



Development of an Online Tobacco Cessation Module: Lessons Learned

IUPUI

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ABSTRACT

Using the Curriculum Enhancement Grant (CEG) for funding, presenters developed an online tobacco education module for the IUSD dental and dental hygiene students. The purpose of this poster is to share lessons learned, the results of a student satisfaction survey, and to provide best practice exhibits.

BACKGROUND

Tobacco use is a worldwide public health problem and the primary cause of preventable death and disease in the U.S.¹ In 2008, the U.S. adult smoking rate was 20%; Indiana's (26.1%) was the 2nd highest nationally.² Tobacco use in the IUSD patient population is even higher (general dental clinic, 30%; emergency clinic, 50%).³ However, nearly 70% of smokers desire to quit and clinician-provided interventions significantly increase cessation success.⁴

The U.S. Surgeon General, and the American Dental & Dental Hygienists' Associations have advocated for oral health providers to screen all patients for tobacco use and provide interventions for users.^{4,5} The U.S. Public Health Service Clinical Practice Guideline has established evidenced-based protocols for all health care practitioners to engage in tobacco interventions.⁶ However, comprehensive integration of these protocols by providers has been slow. A frequent barrier is lack of confidence and inadequate training in the skills required to provide such interventions.^{7,8} A 2006 survey of graduating IUSD dental hygiene students found similar barriers.⁹ This highlighted the need to enhance our educational efforts.

Through their competency statements, the American Dental Education Association (ADEA) stresses the need for dental/dental hygiene graduates to have the knowledge, and skills to address tobacco use and dependence. Guided by the ADEA statements, IUSD has developed competencies for the new curriculum, one of which concerns tobacco. The developed module facilitates the incorporation of a comprehensive tobacco education program into the new curriculum for both dental and dental hygiene students and will help fulfill curricular competencies in both programs.

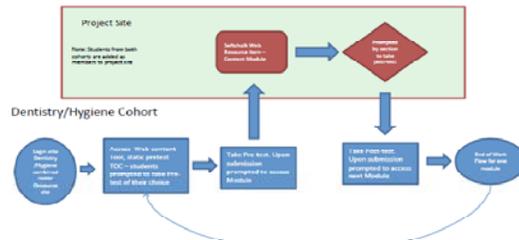
Many have explored online delivery systems and have found them useful adjuncts to traditional educational methodology and delivery approaches in dental education.^{7,8} Additionally many have assessed student perception of online delivery as an adjunct to traditional means of education and most have regarded them favorably.^{9,11}

Utilizing the online module, it is hoped that the system could be developed into a future curriculum model for other IU-associated dental hygiene programs within the state. Further it is hoped that the modules may be used as a continuing education alternative (and the first offered by IUSD) for seasoned practitioners.

METHODS and MATERIALS

The Curriculum Enhancement Grant offered through IUPUI was obtained in order to develop an online tobacco cessation module for dental and dental hygiene students. The project was piloted with 100 first year dental students and 13 second year dental hygiene students. The project consisted of 9 learning units that were organized and delivered within the Oncourse course management system. Content areas of the nine learning sessions included I. About tobacco; II. Addiction; III. Tobacco and General Health; IV. Tobacco: An Oral Health Issue; V. Treatment of Tobacco Dependence; VI. Health Behavior Change; VII. Patient Evaluation; VIII. Developing a Quit Plan; IX. Tobacco Cessation Protocols for the Dental Team. The learning units consisted of sequenced pre-test assessments, narrated presentations, web-based learning activities, videos and post-test assessments. After choosing one of the 9 units, students were funneled through the sequence (see figure below). The intent was to have students completely finish one unit before starting the next. After completing all units, students were asked to take a survey evaluating their satisfaction with the module (IRB EX 1055-30).

Schematic of Student Flow through Project



RESULTS Student Satisfaction Survey

Category	Examples of Most Common Student Comments
General	Need to develop an introduction to explain how the units and the individual learning activities are to be navigated Great use of multi-media Develop a handout for quicker review of content later
Content Units	A variety of technical problems were identified for each of the 9 units including access, proper linking to assessments, general formatting and ease of use Learning activities were fun Video clips were well done I believe I have learned a lot about this topic
Pre/Post Test Assessments	Quizzes were appropriate for the content Was hard to relocate material for taking post-tests Would be helpful if correct answers were provided following post-tests to see how I did Were several technical problems accessing and in responding to the pre/post tests
Learning Activities	I really enjoyed the activities Activities took a long time to load Would be helpful to have explanation for how to complete the activities prior to doing them

RESULTS : Student Performance Pre-Test/Post-Test

Test Units	Whole Class	Dental Hygiene Class
UNIT 1: PRE TEST	45.45	45.45
UNIT 1 POST TEST	46.22	46.19
UNIT 2 PRE TEST	60.51	73.63
UNIT 2 POST TEST	82.24	85.45
UNIT 3 PRE TEST	45.81	58.18
UNIT 3 POST TEST	77.81	98.18
UNIT 4 PRE TEST	66.15	69.66
UNIT 4 POST TEST	78.4	93.93
UNIT 5 PRE TEST	36.34	38.3
UNIT 5 POST TEST	55.49	86.36
UNIT 6 PRE TEST	38.85	51.70
UNIT 6 POST TEST	58.95	81.52
UNIT 7 PRE TEST	60.72	71.81
UNIT 7 POST TEST	74.47	84.54
UNIT 8 CASES	47.84	65.90
UNIT 9 PRE TEST	30.02	33.63
UNIT 9 POST TEST	33.07	43.18

Lessons Learned

- Time spent in planning and developing the units was grossly underestimated
- Amount of technological support needed once the project went "live" was underestimated
- Technology was challenging and we needed more assistance than anticipated in implementing and integrating content into a web-based format
- Selected formative learning activities were not measurable to capture student learning or identify the need for individual remediation
- Some of the formative learning activities did not work as planned
- While there were summative assessments in the form of pre/post tests, no remediation options were available for any student who had not improved sufficiently
- For students to value the project, assimilate the content and apply it in practice, more accountability for meeting minimum standards of student achievement must be incorporated
- Switching from "SoftChalk" to "Oncourse" for the assessment pieces was challenging and did not always work as anticipated
- Students were sometimes frustrated with technical difficulties which may have detracted from their learning
- In the online format, creators did not have control over student integrity in completing the pre/post assessments

A special thanks to IUSD dental & dental hygiene student participants in the project pilot!

CONCLUSIONS

Although there were multiple challenges, ultimately student learning occurred as was illustrated by pre and post-test assessments. However, student performance was not as good as was hoped, likely due to a lack of accountability being built into the pilot for students achieving minimum grade standards. Overall, students seemed to enjoy the online module compared to traditionally delivered content. For tobacco dependence education, it appears that online mechanisms are a viable option in educational methodologies. Nonetheless, ample support in developing, implementing and maintaining such a project is required from both a financial and faculty release time perspective. Additionally, technical support is mandatory both during development and in management of technical issues as they become apparent once implementation has occurred. The module is currently under revision to correct technical, implementation and accountability issues. Full implementation of the online module in both the dental and dental hygiene curricula is planned in 2011.

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Slide 1

SoD1 I would suggest replacing
"seasoned" with private or
community

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