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Using E-Learning Tools to Advance Health Informatics

by
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Yes, using E-learning software[1] in the academic environment works. Relating this same e-learning software in the professional setting for students seeking advanced healthcare degrees is the next logical step.

All students taking the graduate Medical Informatics course at Saint Joseph's College of Maine[2] were practicing healthcare professionals. E-learning software was taken beyond a classroom instrument when the students were challenged to apply academic e-learning concepts to their professional setting. One of the key concepts required to make this successful was to develop learning activities that would be seen as useful and applicable to the professional's work environment. As is true in the traditional educational environment, the E-learning software was able to be accessed anytime, from any computer by the students.

E-learning software was an integral part of each week's class. For example, the course Syllabus was available online, students completed an online survey, and students used the Internet for research. The **Discussion Board** and **Group Pages** provided them an opportunity for sharing team and individual research. These are just examples of how e-learning software "flowed" with their course experience – and challenged students to apply these concepts into their clinical and administrative environments. No hardcopy was used in the classroom. All files used by the instructor were online under **Class Documents**. Can a paperless electronic health record be as easy to use?

Throughout the course, our students (administrators, analysts, physicians, nurses, pharmacists, other clinicians) were asked to brainstorm how each academic e-learning feature might be used in their healthcare environment. For example, when **Discussion Board** was introduced in the classroom, students were asked to envision how this online technique might be used between a clinician and patient to enhance care, reduce the cost of an office visit, and/or save clinician and patient time.

The following applications were explored:

[1] Blackboard[1] Learning System™ www.blackboard.com and myWebCT™ www.webct.com. Both companies have merged under the Blackboard brand.
[2] www.sjcme.edu/

- Use of the **Discussion Board** included having a student assigned each week to coordinate a current medical informatics topic of choice. Each student created an online forum and the remaining students were responsible for researching the topic and posting a summary of their research to this forum. The coordinator used these responses to present a "team" research Power Point presentation. This correlated nicely with the following uses in the provision of health care:

  - Clinicians and patients focus on a topic and share their research and individual conclusions.
  - A Frequently Asked Questions (FAQ) forum can be used by patients to ask questions, review responses, and share their own experiences.

- When the e-learning **Survey** was used for course feedback, students were asked to imagine how administrators surveying patients for office visit satisfaction might use a similar online survey.

- Students observed how documentation could be maintained on-line, including department and organization policies, clinical pathways and clinical protocols, much as the course **Syllabus** was maintained.

- Each week course **announcements** and **web pages** were posted. This included: special medical informatics articles in the news, reminders of the next week's speakers and articles to read. In the professional setting, special offerings of health classes such as for diabetes, Alzheimer's, etc offer similar uses for the e-learning announcement feature.

- Each week the **grades** of presenters were posted. The sign-on password restricted a student to only their grades. Employee Reviews and their confidential nature were examples similar to the grade feature. Does the HIPAA Security Rule now make more sense?

- The **Roster** feature was particularly enlightening to healthcare graduate students. Students were required to maintain an academic and professional profile online, including a personal photograph. Students were asked to envision a patient or clinician posting a picture of a skin lesion to be reviewed by a dermatologist. Students saw how easy it was to take a digital picture and upload and post it online. In confidence, uploaded pictures, such as patient rashes, cuts, etc can be uploaded into patient records. Now the application went from an academic experience to a telemedicine clinical setting.

- Immediate collaboration was demonstrated with **Virtual Office.** The class simulated its use with one person being assigned to be the collaboration leader with the other students contributing. We used virtual office as a brainstorming tool with the leader keeping things on track. We used the Collaboration and Survey tools to evaluate the entire course. Healthcare providers have started to use this collaboration feature, such as Instant Messaging (often called "chat"), to

communicate between patient and clinicians, as well as between clinicians and their support staff.

Conclusion

We encourage healthcare educators to relate student online and classroom e-learning software to the professional environment. When a student relates their academic experience to professional efficiency and communication, patient safety and lower costs follow.

The paperless electronic health record, patient security, telemedicine, patient information, email and virtual communication can all be realized easily through e-learning and each has a potential role in the provision of health care services.

By no means do we limit use of e-learning software to our examples. Through the challenges of brainstorming and collaboration, healthcare professionals seeking advance degrees will accept, promote, and enhance information technology in the clinical and administrative environment.

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