Evaluation of educational programs of pediatrics, orthodontics and restorative departments of Babol dental school from the perspective of the students based on the CIPP model

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Abstract

Introduction: Evaluation is a critical issue to achieve the goals of academic education. The aim of this study was to evaluate the achievement level of educational objectives in Babol dental school using the CIPP (content, input, process, and product) model based on the point of view of students.

Materials & Methods: This cross-sectional study was performed using a researcher made questionnaire based on CIPP model for three educational groups of pediatrics, orthodontics and restorative dentistry among dental students accepted in 2008 and 2009. Total scores were calculated for each field and categorized as undesirable, relatively desirable and desirable with scores below 50, 51-70 and 71-100, respectively. Statistical analysis was performed using ANOVA, T-test and Tukey HSD tests and p<0.05 was considered significant.

Results: The mean scores were desirable in all groups. Mean scores allocated to the content, input, process and product areas were not significantly different in the pediatrics, orthodontics and restorative dentistry groups.

Conclusion: Based on the student’s point of view, the pediatrics, orthodontics and restorative dentistry departments of Babol dental school were successful in achieving educational goals.

Keywords: Educational models, Dental student, Education, Evaluation

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ارزشیابی برنامه‌های آموزشی بخش‌های کودکان، ارتودنسی و ترمیمی دانشگاه دندانپزشکی
بابل از دیدگاه دانشجویان بر اساس الگوی CIPP

میترا طبری، زیبا نورعلی، سمیه فرهنگی خانی، ایمان جهانیان *

چکیده
مقدمه: ارزشیابی امری ضروری برای دستیابی به هدف‌های آموزش عالی می‌باشد. این مطالعه به هدف اهداف آموزشی در دانشگاه دندانپزشکی با تکنیک الگوی CIPP [زمینه (محوار)، درون داد، فرآیند، پرون داد] از دیدگاه دانشجویان انجام شد.

مواد و روش‌ها: این مطالعه از نوع مقطعی با استفاده از یک برسی‌نمایی مبتنی بر الگوی CIPP در سه گروه اطلاع، ارتودنسی و ترمیمی در میان دانشجویان وردودی و آموزشی در سال‌های 88 تا 87 و 51 تا 71 به ترتیب نامطلوب، نسبتاً مطلوب و مطلوب در نظر گرفته شد. نتایج آماری با استفاده از آزمون های مانگو والکاس-آنونا تیتست و Tukey HSD تناژ p < 0.05 معیار دار نظیرگرفته شد.

یافته‌ها: با توجه به نتایج الگوی CIPP بسیاری از نیازهای در همه گروه‌ها مطلوب بود. میانگین نیازهای اخلاقی دانشجویان، ارتودنسی و ترمیمی معیار دار نبود.

نتیجه گرفته: بر اساس نظر دانشجویان، گروه‌های اطلاع، ارتودنسی و ترمیمی دانشکده دندانپزشکی بابل در دستیابی به اهداف آموزشی موفق بودند.

واژگان کلیدی: مدل‌های آموزشی، دانشجویان دندانپزشکی، آموزش، ارزشیابی

Introduction

Looking at the developments in academic education indicates that the current educational system has been facing many challenges over the last two decades, increasing in number of accepted dental students in universities, reduction of the quality of the university education, inapplicability of the university education in the workplace and the increased numbers of universities regardless of the existing capacity and economic power of the society for accepting graduates can be mentioned.\textsuperscript{1} Considering the improvement in the quality of academic education is essential and reporting the quality indicators of this academic education system requires a careful evaluation of the system.\textsuperscript{1} Studies show that measuring the quantitative and qualitative evaluation of medical education environments in medical schools, identifying strength and weakness points in educational programs and accessing the students', faculties’ and staffs’ point of view is important; on the other hand it is a significant indicator in predicting educational outcomes.\textsuperscript{2} One of the assessment tools of teaching methods and evaluating a clinical educational system is using the students' point of view.\textsuperscript{3}

The CIPP model was used to design an evaluation template and this template was presented by Stufflebeam et al. aimed to help managers and decision makers consider that "the main objective of the evaluation is to improve not prove ".

The CIPP model makes it possible for evaluators to assess the program at any time during the development, design, and even the implementation and completion stages.\textsuperscript{4}

The CIPP is formed as the first letters of the following words: Content, Input, Process, and Product. This template is used to help evaluating the key aspects of the program, including:

Content evaluation: The purpose of this evaluation is to provide a rational context to determine educational purposes;

Input evaluation: In this stage, the required information about how to use resources are collected to achieve program goals;
Process evaluation: In this stage, “how to perform the program” is evaluated; this stage attempts to answer questions such as:

 Is the program well implemented? What are the obstacles to success? What changes are necessary?

Product evaluation: In this step, it becomes clear what the results are; the results are compared with the goals of the program, and the relationship between expectations and actual results are determined.\(^5\)

Makarem et al. (2012) used the CIPP evaluation model and concluded that, from the students' point of view, the content, input and process areas of the oral health education program were relatively desirable but the product area was undesirable.\(^6\)

Pakdaman et al. (2011) assessed the achievement level of educational goals in periodontics and oral health groups based on the point of view of dental students of Tehran University of Medical Sciences with the CIPP model and the results showed that there was a significant difference in the two areas of content and process between the two groups and subheads in these two areas needed to be revised.\(^7\)

The aim of this study was to evaluate the educational programs and assess the achievement of learning goals in the pediatrics, orthodontics and restorative departments of Babol University using the CIPP model as one of the most important and widely used models for evaluation from the view point of the students.

**Materials & Methods**

In a cross-sectional study the study population are all accepted dental students in 2008 and 2009 (graduates of 2014 and 2015) of Babol University of Medical Sciences. Pediatrics, orthodontics and restorative dentistry departments were evaluated based on CIPP model. The reason for choosing these three departments was the consistency and close relation of their contents. Data collection tool was a questionnaire designed based on the educational objectives for each department, in accordance with the educational curriculum. The validity of questionnaire was checked by three faculty members of Babol dental school. The reliability of questionnaire was also calculated by test-retest method within 10 days (Cronbach's alpha 0.97) in the randomly selected department.

In the first part of the questionnaire, questions about students' personal characteristics, including gender, age and year of entry were asked. In the next section of the questionnaire for the evaluation of the field, the educational policies and educational environment were examined for pediatrics, orthodontics and restorative dentistry departments of Babol dental school. The number of questions in this parts consisted of four questions. The number of questions in this area contained four questions. Input evaluation of the study was to assess the input elements to the training program that included the following: planning, equipment, budget and human resources. Eight questions were designed for this purpose. In the process evaluation, problems related to student learning, continuous evaluation process of teaching and learning which included five items were examined.

The product evaluation assessed student satisfaction for the outcome of the education and its applicability in pediatrics, orthodontics, and restorative departments. The total number of questions was 117.

Oral explanations were given to the students about the study by the researcher and an anonymous questionnaire would be sent to them at the end of the semester (the 2008 accepted students have received the questionnaires by email). The Yes, Somewhat and No answers were used to determine the content, input and process and product. For the statistical comparison, the yes option had 3 points, the Somewhat 2 points and no received zero point. The product evaluation was ranged five options: very low, low, medium, high and very high, and for the statistical comparison, 1 to 5 points were assigned. Then, for illustrative classification in frequency presentation, very low and low options were mixed in the low group and high and very high were mixed in the High group. Total obtained scores were calculated for each area separately and for having comparable scores in each area, the obtained scores from each area were reduced to 100. In analyzing the results, an average of less than 50 was considered as undesirable, between 51 and 70 was relatively desirable and 71 to 100 was considered as desirable.

Data were analyzed by SPSS version 21 using analysis of variance (ANOVA), Tukey HSD test and T-test. \(P <0.05\) was considered statistically significant.

**Results**

The population of the study included all the students accepted in 2008 (32 persons) and 2009 (29 persons) that graduated in 2013-2014 over 61 cases. Sampling in this study was a census method. 81.25%
and 89.65% dental students accepted in 2008 and 2009 responded to the questionnaires; respectively. 69.2 % of all respondents were female.

From the perspective of students, achieving educational objectives were desirable in the area of the content, input and process in the pediatrics, orthodontics and restorative departments. Comparison of three areas of content, input and process was performed using ANOVA test and the difference was not significant in these three areas. Table 1 showed desirability level on content, input and process areas in all studied groups.

From the perspective of the 2009-accepted students, only in the input area, there was a significant difference, and consequently achieving the educational objectives in the pediatric group had no significant difference with the restorative group, but was significantly higher than the orthodontic group (P=0.045).

The viewpoints of the accepted students in 2008, within the content of the process areas, were not significantly different, but a significant difference was reported within the Input area of the orthodontic (P=0.023) and restorative dentistry (P=0.021) groups.

Table1: Desirability level on content, input and process areas in three educational groups (%)

<table>
<thead>
<tr>
<th>Content area</th>
<th>pediatrics</th>
<th>orthodontics</th>
<th>restorative dentistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the materials presented in the relevant group related to the material presented in other groups?</td>
<td>85.2</td>
<td>83.9</td>
<td>86.5</td>
</tr>
<tr>
<td>Are the materials presented in the relevant group adjusted to your needs as a dentist?</td>
<td>88.4</td>
<td>69.2</td>
<td>76.2</td>
</tr>
<tr>
<td>Is the time (term) of presenting theoretical unit appropriate?</td>
<td>86.5</td>
<td>79.4</td>
<td>81.4</td>
</tr>
<tr>
<td>Is enough time allocated to the respective unit?</td>
<td>81.4</td>
<td>77.5</td>
<td>64.7</td>
</tr>
<tr>
<td>Input area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is course content adjusted to the needs of students?</td>
<td>84.6</td>
<td>74.3</td>
<td>85.8</td>
</tr>
<tr>
<td>Are sufficient resources (materials) and equipments provided to students in practical education?</td>
<td>82</td>
<td>78.2</td>
<td>81.4</td>
</tr>
<tr>
<td>Is sufficient educational resources for the study of the relevant group (theoretical and practical) provided to students?</td>
<td>80.1</td>
<td>85.8</td>
<td>76.9</td>
</tr>
<tr>
<td>Is the number of patients sufficient for practical educational?</td>
<td>83.9</td>
<td>78.8</td>
<td>73.7</td>
</tr>
<tr>
<td>Is the number of teachers consistent and adequate for students?</td>
<td>78.2</td>
<td>76.9</td>
<td>92.9</td>
</tr>
<tr>
<td>Is the professors’ supervision sufficient during students’ performance?</td>
<td>91</td>
<td>88.4</td>
<td>90.3</td>
</tr>
<tr>
<td>Do the teachers have enough educational skills?</td>
<td>89.1</td>
<td>85.8</td>
<td>85.2</td>
</tr>
<tr>
<td>Do the nursing staff have enough cooperation with students?</td>
<td>85.2</td>
<td>92.3</td>
<td>90.3</td>
</tr>
<tr>
<td>Process area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any problem with teaching?</td>
<td>23.7</td>
<td>25</td>
<td>26.9</td>
</tr>
<tr>
<td>Is there necessary correspondence between education theory and its application in practical work?</td>
<td>69.8</td>
<td>66.6</td>
<td>62.1</td>
</tr>
<tr>
<td>Is the amount of materials adjusted to the educational needs?</td>
<td>83.3</td>
<td>81.4</td>
<td>80.7</td>
</tr>
<tr>
<td>Is the educational material presented in the proper time?</td>
<td>82.6</td>
<td>85.8</td>
<td>87.8</td>
</tr>
</tbody>
</table>

A comparison among the content, input and process areas is reported in table 2 for all students divided by their university entry year. The most desirable points for the content area was reported in pediatrics ,for the Input area was in the restorative group, for the process area was in orthodontics, and for the product area was in the restorative group, but not significant statistically. Among the evaluated indicators, the highest score was belonged to consistency of the number of professors with the students in the restorative department, which is a subset of input with the average score of 92.9%. The least score was also belonged to the ability to diagnose and understand the principles of trauma treatment in pediatrics department, which is the subset of product with an average score of 58.9%. Area of content was considered desirable about all the questions from the students’ viewpoint except consistency of the presented subjects with the needs of students in the Department of orthodontics and the time dedicated to the restorative was relatively desirable (table1). In addition, all the indicators within the area of Input in all groups were reported desirable. The area of Process was reported.
Evaluation of educational program (in Babol Dental School)

desirable for all indicators except consistency between theoretical education and its application in practical work which was reported relatively desirable in all three groups (table 1). In the area of Product, four indicators; diagnosis and treatment of trauma, tooth hypoplasia, ankylosed teeth, and space management were relatively desirable and other indicators were reported desirable in the pediatrics group (table 3). From the perspective of the students, the area of product in orthodontics group was desirable in all evaluated indicators. The frequency of answers to these questions and the desirability level of the CIPP product area belonging to the orthodontic group are reported in table 4. In the area of Product in the restorative group, among 17 assessed indicators only one indicator; knowing the bleaching principle, was relatively desirable and other indicators (94.1 percent) were reported desirable. The frequency of answers to these questions and the desirability level of the CIPP product area belonging to the restorative group are reported in table 5.

Table 2. Mean and standard deviation, the percentage of desirability of the content, Input and process areas divided by their acceptance year within the pediatrics, orthodontics and restorative groups

<table>
<thead>
<tr>
<th>Acceptance year</th>
<th>Areas/Indicators</th>
<th>Content</th>
<th>Input</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Pediatrics</td>
<td>10.23±2.141</td>
<td>82.9</td>
<td>20.58±4.606</td>
</tr>
<tr>
<td></td>
<td>Orthodontics</td>
<td>9.73±2.146</td>
<td>76.8</td>
<td>21.96±4.359</td>
</tr>
<tr>
<td></td>
<td>Restorative</td>
<td>9.96±2.144</td>
<td>74.6</td>
<td>22.35±4.261</td>
</tr>
<tr>
<td></td>
<td>P-value</td>
<td>0.703</td>
<td>0.320</td>
<td>0.736</td>
</tr>
<tr>
<td>2009</td>
<td>Pediatrics</td>
<td>10.42±2.266</td>
<td>87.7</td>
<td>22.81±5.238</td>
</tr>
<tr>
<td></td>
<td>Orthodontics</td>
<td>9.85±1.488</td>
<td>78.1</td>
<td>19.23±4.013</td>
</tr>
<tr>
<td></td>
<td>Restorative</td>
<td>10.04±1.612</td>
<td>79.8</td>
<td>19.38±4.674</td>
</tr>
<tr>
<td></td>
<td>P-value</td>
<td>0.511</td>
<td>0.010</td>
<td>0.620</td>
</tr>
<tr>
<td>Total</td>
<td>Pediatrics</td>
<td>10.33±2.185</td>
<td>85/3</td>
<td>21.69±5.012</td>
</tr>
<tr>
<td></td>
<td>Orthodontics</td>
<td>9.79±1.829</td>
<td>77/5</td>
<td>20.62±4.371</td>
</tr>
<tr>
<td></td>
<td>Restorative</td>
<td>10±1.879</td>
<td>77/2</td>
<td>20.87±4.674</td>
</tr>
<tr>
<td></td>
<td>P-value</td>
<td>0.376</td>
<td>0.465</td>
<td>0.502</td>
</tr>
</tbody>
</table>

Table 3. Distribution of answers to questions about the ability of achievement to educational goals in the pediatrics group in product area

<table>
<thead>
<tr>
<th>Questions</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Desirability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health education to children and their parents</td>
<td>3(5.8)</td>
<td>9(17.3)</td>
<td>40(75.9)</td>
<td>90.3</td>
</tr>
<tr>
<td>2. Behavior management of children in the clinic</td>
<td>8(14.4)</td>
<td>28(53.8)</td>
<td>16(30.8)</td>
<td>71.7</td>
</tr>
<tr>
<td>3. Detailed examination of the mouth and teeth of children</td>
<td>6(11.5)</td>
<td>13(25.0)</td>
<td>33(63.4)</td>
<td>83.9</td>
</tr>
<tr>
<td>4. Performance and interpretation of intraoral radiography in children</td>
<td>6(11.5)</td>
<td>23(44.2)</td>
<td>23(44.2)</td>
<td>77.5</td>
</tr>
<tr>
<td>5. To perform infiltration and block injection techniques in children</td>
<td>3(5.8)</td>
<td>11(21.2)</td>
<td>38(73.1)</td>
<td>89.1</td>
</tr>
<tr>
<td>6. Carry out prevention techniques (prophylaxis, fluoride, fissure sealant,</td>
<td>5(9.6)</td>
<td>9(17.3)</td>
<td>38(73.1)</td>
<td>87.8</td>
</tr>
<tr>
<td>Preventive Resin Restoration, Stainless Steel Crown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Detection and treatment of primary and permanent tooth decay in children</td>
<td>3(5.8)</td>
<td>18(34.6)</td>
<td>31(59.7)</td>
<td>84.6</td>
</tr>
<tr>
<td>8. Detection of proximal decay</td>
<td>4(7.7)</td>
<td>18(34.6)</td>
<td>30(57.7)</td>
<td>83.3</td>
</tr>
<tr>
<td>9. Treatment of pulp disease in primary and permanent teeth of children</td>
<td>4(7.7)</td>
<td>19(36.5)</td>
<td>29(54.8)</td>
<td>82.6</td>
</tr>
<tr>
<td>10. To recognize and understand the principles of treatment of trauma in children</td>
<td>22(42.3)</td>
<td>20(38.5)</td>
<td>10(19.2)</td>
<td>58.9</td>
</tr>
<tr>
<td>11. Primary teeth extraction</td>
<td>4(7.7)</td>
<td>12(23.1)</td>
<td>36(69.2)</td>
<td>87.1</td>
</tr>
<tr>
<td>12. To diagnose a variety of abscesses and cellulitis in children</td>
<td>9(17.3)</td>
<td>25(48.1)</td>
<td>18(33.6)</td>
<td>72.4</td>
</tr>
<tr>
<td>13. To diagnose types of hypoplasia and discolored teeth</td>
<td>16(30.7)</td>
<td>20(38.5)</td>
<td>16(30.8)</td>
<td>66.6</td>
</tr>
<tr>
<td>14. To diagnose ankylosed teeth</td>
<td>19(36.5)</td>
<td>17(32.7)</td>
<td>16(30.8)</td>
<td>64.7</td>
</tr>
<tr>
<td>15. Space maintenance in cases of early loss of primary teeth</td>
<td>17(32.7)</td>
<td>21(40.4)</td>
<td>14(26.9)</td>
<td>64.7</td>
</tr>
</tbody>
</table>
Questions

1. Knowing the principles of impression of maxilla and mandible and ability to do it

2. The ability to trim the cast of the patient according to standard methods

3. Knowledge of and ability to make orthodontic appliance components

4. The ability to identify patients with Class I malocclusion and monitoring space

5. The ability to diagnose patients with Class II malocclusion and treat by functional or headgear devices

6. The ability to diagnose and treat patients with slight class III malocclusion

7. The ability to identify Open bite patients at the growth age and possible treatment using dental growth and extrusion

8. The ability to identify Deep bite patients and treatment by orthodontic appliance in adolescence

9. The ability to identify patients with anterior dental cross bites and its treatment with removable appliances

10. The ability to identify patients with posterior dental cross bite and its treatment with removable appliances and W_arch

11. Ability to interpret radiographic images and lateral cephalometric

12. The ability to interpret jaw-teeth space on dental casts

13. The ability to estimate the eruption time of permanent teeth

14. The ability to identify patients with anterior dental cross bites and its treatment with removable appliances and W_arch

15. The ability to identify Deep bite patients and treatment by orthodontic appliance in adolescence

Question 1: Low 1(1.9) Average 13(25.0) High 38(73.0) Desirability (%) 90.3

Question 2: Low 2(3.8) Average 24(46.2) High 26(50.0) Desirability (%) 82

Question 3: Low 4(7.7) Average 21(40.4) High 27(51.9) Desirability (%) 71.3

Question 4: Low 1(1.9) Average 26(50.0) High 25(48.1) Desirability (%) 82

Question 5: Low 4(7.7) Average 20(38.5) High 28(53.8) Desirability (%) 82

Question 6: Low 7(13.5) Average 18(34.6) High 27(51.9) Desirability (%) 79.4

Question 7: Low 8(15.4) Average 20(38.5) High 24(46.2) Desirability (%) 77

Question 8: Low 6(11.5) Average 20(38.5) High 26(50.0) Desirability (%) 79.4

Question 9: Low 1(1.9) Average 24(46.2) High 27(51.9) Desirability (%) 83.3

Question 10: Low 4(7.7) Average 20(38.5) High 28(53.8) Desirability (%) 82

Question 11: Low 8(15.4) Average 20(38.5) High 24(46.2) Desirability (%) 77

Question 12: Low 8(15.4) Average 21(40.4) High 23(44.2) Desirability (%) 76.2

Question 13: Low 9(17.3) Average 24(46.2) High 19(36.5) Desirability (%) 73

Question 14: Low 10(19.2) Average 24(46.2) High 18(34.6) Desirability (%) 71.8

Question 15: Low 8(15.4) Average 27(51.9) High 17(32.6) Desirability (%) 72.4

Discussion

The basic question that dental education system planners are always facing is: “Does this educational dentistry system achieve the ideal objectives?” and “Are the students able to provide optimal theoretical and
practical skills to their patients after completing this course?” In this study, four areas of content, input, process and product in the pediatrics, orthodontics and restorative Dentistry Departments of Babol University were studied based on the CIPP model. The results showed that, in the students’ viewpoint, all four areas were desirable to achieve educational objectives in the pediatrics, orthodontics and restorative departments. From the students’ viewpoint, the content area was desirable in all three studied groups, only the indicator of “time devoted to the course” in the restorative group was reported relatively desirable, showing that greater attention should be paid in the training programs.

The findings of Sanatkhaniet al. in the Mashhad Dental School (2009) showed that the total time specified to each clinical section in general dentistry was considered desirable from the viewpoint of the majority of students; these results are consistent with the results of this study. In the study of Borhan Mojabiet al. in Qazvin (2002), students reported that the duration of clinical training was sufficient, except orthodontics which was reported insufficient. However, the students of Babol University are content with the duration of the clinical training in the orthodontic department.

Analysis of the results in the Input area showed that from students’ viewpoint, the content and educational purposes, educational facilities, and the number of clients (patients), the number of teachers, teachers' skills and supervision on students’ performance and cooperation of nurses were desirable.

The findings of Sanatkhanies’s study indicated that students reported the lowest average score for the facilities of the pediatrics department so their results are incompatible with the current study. In a study in Shiraz by Amanat et al., the highest satisfaction in students dealing with faculty and staff was in the department of pediatrics, that is consistent with the present study. The study of BorhanMojabiet al. showed that planning was not proper in terms of the number of professors and students in many departments, and only 31.7% of students reported the good consistency in the number of teachers, which is incompatible with our study. The findings of Sanatkhanie’s study suggested that the majority of students evaluated the supervision of professors on students’ performance in a good level for practical activities and found appropriate number of faculty members in the departments, that is consistent with this study. In this study, four areas of content, input, process and product in the pediatrics, orthodontics and restorative Dentistry Departments of Babol University were studied based on the CIPP model. The results showed that, in the students’ viewpoint, all four areas were desirable to achieve educational objectives in the pediatrics, orthodontics and restorative departments. From the students’ viewpoint, the content area was desirable in all three studied groups, only the indicator of “time devoted to the course” in the restorative group was reported relatively desirable, showing that greater attention should be paid in the training programs.

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experience and confidence level of the students of three
dentistry schools of Liverpool, Manchester and
Sheffield in the field of pediatric dentistry and they
concluded that the clinical experience of students was
sufficient for their future needs. So, 100% of them had
experienced sealant and repair, and 87-98% of them had
experienced a tooth extraction.[12] In the study of Horri
et al. in 2013 in the Dentistry School of Kerman,
students reported their satisfaction with an average of
approximately 75% on the training courses, offered in
practical pediatric courses and appropriate education in
clinic. They rate their ability in tooth extraction,
preventing cavities, and primary tooth restorations as
87.1, 83.9, and 80.7 percent respectively; these results
are compatible with the results of this study.[13]

In the present study, from the students’ viewpoint in
the product area, achieving the educational objectives
was desirable in the orthodontics department.

In the study of Fattahi at the Dentistry School of
Shiraz in 2008, students believed that they were capable
of expressing the characteristics of normal occlusion
and malocclusion, as well as their ability in molding the
chin and providing appropriate arch impressions, these
results are the same as those in our study.[14]

In the study of BorhanMoja
in the students’ viewpoint, no appropriate training for the orthodontic
treatment planning on patients was performed. They
also complained about the short duration of the clinical
training as part of their orthodontic course, that is
incompatible with our study.[9] In this study, in the
Restorative department, the highest capability was
reported in knowing the principles of matrix bar and
wedging techniques, class III restoration with
composite, class IV restoration and the least capability
was reported in knowing the principles of bleaching.

The reason of the relatively desirable ability of
students in the indicator of “knowing the principles of
bleaching” is due to the limitation of this indicator to the
theoretical teaching in the educational curriculum and
students in clinical education do not even see the
demonstration. The study of Khamverdi in Hamedan
(2014) on graduated students indicated that achieving
educational objectives in the theoretical training was
desirable for the Restorative department and these
results were consistent with the results of this study.[15]

Samyari also noted that the majority of students in
shahed and shahed universities needed more theoretical
restorative information, and it seems that the students’
capability in the practical activities was desirable in
both universities that is consistent with the results of
this study.[16] The results of Eslamipour’s study showed
that practical training methods were not enough in the
restorative department. The evaluation criteria were also
unknown in this department and professors’ behavior
with students was reported inappropriate in the presence
of patients; however, these results are incompatible with
the results of the current study.[17] The reason for the
differences between the achievement of educational
goals in this study and the results of other studies can be
the research methodology (the CIPP model versus other
evaluation models) and different facilities and
equipment and other conditions in different universities,
so the result of the studies was reported without any
comparison. The main limitation of this study was the
poor cooperation of some of the students in completing
questionnaires and sending them. They stated the reason
for their reluctance to complete the questionnaire as the
failure to use the results of research and research
projects in the planning from their viewpoints.

It is recommended to evaluate the future graduates
with the new educational curriculum using the CIPP
model due to the changes in dentistry curriculum since
2011, and to compare the future results with the results
of the present study in order to obtain a rigorous and
better basis in planning for the authorities. The sample
size compared to all dental graduates in the country was
non-random and small, so the generalizability should be
interpreted with more caution.

Conclusion
Based on the point of view of 2008 and 2009-
accepted students of Babol dental school, educational
objectives in the pediatrics, orthodontics and
Restorative dentistry departments were desirable.

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**Authors’ Contributions**

The study was designed by Mitra Tabari and Iman Jahanian. The study data were collected by Ziba Nourali. Analysis and interpretation of data, drafting of the manuscript, and critical revision of the manuscript for important intellectual content were pre-formed by Soraya Khafri and Samane Gharekhani. Study supervision was performed by Mitra Tabari and Iman Jahanian.

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