School-Based STI Prevention and CMS-Based Web Delivery: Opportunity, Acceptability, Usability, Effectiveness

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Despite several advantages afforded by school-based STI prevention efforts, adoption, implementation, and effectiveness remain inconsistent for a variety of sociotechnical reasons.

Such efforts may benefit from web-based content management systems (CMS). With CMS, teachers can track learner progress and share implementation ideas; learners can participate in educational activities, including posting their own content; administrators can govern access to content and activities based on content 'tags'; parents can learn about the curricula; and researchers can update and expand content as new information and evidence emerges. Despite these opportunities, no research efforts have explored CMS technologies for delivery of prevention curricula.

Background

Young people are at risk. Recent research indicates:

• 46.8% of high school students had had sexual intercourse during their life
• Adolescents have the highest rates of infection for certain STD

Schools are a well-situated and appropriate venue for interventions:

• 69% of parents indicated sex education was an important part of school curricula
• 98% indicated HIV/STD are appropriate topics for middle and high school students

Problem and Opportunity

Yet school-based efforts remain suboptimal because...

Curricula are like condoms!

• You have to have one   • It has to fit
• You have to have a good one   • You have to use it consistently and correctly

To have a sexual health curriculum that fits and to use it consistently and correctly is not easy. Issues range across adoption, implementation, evaluation & reinforcement.

But a web-based content management system can help by adding features that move beyond media and interactivity toward teacher control and learner engagement.

• Anytime, anywhere delivery moves content beyond the f2f class
• Increased stakeholder awareness and communication
• Highly granular control over access to content through CMS
• Learner progress-tracking and accountability through CMS/LMS
• Support for emergence of communities of practice through forums
• Allows learners the opportunity to generate their own content
• Shifts the scientific accuracy v. acceptability design problem to consumers

Objective

Determine the acceptability, usability, and efficacy of an STI prevention curriculum delivered in schools via web-based CMS.

Methods

A panel of respected STI/HIV experts and practitioners identified objectives and content aligned with national guidelines. The development effort used an iterative, user-centered development methodology guided by well-established pedagogical approaches and strategies coupled with an integrative health behavioral change framework. Usability and efficacy data were gathered from students, teachers, parents, and other stakeholders through mixed-methods single-subject testing and field trials.

Results

CMS-based portals for teachers, parents, and students and a series of media-rich, highly-interactive lessons and activities were developed. The overall site and all its components (Figure 1) were developed. In addition to the web front and backend, a PDA metaphor was developed for accessing lessons and activities.

A panel of national experts approved all content and found the activities to be exemplary. The resulting platform and modules have been well-accepted by students, teachers, and administrators. Identified positive themes (from open feedback) include:

| engagement | online tracking | learner interaction |
| tailorability | replicability | scalability |

Several significant pragmatic issues were identified, particularly around availability of computers, teacher management of classes and groups, and, ironically, loss of control of certain aspects of content. That is, teachers had greater control over what students saw but students had more freedom in their ability to post things.

In a limited field trial among four classes, significant effects were observed on measures of knowledge, willingness and self-efficacy toward partner communication and toward care seeking, and beliefs and attitudes toward risk reduction behaviors.

Conclusions

The pilot demonstrated that a well-designed curriculum can affect valued outcomes and that CMS-based STI prevention materials delivery is acceptable, practical, and can overcome several longstanding barriers to program adoption. However, existing issues, such as implementation fidelity, remain, and may be worsened, and new issues, including how to supervise learner posting of new content, arise. Future efforts should conduct longitudinal studies across a wider range of school-based settings and integrate more ecologically valid measures of skills and of impact on health status. Additionally, while CMS-based web-delivery solves several problems, and opens several additional opportunities, such implementation is complex and requires further research to best capitalize on its positive affordances while minimizes issues.

Implications for Programs, Policy, and/or Research

The opportunities afforded by CMS-based educational/intervention programs are myriad, each coming with social, organizational, technical, and practical benefits and liabilities. Such delivery systems deserve heightened attention as we seek to optimize adoptability, usability, and effectiveness of programs.

www.WSTDtv.org

For More Information...www.academicedge.com.

Academic Edge, Inc. is a media research and development company specializing in state-of-the-art learning tools for children and adults. We particularly focus on the social aspects of health care: why do people do the things they do and how can we help them live healthier, happier, or more productive lives?

Guy Condo
Learn about STI types, diagnosis, and treatment through a fast-paced, arcade game.

KwikZips: The Late Night Edition, Sexuality Education...FAST
Learn about sexual health topics through short animated modules that include reinforcement. Topics include:

What is Sex? • What Should I Do if I Think I Have an STI? • Shame, Embarrassment & Stigma • What is an STI?
How are STIs Transmitted? • How Do I Tell My Partner? • How Do I Reduce My Risk? • How Will a Doc Treat an STI?
How Can I Tell if I Have an STI? • What are Bacterial STI? • What are Parasitic STI? • What are Viral STI?
How to Communicate • How Should I Communicate What I Want in a Relationship?
How Can I Persuade My Partner To Do What's Right? • How Should I Resolve a Disagreement with my Partner?

Spreading it Around
Explore how STI ripple through communities with this simulation of social networks

STI Confidential
Become familiar with sexual health services by visiting a public health clinic, exploring patient cases, and rating the services.

You Better Know This!
Test your sexual health knowledge in this challenging, multiplayer quiz show

You Wanna Do What?
Learn about sexual health communication by critiquing how well others handle their own relationship issues.

Figure 1. WSTDtv Primary Activities