



INTRODUCTION

EVIDENCE-BASED PRACTICE (EBP) is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.¹

WHY ARE EBP SKILLS IMPORTANT?

- Keep up-to-date with rapid changes and advancements
- Learn during training to effectively use skills in future
- Required to critically appraise available evidence
- Required to provide care supported by the best available evidence
- The skill is a Commission on Dental Accreditation (CODA) requirement.³

A LEARNING GAP EXISTS between acquiring the knowledge on EBP and practicing it on clinical scenarios, being assessed on their EBP skills, and receiving feedback.

OUR RESEARCH QUESTION:

"Do the following educational interventions including clinical scenarios improve dental students' Evidence Based Practice learning?"

- A) a lecture-based module and
- B) a team-based creative learning project

METHODS



Figure 1. Study Timeline

STUDENT LEARNING ASSESSED AT 3 TIME-POINTS

- By a questionnaire and an examination
- Assessed by EBP themes modified from the Tilson et al. CREATE framework (Figure 2.)

DATA WAS ANALYZED BY PAIRED T-TESTS

- By overall questionnaire and exam score
- Broken down by the CREATE framework themes

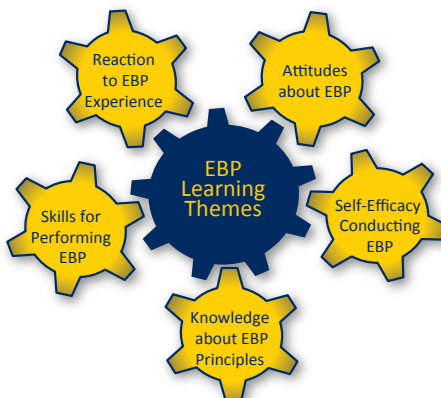


Figure 2. EBP Learning Themes
Modified from the Tilson et al. "CREATE" Framework

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RESULTS AND CONCLUSIONS

OVERALL RESULTS

Questionnaire Results

Table 1. Questionnaire Score Comparisons

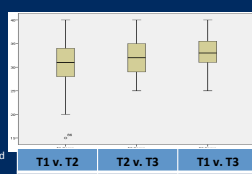
Times	N	Exam Score (Mean, SD)*
T1 v. T2	81	31.0 (4.9) v. 32.4 (3.8)
T2 v. T3	94	32.2 (3.7) v. 33.2 (4.7)
T1 v. T3	85	30.8 (2.6) v. 33.2 (3.2)

Table 2. Mean Difference in Scores

Times	Exam Score (Mean, SD)*	p-value
T1 v. T2	1.4 (4.1)	0.003**
T2 v. T3	1.0 (3.9)	0.017**
T1 v. T3	2.4 (4.6)	<0.001**

*Out of 40 possible points

Figure 3. Mean Difference in Mean Questionnaire Scores



** A p-value of <0.05 was considered statistically significant

Examination Results

Table 3. Examination Score Comparisons

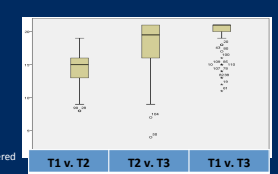
Times	N	Exam Score (Mean, SD)*
T1 v. T2	111	14.2(2.6) v. 18.0(3.6)
T2 v. T3	109	18.0(3.6) v. 20.2(2.0)
T1 v. T3	85	14.5(2.6) v. 20.1(2.1)

Table 4. Mean Difference in Scores

Times	Exam Score (Mean, SD)*	p-value
T1 v. T2	3.5(3.9)	<0.001**
T2 v. T3	2.1(3.3)	<0.001**
T1 v. T3	5.7(3.2)	<0.001**

*Out of 20 possible points

Figure 4. Mean Difference in Mean Examination Scores



** A p-value of <0.05 was considered statistically significant

RESULTS STRATIFIED BY LEARNING THEME

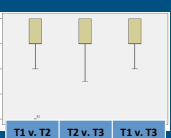
REACTION TO EBP EXPERIENCE

Table 5. Overall Score Comparisons

Times	N	Exam Score (Mean, SD)*
T1 v. T2	81	8.7(1.3) v. 8.8(1.1)
T2		
T2 v. T3	94	8.8(1.2) v. 8.8(1.0)
T3		
T1 v. T3	85	8.7(1.3) v. 8.7(1.0)

*Out of 10 possible points

Figure 5. Mean Difference in Mean Examination Scores



Times	N	Exam Score (Mean, SD)*
T1 v. T2	81	8.7(1.3) v. 8.8(1.1)
T2		
T2 v. T3	94	8.8(1.2) v. 8.8(1.0)
T3		
T1 v. T3	85	8.7(1.3) v. 8.7(1.0)

** A p-value of <0.05 was considered statistically significant

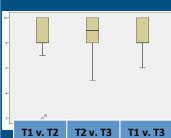
ATTITUDES ABOUT EBP

Table 6. Overall Score Comparisons

Times	N	Exam Score (Mean, SD)*
T1 v. T2	79	8.6(1.2) v. 8.7(1.2)
T2		
T2 v. T3	93	8.8(1.2) v. 8.6(1.0)
T3		
T1 v. T3	84	8.5(1.2) v. 8.6(1.0)

*Out of 10 possible points

Figure 6. Mean Difference in Mean Examination Scores



Times	N	Exam Score (Mean, SD)*
T1 v. T2	79	8.6(1.2) v. 8.7(1.2)
T2		
T2 v. T3	93	8.8(1.2) v. 8.6(1.0)
T3		
T1 v. T3	84	8.5(1.2) v. 8.6(1.0)

** A p-value of <0.05 was considered statistically significant

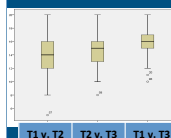
SELF-EFFICACY CONDUCTION EBP

Table 7. Overall Score Comparisons

Times	N	Exam Score (Mean, SD)*
T1 v. T2	87	14.0(3.1) v. 14.9(2.5)
T2		
T2 v. T3	92	14.9(2.6) v. 16.0(2.0)
T3		
T1 v. T3	83	14.0(3.0) v. 16.0(1.8)

*Out of 20 possible points

Figure 7. Mean Difference in Mean Examination Scores



Times	N	Exam Score (Mean, SD)*
T1 v. T2	87	14.0(3.1) v. 14.9(2.5)
T2		
T2 v. T3	92	14.9(2.6) v. 16.0(2.0)
T3		
T1 v. T3	83	14.0(3.0) v. 16.0(1.8)

** A p-value of <0.05 was considered statistically significant

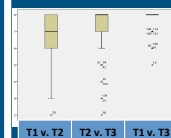
KNOWLEDGE OF EBP PRINCIPLES

Table 8. Overall Score Comparisons

Times	N	Exam Score (Mean, SD)*
T1 v. T2	111	6.7(1.4) v. 7.3(1.2)
T2		
T2 v. T3	109	7.4(1.2) v. 7.7(0.5)
T3		
T1 v. T3	109	6.8(1.4) v. 7.8(0.5)

*Out of 8 possible points

Figure 8. Mean Difference in Mean Examination Scores



Times	N	Exam Score (Mean, SD)*
T1 v. T2	111	6.7(1.4) v. 7.3(1.2)
T2		
T2 v. T3	109	7.4(1.2) v. 7.7(0.5)
T3		
T1 v. T3	109	6.8(1.4) v. 7.8(0.5)

** A p-value of <0.05 was considered statistically significant

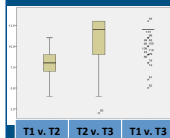
SKILLS FOR PERFORMING EBP

Table 9. Overall Score Comparisons

Times	N	Exam Score (Mean, SD)*
T1 v. T2	111	7.7(1.7) v. 10.6(2.7)
T2		
T2 v. T3	109	10.7(2.7) v. 11.5(1.3)
T3		
T1 v. T3	109	7.7(1.3) v. 11.5(0.3)

*Out of 13 possible points

Figure 9. Mean Difference in Mean Examination Scores



Times	N	Exam Score (Mean, SD)*
T1 v. T2	111	7.7(1.7) v. 10.6(2.7)
T2		
T2 v. T3	109	10.7(2.7) v. 11.5(1.3)
T3		
T1 v. T3	109	7.7(1.3) v. 11.5(0.3)

** A p-value of <0.05 was considered statistically significant

FINDINGS

- Students' questionnaire and exam scores improved at each time point with statistical significance
- Students showed consistently positive reactions to EBP and positive attitudes towards EBP. No significant difference was shown at any time point.
- Statistically significant improvements in student assessments related to Self-Efficacy Conducting EBP, Knowledge about EBP Principles, and Skills for Performing EBP were found between T1 v. T2, T2 v. T3, and T1 v. T3.

Both interventions...

- ...led to improved dental students' EBP learning, demonstrated in the questionnaire and exam scores.
- ...are valuable for student learning related to EBP concepts.
- ...improve student perceptions and learning related to the themes: Self-Efficacy Conducting EBP, Knowledge About EBP Principles, and Skills for Performing EBP

Upon entering the course, students...

- ...have previously developed a high appreciation and value for EBP.
- ...understand the importance of learning EBP skills for their education and future career..

Perhaps the theme most positively impacted by the interventions was Skills for Performing EBP.

Results indicated that the interventions should be tailored toward Self-Efficacy, Knowledge, and EBP Skills.