

## Educational Environment as Perceived by Nursing Students at Tanta University

**Safaa Mohamed El-Demerdash & Reda Abd El-Fatah Abo Gad**

*Lecturers of Nursing Administration, Faculty of Nursing, Tanta University*

### **Abstract:**

**Background:** In a nursing programme, the main objective is to produce nursing graduates who can provide comprehensive care and treatment to the community. A good approach to the systematic design of a learning environment can lead to positive outcomes for graduates.

**Aim:** The aim of this study was to identify students' perception of the educational environment at Nursing Faculty at Tanta University. **Design:** Comparative design was used.

**Setting & sample:** The study was conducted at Faculty of Nursing at Tanta University. The research design was carried out on 399 nursing students are selected randomly from 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students and willing to participate in the study. **Tools:** the data of the study was collected using Dundee Ready Educational Environment Measure (DREEM) instrument.

**Results:** results of study reveals that the global mean score of 4th year students 112.42 with mean percent 56.2% is higher than what is observed in 3rd, and 2nd year students 107.20, 107.140 with mean percent 53.6%, 53.5%, respectively. The highest mean percentage score is 59.4%, 57.6% and 56.6% for 2nd, 4th and, 3rd year students respectively, are for students' perception of teachers with mean score  $26.114 \pm 5.1315$ ,  $25.366 \pm 5.3813$  and  $24.911 \pm 6.3038$  respectively, while, nursing students' lowest mean percentage is 48.7%, 48.6% and 47.8% for 2nd 4th, and 3rd year students' perception of atmosphere with mean score  $23.386 \pm 6.3323$ ,  $23.333 \pm 6.7033$  and  $22.948 \pm 6.8668$ , respectively. **Conclusion:** Remedial measure should be needed in the subscales for the three years students' perceptions of atmosphere, as well as students' academic self perception and students' social self perceptions for 2<sup>nd</sup> year students need further improvement **It recommended** that the need for the creation of a supportive environment, in addition to designing and implementing interventions to remedy unsatisfactorily elements of the learning environment for more effective and successful teaching and learning.

**Key words:** educational environment, student perception, DREEM, nursing students.

### **Introduction:**

Learning environment in any nursing and medical school is found to be important for effective management of learning. A good learning environment is vital for the delivery of quality training (Abraham et al., 2008, Nahar et al., 2010). Davis (2002) explains the educational environment as a big umbrella that covers everything happening in the educational process including; the students who are admitted to the institution "the input"; the "educational process" that students undergo. This includes the curriculum content, the teaching and learning strategies and the assessment methods; the student support system that enhances students

in their learning; finally "the output" which presents the educational outcomes that students must achieved through the educational processes. According to Dunn and Burnett (1995) the student learning environment consists of all the conditions and forces within an educational setting that impact learning. Shuell (1996) visualized the student learning environment as a rich psychological soup comprised of cognitive, social, cultural, affective, emotional, motivational and curricular factors, in which teachers and students work together toward learning.

Classroom learning environment from the students' perspectives has

been a major topic of the studies for nearly two decades. How students perceive the characteristics of the learning environment guide teachers a long way to plan, reconsider and implement the best teaching strategy. Students' approaches to learning and the quality of their learning outcomes are strongly influenced by students' perceptions of educational environment. Educational environment influences how, why, and what students learn and it has a characteristic that enables faculty, administrators, and students to answer the question of "what is medical education here really like?" Identifying the learning environment and understanding how students learn help teachers facilitate learning and plan a curriculum to achieve the learning outcomes. The nature of a learning environment depends on what happens in a given period of time, who is present when it happens, and the physical characteristics of the setting (ALCI, 2009).

The learning environment is not limited to student-teacher interaction, teaching and learning activities, but also includes having good physical structures and facilities provided by the university. Moreover, the learning environment consists of human and material resources and all interactions and experiences students have with others. The university has to be concerned about students' psychosocial and emotional needs as well. By providing all these features, the university has the potential to offer a productive learning environment (Said, Rogayah & Hafizah, 2009). A conducive environment has a positive and significant impact on students' learning, academic progress, and well-being, for example, comfortable learning rooms, receptive clinical environment and motivated, skilled and approachable teachers, is believed

to increase learner motivation, which in turn leads to better engagement in learning and improved performance of the various environments, in fact, the learning environment is of special concern to nurse educators (Arzuman, Yusoff & Phong, 2010 and Lai et al., 2009).

In nursing education, teachers have paid particular attention to student perceptions of the learning environment (Said et al., 2009). Student perceptions of the learning environment influence learning behaviors and outcomes that, in turn, become part of the experienced learning environment of self and others, as well as influence their responses to teaching and learning processes. The effects of the learning experience on the learner, going beyond cognitive achievement, have a bearing on students' self-evaluation and educational adaptation. The role of learners' perceptions of themselves (their competencies, interests, values), of others (teachers, parents, peers), and of learning environments (classrooms, libraries, homes) is very important in self-regulation, and thus, for education. These perceptions involve knowledge but are subjective and may conflict with other knowledge possessed by learner or others. Yet, such perceptions affect students' self regulatory efforts (ALCI, 2009).

Students' perceptions of their educational environment are a useful basis for modifying and improving the quality of educational environment. Students behave in direct correlation with their perceptions. To purposefully change behavior in any way requires that we understand that perceptual field. Students do not behave according to the facts as they seem to someone else. What a person does, what a person learns, is a product of what is going on in that individual's unique and personal field of

awareness. At school, student perceptions suggest that teacher behaviors, which have tended to be viewed as merely a part of the "teacher role", do have a significant impact on the affective climate in classrooms. The perceptual reports clearly indicate that while there are a number of common perceptions held by students, there are many more perceptions that are individual's unique and personal field of awareness. (ALCI, 2009).

Three conditions must be met if worthwhile student perceptions are to be obtained. First, the teacher must admit that improvement is necessary and that students can provide useful information, second, the teacher must establish the kind of climate that is conducive to obtaining student perceptions, and third, teacher authenticity where students feel the teacher needs their input and their perceptual reports will be used to enhance the teacher's personalizing interactions with them (ALCI, 2009), Jiffry et al., (2005) illustrated that the major domains that comprise the educational environment of health school are self-perceptions of learning, self-perceptions of teachers, academic self-perceptions, self-perceptions of atmosphere, and social self-perceptions are currently considered as major domains that comprise the educational environment of medical schools. A warm, supportive, and challenging educational environment is generally considered an essential pre-requisite for optimal learning (Arzuman et al., 2010). Students' perceptions of the educational milieu can be a basis for implementing modifications and thus optimize the educational environment (Aghamolaei & Fazel, 2010). So, more importance should be given to the perception of students' to improve the educational environment as perceptions are associated positively with learning outcomes, learning

approach and attitude toward studying. Thus the present study aims to identify nursing students' perception of the educational environment at Tanta University.

### **Aim of the Study**

Aim of the present study is to identify nursing students' perception of the educational environment at Tanta University.

### **Research question:**

1. What are the perceptions of nursing students for their educational environment?
2. What are the difference between the perceptions of second, third and fourth year nursing students?

### **Subjects and methods:**

#### **Design:**

A comparative design is used

#### **Setting:**

The study was conducted at Faculty of Nursing at Tanta University.

#### **Subjects:**

The study subjects consisted of representative sample (35%) from fourth (150), third (135) and second (114) academic years. Total students number 399. Selected randomly and willing to participate in the study.

#### **Intrinsic characteristics**

- Lasted at least one academic year
- Regular students
- No limited for sex or academic achievement

#### **Sample size:**

A representative sample (35%) from fourth (150), third (135) and second (114) academic years by using the following formula for the three academic years samples:

$$n = \left[ \frac{Z_{\alpha/2} \sigma}{E} \right]^2 \quad \text{Where:}$$

The margin of error  $E$  is the maximum difference between the observed sample mean  $\bar{x}$  and the true value of

the population mean  $\mu$ ;  $\frac{z}{\sqrt{n}}$  is known as the critical value, the positive  $z$  value that is at the vertical boundary for the area of  $\frac{\alpha}{2}$  in the right tail of the standard normal distribution.  $\sigma$  is the population standard deviation.  $n$  is the sample size.

#### ***Tool of the study:***

The data of the study was collected using Dundee Ready Educational Environment Measure (DREEM) instrument (Roff, et al., (1997), the DREEM items are grouped into 5 subscales: Students' Perception of Learning (SPoL) has 12 items, with a maximum score of 48 (satisfactory score = 24); Students' Perception of Teaching (SPoT) has 11 items, with a maximum score of 44 (satisfactory score = 22); Students' Academic Self-Perception (SASP) has 8 items, with a maximum score of 32 (satisfactory score = 16); Students' Perception of Atmosphere (SPoA) has 12 items, with a maximum score of 48 (satisfactory score = 24) and; Students' Social Self-Perception (SSSP) has 7 items, with a maximum score of 28 (satisfactory score = 14).

#### ***Scoring system:***

Each item is scored 0–4 (4 = strongly agree, 3 = agree, 2 = unsure, 1 = disagree, and 0 = strongly disagree) on a five point Likert Scale. There are 9 negative items (Items 4, 8, 9, 17, 25, 35, 39, 48, and 50) scored in a reverse manner; high scores on these items indicate disagreement. The guidelines for interpreting the overall DREEM score are 0–50, very poor; 51–100, many problems; 101–150, more positive than negative; and 151–200, excellent (indicating an ideal educational environment).

The scores for each subscale are interpreted on a four-tiered scale, the top tier representing the highest score indicating an ideal situation. The

bottom tier represents the lowest score and a less ideal situation.

Items with a mean score of 3.5 or more are true positive points. Items with a mean of 2.0 or less should be examined more closely, as they indicate problem areas. Items with a mean between 2.0 and 3.0 are aspects of the educational environment that could be enhanced.

#### ***Administrative and ethical considerations:***

Official permission to carry out the study was obtained from Dean of Nursing Faculty at Tanta University. Informed consent was obtained from each studied subjects included in the study. The anonymity and confidentiality of responses, voluntary participation and right to refuse to participate in the study were emphasized. All students received an explanation about the study before introducing the questionnaire and only those who agreed to participate were included.

#### ***Tool validity:***

Content validity of the tool was performed by five experts in the field of administration, obstetric nursing, and community health nursing,

#### ***Pilot study:***

Pilot study is done before starting data collection to test the reliability and clarity of the questions. It is done on 10% of nursing student. Subjects of pilot study were excluded from the study sample. Cronbach Alpha Coefficient test is used, its value was ( $\alpha = .89$ ).

#### ***Field work:***

- DREEM was collected through semi structured interview; the researchers explain the sheet to the subjects and then, ask them to complete it.
- The questionnaires were distributed to students ( $n = 399$ ) at a regular

face-to-face session. Before the questionnaire was administered, the students were thoroughly briefed about the purpose of the study and the data collection process. They were also assured of their anonymity and the confidentiality of their responses. The completed questionnaires were collected by the researchers at the same session. Some educational terms and phrases, such as "factual learning", "ridicule", and "authoritarian", were explained before the respondents began the questionnaire.

- The entire data collection process took about 20 minutes.
- Data were collected by the researcher during the period from Mars to April, 2011.

#### **Statistical analysis:**

Data was collected, coded and organized into tables, and then analyzed using the statistical package for social science (SPSS, 16). Descriptive measures, including frequency, percentage, arithmetic mean and standard deviation were presented. ANOVA test was used for comparing three samples. P value was statistically significant at level of 0.05%.

#### **Result:**

**Table (1):** presents the Dundee Ready Educational Environment Measure (DREEM) subscale and global mean, standard deviation and percentage scores for nursing students, the table shows that there are 399 respondents to the DREEM questionnaire with nursing students accounting for 35% for each academic year (2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> year). The global mean score of the 4<sup>th</sup> year students (112.420) with mean percent 56.2% is higher than what observed in 3<sup>rd</sup>, and 2<sup>nd</sup> year students (107.20, 107.140) with mean percent 53.6%, 53.5%, respectively. The global score indicates

that the students' perceptions of the educational environment of the school were more positive than negative.

The highest mean percentage score is 59.4%, 57.6% and 56.6% for 2<sup>nd</sup>, 4<sup>th</sup> and, 3<sup>rd</sup> year students respectively, are for students' perception of teachers with mean score 26.114±5.1315, 25.366±5.3813 and 24.911±6.3038 respectively, while, nursing students' lowest mean percentage is 48.7%, 48.6% and 47.8% for 2<sup>nd</sup>, 4<sup>th</sup>, and 3<sup>rd</sup> year students' perception of atmosphere with mean score 23.386±6.3323, 23.333±6.7033 and 22.948±6.8668, respectively.

**Table (2):** shows comparison of DREEM domain scores for three years nursing students. High percent (66.7%, 66% and 65.8%) of 3<sup>rd</sup>, 4<sup>th</sup> and 2<sup>nd</sup> year students respectively, responded 'more positively than negatively' to Global DREEM score. A more positive perception' of learning is observed among more than two third (69.3%, 67.4% and 65.8%) of 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students, respectively. Majority, 79.3%, 74.6% and 66.7% of 4<sup>th</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year students respectively, perceived their "teachers moving in the right direction". Nearly fifty percent (51.9%, 50.7%) of 3<sup>rd</sup> and 4<sup>th</sup> year students 'feeling self more on the positive side', while 51.8% of 2<sup>nd</sup> year students have 'many negative aspects' on academic self perception.

Faculty atmosphere is perceived as 'There are many issues which need changing' by 57.1% and 51.3% of 2<sup>nd</sup> and 4<sup>th</sup> year students respectively, while 47.4% of 3<sup>rd</sup> year students thought that 'a more positive faculty atmosphere. 61.4% of 2<sup>nd</sup> year students thought that the society they live in is 'not a nice place to be' while, 59.3% and 57.4 of 3<sup>rd</sup> and 4<sup>th</sup> year students, respectively believed their society is 'not too bad'.

**Table (3):** shows the individual item analysis of DREEM according to the 5 different subscales. For the SPoL subscale items, Regarding to 4<sup>th</sup> year students, 10 out of 12 items scored between 2.00 and 3.00, and equal 1 items scored less than 2.00 and more than 3.00. The mean score for Item 1 (I am encouraged to participate in class) is  $3.1431 \pm 1.0270$ . Regarding to 3<sup>rd</sup> year students, 9 out of 12 items scored between 2.00 and 3.00, and 3 items scored less than 2.00. The mean score for items 24, 25, 38 (The teaching time is put to good use, The teaching over-emphasized factual learning and I am clear about the learning objectives of the course) is  $1.8370 \pm 1.2708$ ,  $1.9481 \pm 1.3232$  and  $1.8740 \pm 1.1996$ . Item 16 (The teaching is sufficiently concerned to develop my competence) is a negative item and score less than 2.00 from 4<sup>th</sup> and 2<sup>nd</sup> year students. As regard to 2<sup>nd</sup> year students, 7 out of 12 items scored between 2.00 to 3.00 and 4 items scored less than 2.00. Only, the mean score for item 1 (I am encouraged to participate in class) is  $3.2842 \pm 1.0751$ . There is a statistical significant differences (at  $p \leq 0.05$ ) between three years students perception regarding items 16 and 38 (The teaching is sufficiently concerned to develop my competence and, I am clear about the learning objectives of the course).

In the analysis of individual item of SPoT subscale (**table, 3**). Regarding to 4<sup>th</sup> year students, all items are scored between 2.00 to 3.00 except items 2 (The teachers are knowledgeable) scored  $3.1333 \pm 1.1212$ . While, items 8 (The teachers ridicule the students\*), 9 (The teachers are authoritarian \*), 39 (The teachers get angry in class\*) and 50 (The students irritate the teachers\*), are negative items, scored  $2.0600 \pm 1.4057$ ,  $2.5733 \pm 1.0889$ ,  $2.3133 \pm 1.2698$  and  $2.0667 \pm 1.2187$  respectively. On the

other hand, all 3<sup>rd</sup> and 2<sup>nd</sup> year students perceived their teachers as aspects of the educational environment that could be enhanced as viewed from all items that scored from 2.0 and less than 3.00. Only, item 39 (The teachers get angry in class) has scored less than 2.00 ( $1.5481 \pm 1.0489$ ,  $1.4298 \pm 0.9952$ , respectively). Furthermore, item 2 (The teachers are knowledgeable), scored more than 3.00. There is a statistical significant differences (at  $p \leq 0.05$ ) between three years students perception regarding item 8 (The teachers ridicule the students).

DREEM nursing students' academic self perception subscale (**table, 3**). From the 4<sup>th</sup> year students perspectives, all items of students' academic self perception (SSAP) scored between 2.00 and 3.00. Regarding to 3<sup>rd</sup> students, 6 Out of 8 items in the SSAP subscale, are scored less than 2.00, Items 10 & 41 (I am confident about passing this year, and my problem-solving skills are being well developed here) scored  $1.5037 \pm 1.0357$  and  $1.9925 \pm 1.3186$  respectively. Furthermore, all 2<sup>nd</sup> year students' score are ranged from 2.00 to 3.00, and only, item 10 (I am confident about passing this year) and 27 (I am able to memorize all I need) are scored  $1.4649 \pm 1.1224$ ,  $1.8714 \pm 1.1865$ , respectively. There is a statistical significant difference (at  $p \leq 0.05$ ) between three years students perception regarding items 27 (I am able to memorize all I need).

DREEM nursing students' perception of atmosphere subscale (**table, 3**). Items 17 (Cheating is a problem in this school\*) and 35 (I find the experience disappointing\*), both negative items, in the SPoA subscale scored  $2.1200 \pm 1.2687$ ,  $2.0592 \pm 1.2740$ ,  $2.1842 \pm 1.2377$  and  $2.0133 \pm 1.1584$ ,  $2.1259 \pm 1.1553$ ,  $2.0526 \pm 1.1887$  for 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students, respectively. Most items from three years students

perspectives scored less than 2.00 except item 49 (I feel able to ask the questions I want) scored  $2.2067 \pm 1.2056$ ,  $2.1407 \pm 1.1600$ ,  $2.2280 \pm 1.1212$ , for 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students, respectively. There is a statistical significant difference (at  $p \leq 0.05$ ) between three years students perception regarding items 34 (The atmosphere is relaxed during the ward teaching).

DREEM nursing students' social self perception subscale (**table, 3**). The analysis of individual SSSP subscale, as regard 4<sup>th</sup> year students, all item scored between 2.00 and 3.00. Item 15 (I have good friends in the school) has scored more than 3.00 ( $3.0133 \pm 1.1890$ ). From 3<sup>rd</sup> and 2<sup>nd</sup> year students point of view, item 19, (My social life is good) has mean score  $1.6444 \pm 1.2122$ ,  $1.3684 \pm 1.1464$  and item 46 (My accommodation is pleasant), which has a mean score of  $1.9629 \pm 1.2602$ ,  $1.7192 \pm 1.1712$ , respectively. The other items scored between 2.00 and 3.00. There is a statistical significant difference (at  $p \leq 0.05$ ) between three years students' perception regarding items 14 and 15 (I am rarely bored on this course and, I have good friends in the school)

The scores were compared on the basis of the items as well. Of the 50 mean item scores, for 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students, 20 items, respectively, are found to be below 2.0. 3 items to be above 3.0 for all 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students are true positive points, as shown in **Table 4**. The highest score being 3.3407 (Item 2: The teachers are knowledgeable.) is observed among 4<sup>th</sup> year students, while, the lowest score being 1.3684 (Item 19: My social life is good) is perceived by 2<sup>nd</sup> year students.

#### Discussion:

Educational environment as the spirit of teaching and learning activities is a major determinant of

developing motivation in medical students. It would play an important role in academic achievement, satisfaction and success (**Arabshahi, Koohpayehzadeh & Khamseh, 2008**). Therefore, in order to implement a good and appropriate learning environment, we need to understand the concept of the learning environment and implement it in our faculty appropriately (**ALCI, 2009**). There is growing body of evidence that recognition of the importance of educational climate/environment is effective in student learning. Students' perception of the environment has a significant impact on their behavior, academic progress and sense of well-being (**Al-Rukban, Khalil & Al-Zalabani, 2010**). So, the present study is to identify nursing students' perceptions of the educational environment at Tanta University

As is observed in this study, the scores for all five DREEM subscales reflected positive perceptions by 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year students, which is just a level below the highest category of achievable scores. In addition, these rating indicated that there is an ample room for improvement in all five domains of the educational environment. As shown in **table (1)** results of study revealed that the global mean score of the 4<sup>th</sup> year students (112.420) with mean percent 56.2% was higher than what observed mean scores in 3<sup>rd</sup>, and 2<sup>nd</sup> year students (107.20, 107.140) with mean percent 53.6%, 53.5%, respectively. This means that global DREEM score of nursing students' perceptions of the educational environment of the faculty of nursing were more positive than negative. These scores are similar to the scores found by (**Said et al., (2009)**) who observed that overall mean DREEM scores of 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year students' were in the range of 105.83 to 112.20 (**Till, 2004**), (113/200)

**Mayya and Roff (2004)**, (107.44/200) **Lokuhetty et al., 2010**, also, **Kossioni et al (2011) & Jiffry et al (2005)** were reported that overall DREEM mean score was 56% of students in a Greek Dental School and 108/200, 54% of students in medical school in Sri Lanka.

A few studies have yielded higher total DREEM scores than the present study which may reflect that these institutions are fairly innovative in terms of providing a student-centered approach to education (**Brown, Williams & Lynch, 2011**), as in study of **Sayed, El-Sayed and Abdel Rahman (2012)** who found overall DREEM mean score of students (143.9/200). In addition, this results are inline with **Demirören et al., (2008 )** who found that year 3 students had a more positive perception of the educational environment than year 1 and 5 students and, **Roff (2005)** from Nepalese students showing the highest scores was for year 3 students. That is because of an inevitable adaptation period for 2<sup>nd</sup> and 3<sup>rd</sup> year, just graduated from 11,12 years of a traditional education system to a completely different learning and teaching environment, should not be disregarded as a factor for the lower scores of 3<sup>rd</sup> and 2<sup>nd</sup> year as well. (**Sayed et al., 2012**)

As shown in **Table (1)**, the highest mean percentage score is 59.4%, 57.6% and 56.6% for 2<sup>nd</sup>, 4<sup>th</sup> and, 3<sup>rd</sup> year students respectively, are for students' perception of teachers with mean score 26.114±5.1315, 25.366±5.3813 and 24.911±6.3038 respectively, while, nursing students' lowest mean percentage is 48.7%, 48.6% and 47.8% for 2<sup>nd</sup> 4<sup>th</sup>, and 3<sup>rd</sup> year students' perception of atmosphere with mean score 23.386±6.3323, 23.333±6.7033 and 22.948±6.8668, respectively. This may

explained by teachers are knowledgeable, well prepared for their teaching and stimulate students to participate in teaching sessions. Teachers are good at communicating with students, and teaching help the students to develop professional competence as well as and the students are feel that the curricular content was relevant to a career in nursing. On the other hand they feel that there is no opportunity to develop their interpersonal skills. Also they are complaining about the effect of stress, which inhibited their motivation as learners, in which students perceived that the curriculum was overcrowded and had time-table issues In addition, the problem of cheating were of concern to students as evidenced in **table (3), (Zaini, 2003)**. These findings are consistent with the results found by **Demirören et al (2008)** who reported that highest score in students' perceptions of teachers and lowest score in students' perceptions of atmosphere.

As shown in **table (2)**, results of this study showed that more than half of 4<sup>th</sup>, 3<sup>rd</sup> and 2<sup>nd</sup> year responded more positively than negatively to DREEM, this means that there are undeniable need for improvement on many items in particular areas of educational environment (**Ömer Tontuş, 2010 and Said et al., 2009**) who supported this results and found that the Kulliyyah of Nursing, IIUM has achieved a more positive than negative status, and also **Lokuhetty et al., (2010)** who found that more than half of students responded 'more positively than negatively' to DREEM at The University of Colombo, Faculty of Medicine (UCFM).

Findings of present study showed that more than half of 4<sup>th</sup>, 3<sup>rd</sup> and 2<sup>nd</sup> years reported a more positive approach regarding their perception of learning, observing their teachers



"moving in right direction", feeling more on the positive side for their academic self perception, (**table, 2**). 50% of 4<sup>th</sup> and 3<sup>rd</sup> feeling more on the positive side for their academic self perception. These results should be stimulating for the curriculum planners to transform students' perceptions about their educational environment to a higher level (**Sayed et al., 2012**) While more than half of 2<sup>nd</sup> year had many negative aspects on academic self perception (SAS). This result indicates that students felt stressed by the academic demands of the course and fact that students were not confident about being able to memorize all needed information, and use their previous learning strategies, This may reflects the anxiety level of examination or exhaustion level due to curriculum overload (**Zaini, 2003, AyedI & Sheik, 2008**). This perception was similarly expressed by students in another study by **Pierre et al., (2010)**

More than half of 4<sup>th</sup> and 2<sup>nd</sup> year perceived that there are many issues which need to change in the faculty atmosphere (**table, 2**). This may be due to a problem of cheating in faculty and students the experience disappointing as shown in **table (3)** and also it may be found some serious problems in teaching learning activities and the relationship between the teacher as a supervisor- mentor and the student as a learner who should be gradually independent are impaired (**Arabshahi et al., 2008**) This result is supported by **Pierre et al., (2010)** who found that students rate atmosphere poor.

More than half of 2<sup>nd</sup> year social self perceptions were "not a nice place", this may be due to the undergraduate curriculum is still in the traditional mode and students too tired to enjoy with their courses as shown in **table (3)**. Generally, it is teacher

centered, discipline based, information gathering and hospital based with no options or elective modules. The main part of the curriculum consists of lecture, practical and ward-teaching classes with a limited number of problem based session. The learning task is to reproduce the subject matter in the final examination (**Nahar et al., 2010**) and indicates that nursing students spend most of their time studying, they become relatively isolated from their family social contact, and most of their problems are not relevant to the university support services. So, there is an urgent need to establish a students' support system, which aspires to help students succeed in their study, to make them feel confident in their studies and to feel at ease in their social environment (**Zaini, 2003** ).

As shown in **Table (3)**, results of present study showed that there were of the 50 mean item scores, students in 4<sup>th</sup>, 3<sup>rd</sup> and 2<sup>nd</sup> year scored items 8 (The teachers ridicule the students\*), 9 (The teachers are authoritarian \*), 39 (The teachers get angry in class\*), 50 (The students irritate the teachers\*), 17 (Cheating is a problem in this school\*) and 35 (I find the experience disappointing\*), are negative items scored  $2.0600 \pm 1.4057$ ,  $2.5733 \pm 1.0889$ ,  $2.3133 \pm 1.2698$ ,  $2.0667 \pm 1.2187$ ,  $2.1200 \pm 1.2687$ ,  $2.0592 \pm 1.2740$ ,  $2.1842 \pm 1.2377$  and  $2.0133 \pm 1.1584$ ,  $2.1259 \pm 1.1553$ ,  $2.0526 \pm 1.1887$  for 4<sup>th</sup>, 3<sup>rd</sup>, and 2<sup>nd</sup> year students, respectively. Indicating that the students' disagreement with these items and teachers are still wearing their traditional hats. The individual items scored between 2.00 and 3.00, could be improved to enhance the educational environment at nursing faculty. The individual items scored from 2.0 and less than 3.0 as aspects of the educational environment that could be enhanced

As evidenced in **table (4)**, 20 items respectively of individual items are found to be below 2.0, these items should be examined more closely, as they indicate problem areas of environment that require further exploration to pinpoint and rectify the underlying problems. Three items found to be above 3.0 for nursing students this indicates that it is a true positive point, as in individual items (the teachers are knowledgeable, I am encouraged to participate in class. and I have good friends in the school). Nearly these findings are consistent with the findings of **Nahar et al., (2010)**. However, not a single item scored 3.50 or higher, which means there is no particularly excellent aspect of the educational environment of nursing environment. Although this lack of any excellent aspect may be considered a shortcoming at the moment, it only means that we have a lot of room for improvement and improvisation in the faculty educational environment (**Arzuman et al., 2010**)

There is a statistical significant differences between nursing students in 4<sup>th</sup>, 3<sup>rd</sup> and 2<sup>nd</sup> years with their educational environments, for the SPoL subscale items, in items 4 and 9 (The teaching is sufficiently concerned to develop my competence and, I am clear about the learning objectives of the course), in item 15 (The teachers ridicule the students) regarding SPoT subscale, items 28 (I am able to memorize all I need). regarding students' academic self perception, items 32 (The atmosphere is relaxed during the ward teaching) regarding students' perception of atmosphere, items 46 and 47 (I am rarely bored on this course and, I have good friends in the school) regarding students' social self perception as shown in **table (3)**, this may be caused by the higher expectations and knowledge

(**Soemantri, Roff & McAleer, 2008**). Moreover, the apparent differences in how the different groups experienced the learning environment at the nursing faculty highlight differences in their degree of experience and curriculum in three academic years. For instance, it is possible to identify some stress points among fourth year students due to their more challenging teaching and learning activities **Said et al., (2009)**, this indicates that respondents are far from happy with the educational climate.

#### **Conclusion:**

Remedial measure should be needed in the subscales for the three years students' perceptions of atmosphere, as well as students' academic self perception and students' social self perceptions for 2<sup>nd</sup> year students need further improvement

#### **Recommendations:**

In the light of the findings, the following recommendations are suggested;

- Prepare detailed documentation for the Curriculum Committee on the findings of the DREEM inventory as baseline information for the next curriculum review.
- Review the traditional curriculum in light of the new trends of nursing education that Egypt culture and contribute to faculty outcomes.
- Introduce some of the new trends in nursing education, such as integration of problem-based learning (PBL), and community-based teaching.
- Provide information on student perceptions of their learning environment to each faculty's member. This will potentially influence each member in facilitating the planning and implementation of student-centered (rather than teacher-dominated) curriculum.

- Plan and implement a strategic faculty development programme to focus on student centered learning for academic staff members.
- Provide strong student support facilities for counseling, sporting and cultural activities on the campus. The faculty should be aware that students need to not only focus on their studies but should also have the opportunity to experience extra-curricular activities and meaningful experiences on campus.
- Improve scheduling so students are kept informed and prepared for their learning activities.
- Create a harmonious learning environment during students' clinical postings and provide them with detailed, clinical learning objectives.
- Stimulate and facilitate students' efforts at integrating theory components with practice and help them to approach learning as a lifelong process, rather than as mere factual learning.
- Reward teachers for excellence in teaching and leadership so that they are motivated in their careers.

**Table (1): Dundee Ready Educational Environment Measure (DREEM) subscale and global mean, standard deviation and percentage scores for nursing students**

Subscales	Maximum score	Mean $\pm$ SD (Percentage)		
		4 <sup>th</sup> year (n =150)	3 <sup>rd</sup> year (n=135)	2 <sup>nd</sup> year (n=114)
Students' Perception of Learning	48	26.926 $\pm$ 4.9032 (56 %)	26.525 $\pm$ 4.88499 (55.2%)	26.632 $\pm$ 5.1940 (55.5%)
Students' Perception of Teachers	44	25.366 $\pm$ 5.3813 (57.6 %)	24.911 $\pm$ 6.3038 (56.6%)	26.114 $\pm$ 5.1315 (59.4%)
Students' Academic Self-Perception	32	17.486 $\pm$ 4.5535 (54.6 %)	17.548 $\pm$ 4.4213 (54.8%)	16.763 $\pm$ 4.5589 (52.4%)
Students' Perception of Atmosphere	48	23.333 $\pm$ 6.7033 (48.6 %)	22.948 $\pm$ 6.8668 (47.8%)	23.386 $\pm$ 6.3323 (48.7%)
Students' Social Self-Perception	28	14.953 $\pm$ 3.2322 (53.4%)	15.267 $\pm$ 3.3772 (54.5%)	14.246 $\pm$ 3.1889 (50.9%)
<b>Global DREEM score</b>	<b>200</b>	<b>112.420<math>\pm</math>24.0182 (56.2 %)</b>	<b>107.20<math>\pm</math>18.0446 (53.6%)</b>	<b>107.140<math>\pm</math>16.9981 (53.5%)</b>

DREEM = Dundee Ready Education Environment Measure

**Table (2): Comparison of DREEM domain scores for three years nursing students:**

		Categorization of Subscales (%)					
Subscales		4 <sup>th</sup> year (n=150)		3 <sup>rd</sup> year(n=135)		2 <sup>nd</sup> year (n=114)	
<b>Students' Perception of Learning</b>	Very poor	0	(0.00%)	0	0.00%	0	0.00%
	Teaching is viewed negatively	46	(30.7%)	44	32.6%	37	32.5%
	A more positive perception	104	(69.3%)	91	67.4%	75	65.8%
	Teaching highly thought of	0	0.00	0	0.00%	2	1.7%
<b>Students' Perception of Teachers</b>	Abysmal	4	(2.7%)	6	4.4%	2	1.7%
	In need of some retraining	27	(18%)	33	24.5%	21	18.4%
	Moving in the right direction	119	(79.3%)	90	66.7%	85	74.6%
	Model teachers	0	(0.00%)	6	4.4%	6	5.3%
<b>Students' Academic Self-Perception</b>	Feelings of total failure	8	(5.3%)	8	5.9%	4	3.5%
	Many negative aspects	58	(38.7%)	49	36.3%	59	51.8%
	Feeling more on the positive side	76	50.7%)	70	51.9%	49	43%
	Confident	8	(5.3%)	8	5.9%	2	1.7%
<b>Students' Perception of Atmosphere</b>	A terrible environment	7	(4.7%)	9	6.7%	4	3.5%
	There are many issues which need changing	77	(51.3%)	62	45.9%	65	57.1%
	A more positive atmosphere	65	(43.3%)	64	47.4%	43	37.7%
	A good feeling overall	1	(0.7%)	0	0.00%	2	1.7%
<b>Students' Social Self-Perception</b>	Miserable	2	(1.3%)	3	2.2%	2	1.7%
	Not a nice place	60	(40%)	50	37%	70	61.4%
	Not too bad	86	(57.4%)	80	59.3%	41	36%
	Very good socially	2	(1.3%)	2	1.5%	1	0.9%
<b>Global DREEM score</b>	Very poor	1	(0.7%)	0	0.00%	0	0.00%
	Plenty of problems	43	(28.7%)	45	33.3%	39	34.2%
	More positive than negative	99	(66%)	90	66.7%	75	65.8%
	Excellent	0	(0.00%)	0	0.00%	0	0.00%

DREEM = Dundee Ready Education Environment Measure

**Table (3): Mean and standard deviation scores for DREEM nursing students' perception of learning subscale (Max = 4)**

Scale items	Mean $\pm$ SD			ANOVA P-value
	4 <sup>th</sup> year(n=150)	3 <sup>rd</sup> year(n=135)	2 <sup>nd</sup> year(n=114)	
<b>1-Students' perception of learning (SPoL)</b>				
1. I am encouraged to participate in class	3.1431 $\pm$ 1.0270	2.5555 $\pm$ 1.2073	3.2842 $\pm$ 1.0751	0.5526 0.5758
7.The teaching is often stimulating	2.5490 $\pm$ 1.0062	2.2148 $\pm$ 1.1288	2.3070 $\pm$ 1.0899	0.6293 0.5334
13.The teaching is student-centered	2.4902 $\pm$ 1.0074	2.3777 $\pm$ 1.1516	2.4385 $\pm$ 1.0973	0.0938 0.9104
16.The teaching is sufficiently concerned to develop my competence	2.6667 $\pm$ 1.1624	2.0962 $\pm$ 1.1321	1.5175 $\pm$ 1.1384	8.6200 0.000*
20.The teaching is well focused	2.3400 $\pm$ 1.0919	2.4518 $\pm$ 1.0976	2.6666 $\pm$ 1.1183	1.4208 0.2427
22.The teaching is sufficiently concerned to develop my confidence	2.3600 $\pm$ 1.1309	2.0370 $\pm$ 1.2778	2.1929 $\pm$ 1.3428	1.4377 0.2386
24.The teaching time is put to good use	2.1333 $\pm$ 1.2077	1.8370 $\pm$ 1.2708	1.9210 $\pm$ 1.3641	0.3204 0.7259
<b>25.The teaching over-emphasized factual learning</b>	2.5800 $\pm$ 1.1128	1.9481 $\pm$ 1.3232	1.7982 $\pm$ 1.1838	0.4546 0.6349
38. I am clear about the learning objectives of the course	2.2733 $\pm$ 1.2999	1.8740 $\pm$ 1.1996	1.5350 $\pm$ 1.1065	3.5417 0.02*
44.The teaching encourages me to be an active learner	1.9267 $\pm$ 1.2854	2.4666 $\pm$ 1.2801	2.6403 $\pm$ 1.1531	0.9094 0.4035
47.Long term learning is emphasized over the short term	2.1000 $\pm$ 1.2247	2.3777 $\pm$ 1.1320	2.5438 $\pm$ 1.0317	0.9787 0.3767
<b>48.The teaching is too teacher-centered</b>	2.3267 $\pm$ 1.1262	2.2888 $\pm$ 1.1121	2.3859 $\pm$ 1.1937	0.2401 0.7865
<b>Total mean score</b>	<b>26.9267<math>\pm</math>4.9032</b>	<b>26.5259<math>\pm</math>4.8849</b>	<b>26.6315<math>\pm</math>5.1940</b>	<b>1.2501</b> <b>0.287</b>
<b>2-Students' perception of teachers(SPoT):</b>				
2. The teachers are knowledgeable	3.1333 $\pm$ 1.1212	3.3407 $\pm$ 1.1715	3.1491 $\pm$ 0.9887	4.9739 0.0073
6. The teachers are patient with patients	2.4733 $\pm$ 1.1568	2.3407 $\pm$ 1.2104	2.6052 $\pm$ 1.1568	1.8060 0.1656
<b>8.The teachers ridicule the students</b>	2.0600 $\pm$ 1.4057	2.3555 $\pm$ 1.4323	2.00 $\pm$ 1.3370	2.9112 0.05*
<b>9.The teachers are authoritarian</b>	2.5733 $\pm$ 1.0889	2.4592 $\pm$ 1.0773	2.5789 $\pm$ 1.2039	0.6514 0.5218
18.The teachers have good communication skills with patients	2.5867 $\pm$ 1.0374	2.3851 $\pm$ 1.3326	2.3333 $\pm$ 1.2456	0.8648 0.4218
29.The teachers are good at providing feedback to students	2.3933 $\pm$ 1.2472	2.2444 $\pm$ 1.3127	2.3684 $\pm$ 1.2212	0.4852 0.6159
32.The teachers provide	2.3000 $\pm$ 1.0728	2.2370 $\pm$ 1.0452	2.3508 $\pm$ 1.1596	0.3633

constructive criticism here				0.6955
37.The teachers give clear examples	2.4133±1.2271	2.2592±1.2811	2.5877±1.1885	2.5205 0.0817
<b>39.The teachers get angry in class</b>	2.3133±1.2698	1.5481±1.0489	1.4298±0.9952	0.1367 0.8722
40.The teachers are well prepared for their classes	2.4267±1.1547	2.3037±1.2475	2.4736±1.1537	0.8500 0.4281
<b>50.The students irritate the teachers</b>	2.0667±1.2187	2.0370±1.2602	2.2368±1.2919	0.7706 0.4633
<b>Total mean score</b>	<b>25.3667±5.3813</b>	<b>24.9111±6.3038</b>	<b>26.1140±5.1314</b>	<b>2.0551 0.129</b>
<b>3-Students' academic self perception(SSAP):</b>				
5. Learning strategies which worked for me before continue to work for me now	2.6000±1.0427	2.6370±1.1170	2.4385±1.1447	1.1778 0.3090
10. I am confident about passing this year	2.4800±1.0789	1.5037±1.0357	1.4649±1.1224	0.0688 0.9335
21. I feel I am being well prepared for my profession	2.2467±1.1639	2.2814±1.1437	2.0964±1.1671	0.8167 0.4426
26. Last year's work has been a good preparation for this year's work	2.1933±1.0342	2.2444±0.9809	2.2807±1.1011	0.2748 0.759
<b>27. I am able to memorize all I need</b>	2.1467±1.2921	2.2814±1.3307	1.8245±1.3712	3.8450 0.022*
31. I have learned a lot about empathy in my profession	2.4133±1.1303	2.4222±1.1555	2.3859±1.1406	0.0845 0.9189
41. My problem-solving skills are being well developed here	2.1600±1.2748	1.9925±1.3186	2.1842±1.2730	1.3486 0.2607
45. Much of what I have to learn seems relevant to my career.	2.2200±1.1920	2.1851±1.2707	2.0877±1.2088	0.2840 0.7528
<b>Total mean score</b>	<b>17.4867±4.5535</b>	<b>17.5481±4.4213</b>	<b>16.7631±4.55896</b>	<b>0.8844 0.413</b>
<b>4-Students' perception of atmosphere(SPoA):</b>				
11.The atmosphere is relaxed during the ward teaching	1.7733±1.3318	2.0074±1.3576	1.6228±1.3850	3.7531 0.02*
12.This school is well timetabled	1.5533±1.2345	1.5777±1.1999	1.4912±1.3119	0.1496 0.8610
<b>17.Cheating is a problem in this school</b>	2.1200±1.2687	2.0592±1.2740	2.1842±1.2377	0.3202 0.7261
23.The atmosphere is relaxed during lectures	1.8133±1.1723	2.0444±1.1121	2.2456±1.2088	1.4652 0.2322
30.There are opportunities for me to develop interpersonal skills	1.9000±1.1914	1.8666±1.1768	1.9298±1.1576	0.0978 0.9068
33. I feel comfortable in the class socially	1.9067±1.2815	1.80±1.3089	1.9649±1.3097	0.4997 0.6070
34.The atmosphere is relaxed during seminars /tutorials	1.8133±1.3229	1.6888±1.3464	2.0298±1.3015	1.0840 0.3392
<b>35. I find the experience disappointing</b>	2.0133±1.1584	2.1259±1.1553	2.0526±1.1887	0.1084 0.8972
36. I am able to concentrate well	2.0800±1.1787	1.9259±1.1566	1.9385±1.1619	0.1556 0.8558
42.The enjoyment outweighs the	2.0400±1.1921	2.0296±1.2395	1.9649±1.1592	0.0935

stress of studying medicine				0.9107
43. The atmosphere motivates me as a learner	1.7667±1.2392	1.6814±1.2557	1.8333±1.2615	0.5139 0.5985
49. I feel able to ask the questions I want	2.2067±1.2056	2.1407±1.1600	2.2280±1.1212	0.1875 0.8290
<b>Total mean score</b>	<b>23.3333±6.7033</b>	<b>22.9481±6.8668</b>	<b>23.3859±6.3322</b>	<b>0.2635 0.768</b>
<b>5-Students' social self perception(SSSP):</b>				
3. There is a good support system for students who get stressed	2.1267±1.4013	2.2444±1.4427	2.2385±1.4346	1.5245 0.2190
<b>4. I am too tired to enjoy this course</b>	2.3133±1.1879	2.3037±1.1543	2.2192±1.2029	0.1641 0.8486
14. I am rarely bored on this course	2.1933±1.1509	2.3185±1.1372	2.00±1.1288	2.8618 0.05*
15. I have good friends in the school	3.0133±1.1890	2.4592±1.2564	2.8070±1.1815	3.3215 0.03*
19. My social life is good	2.5667±1.1551	1.6444±1.2122	1.3684±1.1464	2.1195 0.1214
28. I seldom feel lonely	2.3200±1.1661	2.3333±1.1395	2.1929±1.2612	0.5231 0.5930
46. My accommodation is pleasant	2.1600±1.2374	1.9629±1.2602	1.7192±1.1712	1.2607 0.2845
<b>Total mean score</b>	<b>14.9533±3.2322</b>	<b>15.2666±3.3772</b>	<b>14.2456±3.1889</b>	4.4988 0.011*

\* *Negative item*

**Table (4): DREEM items with scores greater than 3.0 or less than 2.0**

Subscale	Items	Mean scores		
		4 <sup>th</sup> year	3 <sup>rd</sup> year	2 <sup>nd</sup> year
<b>Students' perception of learning</b>	1- I am encouraged to participate in class.	3.1431	—	3.2842
	16- The teaching is sufficiently concerned to develop my competence.	—	—	1.5175
	24- The teaching time is put to good use	—	1.8370	1.9210
	25- The teaching over-emphasized factual learning.	—	1.9481	1.7982
	38- I am clear about the learning objectives of the course.	—	1.8740	1.5350
	44- The teaching encourages me to be an active learner	1.9267	—	—
<b>Students' perception of teachers</b>	2- The teachers are knowledgeable	3.1333	3.3407	3.1491
	39- The teachers get angry in class	—	1.5481-	1.4298-
<b>Students' academic self-perception</b>	10- I am confident about passing this year	—	1.5037	1.4649
	27- I am able to memorize all I need	—	—	1.8245
	41- My problem-solving skills are being well developed here	—	1.9925	—
<b>Students' perception of atmosphere</b>	11- The atmosphere is relaxed during the ward teaching	1.7733	—	1.6228
	12- This faculty is well timetabled	1.5533	1.5777	1.4912
	23- The atmosphere is relaxed during lectures	1.8133	—	—
	30- There are opportunities for me to develop interpersonal skills	1.9000	1.8666	1.9298
	33- I feel comfortable in the class socially	1.9067	1.80	1.9649
	34- The atmosphere is relaxed during seminars /tutorials	1.8133	1.6888	—
	36- I am able to concentrate well	—	1.9259-	1.9385-
	42- The enjoyment outweighs the stress of studying nursing	—	—	1.9649-
	43- The atmosphere motivates me as a learner	1.7667	1.6814-	1.8333-
<b>Students' social self perception</b>	15- I have good friends in the school	3.0133	—	—
	19- My social life is good	—	1.6444	1.3684
	46- My accommodation is pleasant	—	1.9629	1.7192

**References:**

- Abraham R., Ramnarayan K., Pallath V., Torke Sh., Madhavan, M & Roff S. (2008): Perceptions of academic achievers and under-achievers regarding learning environment of Melaka Manipal Medical College (Manipal campus), Manipal, India, using the DREEM Inventory. South East Asian Journal of Medical Education pp18-24. <http://www.biomedcentral.com/1472-6920/8/20>. (Date of access 21/9/2011)
- Aghamolaei T. & Fazel I. (2010): Medical students' perceptions of the educational environment at an Iranian Medical Sciences University BMC Medical Education, 10:87 <http://www.biomedcentral.com/1472-6920/10/87>. (Date of access 15/8/2011)
- Al-AyedI, H. & Sheik, S.A. (2008). Assessment of the Educational Environment at the College of Medicine of King Saud University.



- Department of Pediatrics, Department of Family & Community Medicine, Volume 14 No. 4 July - August, (Date of access 15/5/2011)
- **ALCI B. (2009):** Perceptions of Students of Yeditepe University, Faculty of Medicine about Educational Environment .The New Journal of Medicine, 26: 205-209. (Date of access 71/8/2011)
  - **AlRukban M.O, Khalil M.S & Al-Zalabani A. (2010):** Learning environment in medical schools adopting different educational strategies. Educational Research and Reviews Vol. 5(3), pp. 126-129, March. Available online at <http://www.academicjournals.org/ERR2> (Int,D) (Date of access 1/4/2011)
  - **Arabshahi K.S., Koohpayehzadeh J. & Khamseh, M.E. (2008):** Investigation of Educational Climate in Major Clinical Wards in Iran University of Medical Sciences (IUMS) Based on DREEM Model. Journal of Medical Education Winter and spring 12 (1, 2): 11-15. [www.sid.ir](http://www.sid.ir). (Date of access 19/9/2011)
  - **Arzuman H., Yusoff M.S.B., & Phong S. (2010):**Big Sib Students' Perceptions of the Educational Environment at the School of Medical Sciences, Universiti Sains Malaysia, using Dundee Ready Educational Environment Measure (DREEM) Inventory. Malaysian J Med Sci. Jul-Sep, 17(3): 40-47(Date of access 22/3/2011)
  - **Brown T., Williams B., & Lynch M. (2011):** The Australian DREEM: evaluating student perceptions of academic learning environments within eight health science courses. International Journal of Medical Education, 2:94-101 (Date of access 20/9/2011)
  - **Davis M. H. (2002):** Principles of Curriculum Development. University of Dundee: Centre for Medical Education. (Date of access 21/9/2011)
  - **Demiroren M., Palaoglu O., Kemahli S., Ozyurda F. & Ayhan HI. (2008):** Perceptions of Students in Different Phases of Medical Education of Educational Environment: Ankara University, Faculty of Medicine. <http://www.med-ed-online.org>. (Date of access-20/9/2011)
  - **Dunn S. V. & Burnett, P. (1995):** The development of a clinical learning environment scale. Journal of Advanced Nursing, 22, 1166-1173. [www.usm.my/mjms](http://www.usm.my/mjms). (Date of access 11/4/2011)
  - **Jiffry MT., McAleer S., Fernando S. & Marasinghe R.B. (2005):** Using the DREEM questionnaire to gather baseline information on an evolving medical school in Sri Lanka. Med Teach. 27(4):348-352. (Date of access 15/5/2011)
  - **Kossioni A. E., Varela R., Ekonomu I., Lyrakos G. & Dimoliatis I. D. K. (2011):** Students' perceptions of the educational environment in a Greek Dental School, as measured by DREEM. European Journal of Dental Education. doi: 10.1111/j.1600-0579.2011.00678.x (Date of access 15/5/2011)
  - **Lai, N.M., Nalliah S., Jutti R.C, Hla Y.Y & Lim V.K.E. (2009):** The Educational Environment and Self-perceived Clinical Competence of Senior Medical Students in a Malaysian Medical School Education for Health, Volume 22, Issue 2, Available from: <http://www.educationforhealth.net/> Date of access 17/8/2011)
  - **Lokuhetty D.S.M., Sachini P, Warnakulasuriya S.P, Perera R I.R, De Silva H. T. R & Wijesing H. D. (2010):** Students' perception of the educational environment in a Medical Faculty with an innovative curriculum in Sri Lanka. South East Asian Journal of Medical Education, Vol. 4 no. 1:9-16.( Date of access 22 /3/2011)
  - **Mayya S.S. & Roff, S. (2004):** Students' perceptions of educational environment: A comparison of academic achievers and under-achievers of Kasturba Medical College, India, Education for Health, 17(3), pp. 280-91.( Date of access 1/4/2011)
  - **Nahar N., Talukde, H.K., Khan T.H, Mohammad S.h & Nargis T. (2010):**

- Students' Perception of Educational Environment of Medical Colleges in Bangladesh [BSMMU J; 3(2): 97-102.( Date of access 1/4/2011)
- **Ömer Tontuş H. (2010):** DREEM; dreams of the educational environment as its effect on education result of 11 Medical Faculties of Turkey. J. Exp. Clin. Med., 27:104-108. (Date of access-21/9/2011)
  - **Pierre RB, Branday JM., Pottinger A. & Wierenga A. (2010):** Students' Perception of the 'Educational Climate' at the Faculty of Medical Sciences, the University of the West Indies, Jamaica. West Indian Med J; 59 (1): 45. (Date of access 20/9/2011)
  - **Roff S. (2005).** The Dundee Ready Educational Environment Measure (DREEM) – a generic instrument for measuring students' perceptions of undergraduate health professions curricula. Med Teach.27 (4):322–5. (Date of access 16/5/2012)
  - **Roff S., McAleer, S., Harden R., Al-Qahtani M., Uddin A.A., Deza, H., Groenen G., & Primparyon P. (1997):** Development and validation of the Dundee Ready Education Environment Measure (DREEM), Medical Teacher, 19(4), pp: 295-299. ( Date of access 15-5-2011)
  - **Said N.M., Rogayah J. & Hafizah A. (2009):** A study of learning environments in the Kulliyyah (faculty) of nursing, international islamic university Malaysia Malaysian Journal of Medical sciences, Vol. 16, no. 4, 15-24, October–December. (Date of access 29/3/2011)
  - **Sayed H.Y., El-Sayed N.G. & Abdel Rahman N B. (2012).** Students' perceptions of the educational environment of the nursing program in Faculty of Applied Medical Sciences at Umm Al Qura University, KSA. Journal of American Science, 8(4) <http://www.americanscience.org>. (Date of access 16/5/2012)
  - **Shuell T. J. (1996);** in Handbook of Educational Psychology (eds. Berliner, D. C. & Calfee, R. C.) 726-764 (Simon & Schuster Macmillan, New York., (Date of access-11/4/2011)
  - **Soemantri1 D., Roff S. & McAleer S. (2008).** Student perceptions' of the educational environment in the midst of curriculum change. Educational environment, Vol .17, No. 1, January – March, 57-63 (Date of access 15/8/2011)
  - **Till H. (2004):** Identifying the perceived weaknesses of a new curriculum by means of the Dundee Ready Education Environment Measure (DREEM) Inventory. Med Teach. 26(1):39–45. (Date of access 20/9/2011)
  - **Zaini R. (2003):** Use of the Dundee Ready Educational Environment Measurement (DREEM) for Curriculum Needs Analysis in the Faculty of Medicine & Medical Sciences at Umm Al-Qura University, Saudi Arabia. University of Dundee Centre for Medical Education Dundee, Scotland UK, Master's degree, pp23-24. Date of access: 21/9/2011

