**Student’s attitudes toward effective factors in lecturing didactic dental courses**

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**ABSTRACT**

**Introduction:** Effective communication between educators and students is essential in the learning process. Knowledge of student attitudes toward effective teaching methodologies can be used for future development of dental faculty. The purpose of this study was to investigate dental student attitudes toward effective factors affecting quality of well-delivered didactic dental courses in classrooms.

**Materials and Methods:** This descriptive cross-sectional study was performed between 130 dental students at clinical stage (4-6 years) in academic year 2012-2013 in Babol University of Medical Sciences. The questionnaires were consisted of 36 items and further categorized into four dimensions: (1) Educators, (2) Academic Administration, (3) Course content and (4) Classrooms physical environment. After confirmation of content validity and reliability, they were filled by students. Students’ agreement with each item in the questionnaire was measured using 5-point Likert scale. Descriptive statistics of the data and statistical analysis, t-test and Pearson correlation coefficient, were used. P<0.05 was considered significant.

**Results:** Ninety-eight students responded with response rate of 75 percent. Oral presentation skills and integrated logical order of content in relation to educators, early detailed course plan and visual aids such as instructional videos in relation to course content, were the most important factors recognized by student to influence quality of didactic dental course presentations in the classrooms. Future dental faculty development requires investments, trainings, and support.

**Conclusion:** Dental educators should analyze predominant learning styles of students and change dental curriculum in a way to provide an optimal learning experience.

**Key words:** Dental education, dental students, didactic courses, educators, student attitudes

**Introduction**

A problem that challenges many educators, especially young and inexperienced educators is effective learning of students during didactic dental lectures. A query that would engage an educator’s mind is whether teaching methods have synchronously evolved with advancements in dentistry and how students perceive different factors as effective in a classroom environment.

Over the year’s traditional information-importing lectures which students remained as passive listeners have been gradually replaced by active learning strategies with more direct engagement of student in the learning process. Presenting some parts of lecture topics by students through participation in case-based conferences is an example of such methods that some educator use during lectures. Educators have perceived that these methods will increase retention of course materials by students⁶ and can be used across many disciplines.⁷

In addition to presentation skills of educators and student motivations, other factors such as design and management of curricula, classroom settings, course content and teaching/learning aids will significantly affect students learning.⁸ Many authors evaluated different designs of the dental curriculum all over the world in an attempt to find methods that are effective and efficient in applying science and in developing critical thinking and attitudes.⁹ Many authors evaluated different designs of the dental curriculum all over the world in an attempt to find methods that are effective and efficient in applying science and in developing critical thinking and attitudes. This study was performed between 130 dental students at clinical stage (4-6 years) in academic year 2012-2013 in Babol University of Medical Sciences. The questionnaires were consisted of 36 items and further categorized into four dimensions: (1) Educators, (2) Academic Administration, (3) Course content and (4) Classrooms physical environment. After confirmation of content validity and reliability, they were filled by students. Students’ agreement with each item in the questionnaire was measured using 5-point Likert scale. Descriptive statistics of the data and statistical analysis, t-test and Pearson correlation coefficient, were used. P<0.05 was considered significant.

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**Conclusion:** Dental educators should analyze predominant learning styles of students and change dental curriculum in a way to provide an optimal learning experience.
trends and challenges in implementing curricular changes in dental education, and it was found that training new faculty members in teaching skills, curriculum design, and assessment methods play significant roles. In fact teaching methods, type, quality and extend of integrating educational technologies can solicit learners attention and facilitate their learning process and end-of-course examination results.

Other studies found that students inability to memorize the course content decrease their attitudes toward learning and subsequently causes students failure to apply them into clinical situations. Some authors studied the effect of curriculum changes in which practical courses presented before didactic lectures with resultant positive effects on student attitudes toward learning. In a study by Monzavi et al. instructor's ability to be expressive and well-organized was the most important factor in presenting an effective lecture. Adib Hajbagheri in a study found the appropriate use of a PowerPoint presentation (a form of multimedia) improves attitudes toward teaching and motivates students to learn. However, sole dependence on the use of PowerPoint in the classroom can reduce interactions during lecture sessions, and it can adversely affect student's interest in this form of media.

Since students are primary beneficiaries of course content in didactic dental lectures, students' rating of instruction is a substantial measure of teaching effectiveness. Therefore, knowledge of student attitudes toward factors that constitute effective lecturing in classrooms can be used to guide future development in dental education. Considering the consensus of authors on complexity of teaching activities with multiple interrelated factors, it can be presumed that mutual knowledge of effective factors in didactic lectures by students and educators can increase teaching effectiveness, improve students' learning, and finally can be used in planning future development and improvements in dental education.

Thus, this study aimed to investigate dental student attitudes regarding factors that can affect teaching effectiveness of didactic dental lectures in an Iranian dental school.

Materials and Methods

This descriptive cross-sectional study conducted in academic year 2012-2013 and 130 dental students in fourth, fifth, and sixth year in a dental college participated which were representing dental students in clinical years in Babol University of Medical Sciences. A questionnaire was designed from previous sources and modified according to the comments from selected students and lecturers for format, content, and readability.

Educators within the faculty who had extensive experience in survey design also reviewed the instrument and provided recommendations that were incorporated into the final version. Educational facilities and classroom setting of the college of dentistry were considered when designing the questionnaire. A pilot survey was taken from 10 randomly selected students in clinical stages by authors. Content validity was based on a poll from educators and students. Cronbach's α reliability was calculated 93% that shows the homogeneity of index items. After confirmation of questionnaires, the research protocol was approved by the Institutional Ethical Committee of the university.

The students were participated voluntarily and the questionnaire did not require any names. Brief explanations were given before distribution of questionnaire. Questionnaires were distributed by authors during different lecture timing and students were asked to return their responses within 1 week. Questionnaires were consisted of two parts. First part was enquiries about participant personal information and educational background. Second part was comprised of 36 multiple-choice questions about effective factors in teaching didactic dental courses in classrooms that were categorized into four dimensions; factors related to educators, contents, classrooms setting, and factors related to the academic administration. Every question has been calculated with Lickret's five choice scale; 1. Totally disagree 2. Disagree 3. No idea 4. Agree 5. Totally agree.

Effect of gender, admission quota (regional zone type quota 1, 2, 3 or martyr family) and semester grade point average (GPA) of the students on questionnaire score were statistically analyzed by chi-square, t-test and Pearson correlation coefficient. \( P < 0.05 \) was considered statistically significant. SPSS version 18 software were used for data analysis.

Results

Among 130 students in clinical stage (4th, 5th, and 6th year), 98 students responded with response rate of 75% (Male: 47.4%, female: 56.6%). Average GPA was 15.85 ± 2.17 out of 20, and 93.2% were students entered with regional zone quota privileges and 6.8% used other forms of entrance privileges.

Table 1 shows students responses to effective factors in classrooms that were related to educators. This result shows that student rate well-organized (86.7%) and expressive verbal skills of educators (83.7%) as most effective factors in relation to educators. Student identified that changing lecture timing from 7:15 to 8:00 am was an important effective factor related to college academic administration office [Table 2].

Factors perceived in relation to the course content [Table 3] and physical settings of classrooms [Table 4] were availability of lecture outlines early before course presentation (86.6%), educational videos and using technological teaching aids for more effective learning (71.5%). No significant difference was found between male and female student in relation to perceived effective factors in relation to didactic lectures. Pearson correlation coefficient also showed no significant
Abesi, et al.: Student attitudes toward teaching

Discussion

Most of the student in this study believed that dental educators should be able to organize the sequence of topics, acquire presentation skills, be expressive, be enthusiastic about the topic and avoid passive lectures. PowerPoint presentations are one of the widely used means during lectures and make learning more efficient and helps students to organize and structure their note-taking. When PowerPoint slides are properly designed, it can enhance students' motivation, increase student learning and develop an interactive lecturing. Students also believed that lecture presentation slide must be available, similar to other resources such as booklets. Educators also should consider students' attention span during lectures. Incorporating innovative pedagogical techniques can be used to overcome the problem of the short attention span of students. Using audio/visual teaching aids were the other perceived effective factors that influence students learning in classrooms. Lecturing topics in detail were not perceived as mandatory for effective lecturing and received only 50% agreement. The overall result of this study is consistent with the previous study, however, order of student preferences and priorities of effective factors were nor similar.

Young educator's performance, unlike previous study, was not better than experienced clinicians. Faculty development requires leadership, teaching and learning, promoting research and providing services. New faculty members should be
Table 3: Distribution, mean and standard deviation of perceived effective factors related to course content

<table>
<thead>
<tr>
<th>Items</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Mean and standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic content should be interesting to the student to engage their attention</td>
<td>56.3</td>
<td>24.4</td>
<td>8.1</td>
<td>3.79±0.85</td>
</tr>
<tr>
<td>Having slides presentation is not enough, slides presentation should be purposed oriented and augment educators verbal presentation</td>
<td>75.5</td>
<td>17.3</td>
<td>7.1</td>
<td>4.04±0.87</td>
</tr>
<tr>
<td>It not necessary for general dentists to learn topics related to dental specialties</td>
<td>33.7</td>
<td>25.5</td>
<td>40.8</td>
<td>2.83±1.10</td>
</tr>
<tr>
<td>Knowledge and exposure to specialty topics helps making appropriate referrals</td>
<td>58.1</td>
<td>31.6</td>
<td>9.2</td>
<td>3.70±0.86</td>
</tr>
<tr>
<td>It is necessary for the student to know the rationale for theoretical materials that will not be used in clinical situations</td>
<td>38</td>
<td>36.7</td>
<td>15.3</td>
<td>3.53±0.99</td>
</tr>
<tr>
<td>It is important to revise reference textbooks in classrooms</td>
<td>62.2</td>
<td>25.5</td>
<td>12.3</td>
<td>3.70±1.00</td>
</tr>
<tr>
<td>Some didactic lectures are necessary to be represented for the second time after clinical practice</td>
<td>62.2</td>
<td>24.4</td>
<td>13.2</td>
<td>3.71±0.99</td>
</tr>
<tr>
<td>PowerPoint presentation of educators should be available for students</td>
<td>74.7</td>
<td>9.1</td>
<td>6.1</td>
<td>4.21±0.84</td>
</tr>
<tr>
<td>Taking notes during lectures facilitates learning.</td>
<td>75.7</td>
<td>18.3</td>
<td>6.1</td>
<td>4.06±0.95</td>
</tr>
<tr>
<td>Dental educators and departments should provide students with detailed course outline and lecture topics at beginning of semester</td>
<td>78.6</td>
<td>16.3</td>
<td>5.0</td>
<td>4.19±0.92</td>
</tr>
<tr>
<td>Dental educators should be aware of dental curriculum and prior training student have received</td>
<td>81.6</td>
<td>13.3</td>
<td>5.0</td>
<td>4.24±0.90</td>
</tr>
<tr>
<td>Dental educator should inform student about necessary topics that will required by student to prepare for forthcoming semesters</td>
<td>69.4</td>
<td>24.5</td>
<td>6.1</td>
<td>3.98±0.91</td>
</tr>
</tbody>
</table>

Means and standard deviation     45.8±6.51

*Table shows the percentage of student ratings.

Table 4: Distribution, mean and standard deviation of perceived effective factors related to physical classroom settings

<table>
<thead>
<tr>
<th>Items</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Mean and standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom design allows only those who sat in front to pay attention to lectures</td>
<td>42.8</td>
<td>35.7</td>
<td>21.4</td>
<td>3.33±0.97</td>
</tr>
<tr>
<td>Classroom capacities are less than required for 60-70 students</td>
<td>55.1</td>
<td>31.6</td>
<td>12.2</td>
<td>3.71±1.04</td>
</tr>
<tr>
<td>Limited lecture time and large number of students prevents use of questioning techniques during lectures</td>
<td>47.9</td>
<td>34.7</td>
<td>17.5</td>
<td>3.35±1.07</td>
</tr>
<tr>
<td>Lack of audio-visual teaching aids wastes lecture time</td>
<td>36.7</td>
<td>52.0</td>
<td>11.3</td>
<td>3.26±0.88</td>
</tr>
<tr>
<td>Using appropriate instructional videos are very helpful in some dental subjects</td>
<td>72.5</td>
<td>20.3</td>
<td>7.1</td>
<td>3.92±0.86</td>
</tr>
<tr>
<td>Strong visual display technologies facilitates learning</td>
<td>72.5</td>
<td>19.3</td>
<td>8.1</td>
<td>4.06±0.97</td>
</tr>
<tr>
<td>Entrance design of classrooms disturbs lecture presentation</td>
<td>59.2</td>
<td>33.6</td>
<td>7.2</td>
<td>3.88±1.02</td>
</tr>
<tr>
<td>Means and standard deviation</td>
<td>25.45 ±4.16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table shows the percentage of student ratings.

encouraged through promoting scholarships of teaching and learning. A previous study has also supported training of young educators in teaching skills for prospective modernization.[8]

Another important trend in traditional lectures is lack of interaction.[5] Instructors usually present lectures from their perspectives, and the need for student interaction is often overlooked. Availability of hand-outs before lectures can increase interaction by allowing student to focus during lecture instead of taking notes. These hand-outs can provide additional information, review of important points and further resources are found to have positive effects on students’ academic performance.[22-24] Educators also should be careful about student tendency to depend on hand-outs only, instead of recommended further readings. Nonetheless, educators should promote students’ note-taking skills during lectures. It will strengthen their skills to listen, read, organize, integrate, and utilize information for patient care.[6] Previously its shown that students who take notes during lectures outperform those who only attend the lectures, in their final exams.[8] In the present study, 75% of students agreed that taking notes in lectures affects students’ learning.[1] Students can benefit from availability of topics before the lectures thus helping them to be prepared for the lecture and provides clues about the readings.[27] Students rated knowledge about course plan before the lectures as one of the most important factors that helps students’ concentration during lectures. This should not decrease their motivation to attend the classes, as some student may assume that all the information’s are available in hand-outs. Educators can give homework assignments to improve self-discipline, perseverance, and time management.
Students identified content integration, oral presentation skills and enthusiastic teaching, early course plan and a list of course topics before lecture presentations as effective factors in learning.

Future dental faculty development requires investments, trainings, and support. Dental educators should analyze predominant learning styles of students and change dental curriculum in a way to provide an optimal learning experience.

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References


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