322± 0.6).

The difference between males and females was significant for items 47, 26, 27, 8, and 15. "***Long-term learning is emphasized over short-term***". Females expressed more agreement when compared to males ($P=0.036$) about long-term learning. Similarly, females expressed more agreement with items 26 "***Last year work has been a good preparation for this year's work***" and 27 "***I am able to memorize all I need***" with a significant difference between males and females ($P=0.04$, and $P= 0.020$ respectively). However, results indicated that males expressed more agreement than females with items number 8 "***The teachers ridicule the students***" and 15 "***I have good friends in this school***" with a significant difference ($P=0.029$, $P=0.003$ respectively).

4-Discussion

The Dundee Ready Education Environment Measure DREEM has been used (Roff et al 1997). It was applied internationally in different settings, and was found to be reliable and applicable in several cultural contexts (Bouhaimed 2008; Miles et al 2013; Al-Mohaimeed 2013). Moreover, it has been considered as the most suitable tool for measuring the educational environment in undergraduate health care education institutions, as it can provide a baseline reading and a diagnostic analysis of the current educational environment related to the faculty of Dentistry.

In addition, Arabic DREEM was utilised in Arabic countries for medical schools at King Abdul Aziz University, Umm Al-Qura University in Saudi Arabia and Sana'a University Medical School in the Republic of Yemen in which the mean total score were 102, 107 and 100, respectively (Roff 2005).

The total mean DREEM score was 80.89 out of 200 indicating that the perception towards educational environment was negative rather than positive. Comparison with other previous studies indicated that the total mean score was lower than that observed in studies undertaken in University of Dundee (139), Birmingham Medical School (139), KSAU-HS- Saudi Arabia (131), Kuwait University (105), and King Saud University (89.9) (Al-Mohaimeed 2013).

Acknowledging the small sample size of this study, a baseline and a diagnostic analysis of the educational environment has been established. The biggest challenge facing the faculty today is to promote relaxed teaching atmosphere, enthusiasm, and open discussion despite the difficulties faced.

The analysis of question, demonstrated the presence of several negative features related to learning objectives of the course and teaching time. When things come to teaching ability, some teachers were regarded as effective teachers whilst others were the opposite. Many have been regarded as supportive and helpful. Others were regarded as indifferent, discouraging, or unhelpful. On the other hand, some students were motivated to learn and reported improvement in their confidence. Others have negative reactions towards their tutors, as they feel depressed and angry. The majority reported that the impact had been beneficial, whilst the minority reported negative effects on their professional attitudes and social life.

The present study has provided evidence that educational environment of the faculty of Dentistry had some negative points.

It addressed the need of further emotional and psychosocial support and engagement of academic and administrative staff to decrease students' stress experienced in dental learning and training and to provide supportive and warm environment (Tripathy and Dudani 2013).

The present study also provided the need of investigating the educational environment of other medical Syrian faculties in the near future during Syrian crisis.

This would be an essential task for optimal learning and future professional life of students as well as for their personal psychosomatic and social well-being.

8-Reference:

1. Al-Mohaimed A. Perceptions of the educational environment of a new medical school, Saudi Arabia. *Int J of Health Sci, Qassim University.*2013; 7, (2):150–159.
2. Bouhaimed M, Thalib L a Doi S.A.R. Perception of the Educational Environment by Medical Students Undergoing a Curricular Transition in Kuwait. *Med Princ Pract* 2009; 18:204–208.
3. Miles S, Swift L & Leinster SJ. The Dundee Ready Education Environment Measure (DREEM): A review of its adoption and use. *Medical teacher* 2012; 34: e620–e634.
4. Pai PG, Menezes V, Srikanth, Subramanian AM, Shenoy JP. Medical students' perception of their educational environment. *Journal of Clinical and Diagnostic Research: J Clin Diagn Res.* 2014; 8(1): 103–107. DOI: 10.7860/jcdr/2014/5559.3944.
5. Roff S. The Dundee Ready Educational Environment Measure (DREEM)—a generic instrument for measuring students' perceptions of undergraduate health professions curricula. *Medical Teacher.* 2005; 27 :(4): 322–325.
6. Roff, S., Mcaleer, S., Harden, R.M., Al-Qahtani, M., Ahmed, A.U., Deza, H., Groenen, G. & Primparyon, P. Development and validation of the Dundee Ready Education Environment Measure (DREEM), *Medical Teacher.* 1997; 19: 295–299.
7. Tripathy S and Dudani S. Students' perception of the learning environment in a new medical college by means of the DREEM inventory. *Int J Res Med Sci.* 2013;1(4):385–391.