Canadian Journal of Nursing Informatics
http://cjni.net
Volume 2 Number 4 Fall 2007

2nd National Nursing Informatics Conference 2007 Proceedings
Informatics Everywhere: Celebrating the Diversity of Informatics Practice
October 1 -3, 2007 – Holiday Inn on King, Toronto, Ontario

THEME: Educating Nurses Across the Continuum

Integration of ICT into a Nurse Mentorship Program

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Abstract

The current study is a collaborative between York Central Hospital and York University to evaluate a Nurse Mentorship Program that integrated with information and communication technologies (ICTs). The investigators addressed limitations within the organization that ranged from costs to limited access to computers and the Internet. Challenges for nursing staff and educators included skills and confidence with ICT. Gaps in age, gender, and the disparity in familiarity with ICT among new hire and experienced nurses were identified. 'Integration' is the main goal for incorporating ICT into knowledge translation for nurses. One effective method of integration is for nurses to transfer their existing technology skills into the ICT environment.

Emailing and web browsing, which are common skills that nurses have and were the basic ICT development parameters for the program that include both a website and online discussion forums. The website is a cost effective strategy to centralize information about the program. It also made used of popular web-based technology, like You Tube and Google Video, for streaming educational material and video captures for computer training. Online discussion forums are one of the most popular ICTs for nursing on the Internet, which were used in the program for building and sustaining the mentoring relationships through discussing various nursing topics. The program evaluation also follows the theme of integration by utilizing online surveys not only to evaluate outcomes, but also to familiarize nurses to electronic coding methods and assessments. Qualitative evaluation is also integrated by analyzing the discussions between nurses in the online forum.

Introduction

York Central Hospital (YCH) submitted a proposal to Health Human Resources for the design, implementation and evaluation of a mentoring program. Hospitals reported that new graduates were being passed over in the hiring process in favor of experienced nurses. The Ministry of Health and Long-term Care (MOHLTC, 2003) identified that reduction in health service education budgets limited opportunities for development of new staff. The Registered Nurses Association of Ontario, in their report on recruitment and retention in Ontario entitled, *Ensuring Care Will Be There* (2000) reported that one of the key elements to improving retention was the access to education of staff.

The Canadian Nurses Association (2004) in their descriptive report of mentoring programs identified opportunities related to use of technology as a tool to facilitate the learning process recommending that: nurses need to be on par with other health-care professionals in terms of their informatics competencies in clinical practice settings; as use of IT technology is thought to produce a stronger sense of the skills needed to strengthen nursing; encourage innovation and enhance communication and collaboration. Thus, a multi-faceted mentorship program was implemented with an Information and Communication Technology (ICT) component.

The work that motivated the development of ICT for the mentorship project was the Canadian Nurses Association (CNA), E-Nursing Strategy for Canada (2006). Our development process sought out to follow the key themes for improvement that were identified by the CNA: access, competencies, and participation (CNA, 2006).

1. Access

The investigators recognized that improving access can be a terrifying experience for hospital administrators because it often means investing large sums of money and resources that hospitals (do not have) to purchase more computers, software, network and Internet upgrades and furniture, and potentially, the need to create precious office space to house these computers and training cost for staff. Most ICT initiatives will probably not make it pass this stage in terms of funding if the hospital is not already well equipped with these basic technical requirements.

In this mentorship program, to be more cost efficient, the investigators attempted to improve access by understanding and utilizing web technologies of popular media, which are freely available and have been embraced by millions of Internet users. The flexibility of the Internet allows users to access information in the comfort of their homes, which potentially solves many of the access issues of hospital computers (or lack thereof). The use of the Internet for education purpose should sound familiar as this echoes online education courses provided by many universities, as well as course blogs and forums to facilitate further discussions.

Most hospitals also have some computer workstations at the unit level and small computer labs; however, due to ministry regulation, access to certain websites on these computers is prohibited and blocked. In this case, barriers to access appear in the form of workplace restrictions.

Websites of popular media that academics in the field of education would very much agree holds enormous educational and research potential, such as You Tube and various applications from Google, are also part of the restricted sites list. Thus, how can we expect nurses to fully immerse in the "E" environment with so many restrictions? The investigators recognized the education potential of streaming media (i.e. online flash based videos such as Google video and You Tube) and attempted to replicate this in the study by using open source applications that are affordable yet provide similar functions as these websites of popular culture. Video screen capture was used to provide application related training and then uploaded on to the main website as a streaming media, so user will not have to download the video before viewing.

Our Experience

It is important to work with the hospital Information and Technology/ Service department early in the implementation to unblock certain websites, which might be unnecessarily/ accidentally blocked. Video screen captures and online PowerPoint presentations are also relatively easy to make, which makes the educational website more interactive. However, without server space, Google Video, You Tube, and similar services are the only place to upload your videos, but these sites are blocked in most hospital settings.

2. Competencies

We should understand that nurses (mostly) are not computer programmers nor do they need to be for them to be able to perform most of their tasks efficiently at their workplace. The investigators believe the ICT program should not necessarily have to be entirely focused on

educating nurses on developing computer skills. It is more important to recognize what computer skills nurses already have and are using on a daily basis, and then demonstrate to them how to transfer those existing skills into a different environment. Skills such as emailing, and web browsing are familiar territory to most nurses. The task is making the link as to how these skills can be applied elsewhere for nursing and educational purpose.

The discussion forum environment is a very popular ICT tool on the Internet. Internet users discuss anything from celebrity news to the meaning of life; why not discuss about nursing? *Allnurses.com* is one of a very few discussion forums dedicated to nursing with over 236+ thousand members worldwide and with over 2 million postings. For those who are not familiar with the forums and online discussion using other methods like blogs and text chats; the discussion forum is a lively interactive community of people with similar interests and needs; and not just a space for Q & A or FAQs. The *Allnurses.com* site is building a community of nurses who are online; they support each other from different parts of the world, and best of all, without being paid! This clearly demonstrates that there is a need to communicate with other nurses about one's profession, to become a better nurse by reflecting on daily experiences, to be ready to document online one's view on an nursing issue and be ready to defend it, as well to accept other's opinions, or simply to vent about a bad day at work, and more often than not, others who shared the same experiences will empathize with you. The discussion forums that were developed for this mentorship project were used to bring some of this wonderful interaction that was already happening in the online nursing community.

Our Experience

There are many free and open source, easy to use applications on the web that can be used to develop online discussions; simply Google search blogs and discussion forums. Some require a server space for added control of data and security, but some do not. We explored with both and it is definitely recommended to spend approximately $10 per month to get your own server space from any popular web hosting company.

3. Participation

So, you built the ICT environment, and nurses have the adequate skills to use the technology. The ultimate question is will they participate? One must realize there are fundamental societal factors at play when it comes to technology and nurses, who are predominately female and from the baby boomers generation. These societal factors are in fact so enormous that it impacts globally with gender gaps from unequal pay to political representation in the parliament to workforce demographics differences, such as in the nursing field (e.g. 94.4% of RN are females;
CNA, 2005) compared to the IT field (predominantly males). Therefore, the researchers are very mindful of these factors as it relates to barriers to learning of technology. "Small steps" were taken to tackle these barriers, which to many people would appear seamless. For example, in the online video captures for application training, a female voice-over was purposely utilized because technology is much too often associated with masculinity in our society; this is something we do not want to reinforce. The goal of these small steps is to improve comfort level and decrease anxiety with the technology.

Another societal barrier is the age factor. Many nurses are much more comfortable using paper- based documentation tools than online electronic based tools. For the study, we took a "tough" position on providing only online surveys; the data collection process is virtually paperless.
Despite skepticism for this harsh decision from many stakeholders, the investigators were determined to use online surveys only because it is recognized that paper versions will compete with online versions. From pre-testing data, the response rates were over 80% for 4

online surveys (which is very good!). Of course, there are processes in place to facilitate a good response rate. For example, email reminders biweekly for the first two weeks with links directly to the surveys, online video tutorials to demonstrate how to complete the surveys and various informative emails about how online surveys are more confidential, accurate, and environmentally friendly, and saves money and resources by eliminating paper, drop boxes, and data entry; as well as dedicated nurse educators to ensure staff are completing the online surveys.

One of our goals in developing the ICT was to analyze the interaction patterns of the participants according to Levin, Kim and Riel's (1990) model for analyzing instructional interactions to describe online participation, interaction patterns, and group dynamics, but due to the minimal participation and one way interaction from the facilitator, a thorough analysis could not be made.

Our Experience

There are limitations to our ICT implementation success. The online discussion forums had low response rates. Particularly, the environment appears to be too "open" for nurses to realize the Purpose of the forum even after emails describing what the forum can be used for, methods to improve confidentiality, and links to *Allnurses.com* (mentioned above) as an example. As well, the moderator of the forum attempted to seed the topic for discussions and reply to those who posted. Also, the nurses who actively used the forum were actually the educators (i.e. facilitators) who facilitated the educational sessions. They were using the forum in a similar manner as *Allnurses.com*, for support purpose for one another, and guidance from the investigator who was organizing the particular education topic. It is interesting how 90% of the participants registered to the discussion forum and about 10% posted anything. In retrospect, unlike the online surveys, the discussion forums had the optics of voluntary participation, while the online surveys appeared to be mandatory. Even though, in reality, both are completely voluntary. The forums lack of success can also be seen as, what was previously mentioned, competing competition between traditional and online methods. Again, it appears if nurses had the choice of discussing between in the classroom and online, the choice clearly favors the classroom. However, this is the reality of education programs at hospital settings with goals on learning outcomes and successes, rather than increasing ICT use.

Conclusions

The humble goal of the ICT implementation is the integration into a mentorship program. This is very different than what some might imagine as an "online" mentorship program with the use of online course management programs, such as Blackboard/ WebCT and Moodle. However, the investigators teased out the main ICT components offered in these course management programs, such as the use of a website to centralize information, multi-media streaming, online discussion environment, and online surveys, and attempts to integrate into the mentorship program. The main challenge with this appears to be the lack of formalization compare to a full- blown web course where the learners will be graded and receive some form of certification from a recognized college or body for successful completion. But, this is unrealistic for education in the healthcare setting due to the amount of dedication and resources involved in developing curriculum suitable for the web. More importantly, there is a particular type of demographics who is more likely to enroll in online courses, which means many nurses in the hospital will mostly like be excluded from participation due to potential anxiety or lack of comfort with the online technology. Currently, it seems it is more important to tackle access, competencies, and participation barriers, and to expose a larger mass of nurses to popular ICTs than to develop formalized web courses that only tailored to those who are already savvy online citizens.

References

CNA. (2004). *A guide to preceptorship and mentorship*. Report by Canadian Nurses Association.

CNA. (2005). *Workforce Profile of Registered Nurses in Canada.* Report by Canadian Nurses Association.

CNA. (2006). *E-Nursing strategy for Canada.* Report by Canadian Nurses Association.

Levin, J.A., Kim, H. & Riel, M.M. (1990). Analyzing instructional interactions on electronic message networks. In L. Harasim (Ed), *Online education* (1850213). New York: Praeger.

MOHLTC. (2003). *Good Nursing, Good Health: The Return on Our Investment*. Report of the Nursing Task Force.

RNAO & RPNAO. (2000). *Ensuring the Care Will Be There: Report on Recruitment and Retention of Nurses in Ontario*. Toronto: Registered Nurses Association of Ontario.

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Kathleen Heslin is the Chief Nurse Executive at York Central Hospital. She is the overall project lead of the mentorship program. Her research background includes injury prevention; clinical leadership and clinical best practice guidelines. Kathleen is a strong advocate of integrating technologies into nursing practice and knowledge transfer and patient safety.

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Mina Singh is an Assistant Professor at York University, Faculty of Health, School of Nursing. She is one of the mentorship study investigators leading the statistical analysis, and an instrumental part of the ICT development team. Her research interest includes program evaluation in healthcare and nursing education, as well as current technologies to enhance learning for both student and practicing nurses.