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Does WBT for the HER Meet the Needs of the Medical Surgical Nurse?

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Does WBT for the HER Meet the Needs of the Medical Surgical Nurse?

Scholarly Project
Submitted in Partial Fulfillment
Of the Requirements for the Degree of
Master of Art, Nursing, Nurse Educator Concentration

St. Catherine University
St. Paul, Minnesota

Sara Elizabeth Schroeder

May, 2011

ST. CATHERINE UNIVERSITY
ST. PAUL, MINNESOTA

This is to certify that I have examined this
Masters of Art scholarly project
Written by

Sara Elizabeth Schroeder

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by
the final examining committee have been made.

Graduate Program Faculty

Professor Valinda Pearson

Date

DEPARTMENT OF NURSING

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Sara Elizabeth Schroeder

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Abstract

Healthcare organizations are beginning to implement the tools needed to receive government stimulus money for meaningful use. The use of electronic health records is directly related to the amount of stimulus funding available to each healthcare organization. Nurse educators are examining innovative training tools to implement in order to meet the needs of the organizations. The purpose of this paper is to examine the question is web-based training an effective model for training nurses on the electronic health record. A pilot study was created to examine the question. The focus group included medical surgical nurses that had taken web-based training. The paper will address the educational gaps related to this topic and provide recommendations from the pilot study and literature.

Introduction

The current trend in nursing education is moving toward integrating web-based training into current nursing curriculum. The focus of this project is to examine the question: “Does web-based training for the electronic health record (EHR) meet the learning needs for the medical surgical nurses in one acute care setting?” A related question is “What is the experience of nurses with the EHR?”. There are many reasons why healthcare organizations are moving towards web-based training including government stimulus incentives, cost of training, abilities to integrate all learning styles into training, and the consistency of information.

Healthcare organizations are struggling with how to implement and train employees on using the EHR. The American Recovery and Reinvestment Act of 2009 was signed by President Obama on February 17, 2009. This law includes the Health Information Technology for Economic and Clinical Health Act or the HITECH Act. The HITECH Act establishes programs under Medicare and Medicaid to provide incentive payments for the Meaningful Use of Certified EHRs technology. (American Recovery and Reinvestment Act, 2009)

The goals of the HITECH legislation are to improve healthcare outcomes, to facilitate access to care, and to simplify care. Meaningful use consists of three components: use of a certified EHR in a meaningful manner, use of EHR for the exchange of health information, and use of EHR to submit clinical quality measures. This law has caused an increase in the pressure on healthcare organizations to implement an EHR. The EHR plays a vital part in caring for patients and is linked to government stimulus money on which many healthcare organizations

rely. In a growing and competitive market, organizations must develop innovative training methods for the EHR. It is important to develop these innovative tools to meet the guidelines set by the government stimulus plan to ensure government funding is available to the organization. Second, tools are needed to meet the needs of the learners.

The cost savings gained by implementing web-based training programs is another factor in the move of organizations to the EHR. Because e-learning or web-based training is an efficient use of healthcare workers' time, it can increase the productivity of the workers and decrease the training costs (Berke & Wiseman, 2003). Web-based training allows the end user to receive "just-in-time" training or point of care training, to allow for more rapid training. Once organizations are using an established web-based training program, the training costs will decrease. For example, training 250 medical surgical nurses in an acute care hospital using web-based training can save approximately half of what classroom training would cost (see figure 1 for cost analysis table).

Figure 1: Cost Analysis Table

Class Room Training			Web-based Training		
# hours of classroom program	# hours of trainer portion (1 trainer per classroom x 25 classes)	Total	# hours WBT	# hours of trainer portion (no trainer needed)	Total
4	25	\$33,000	2	NA	\$15,000

Figure 1, created by Sara Schroeder, RN for cost analysis of one pilot study of web-based training for EHR.

This table was created using data from a pilot study of 250 medical surgical nurses using a web-based training program for the EHR. This data assumes that the nurses' salary and the nursing educator or trainer's salary is \$30.00 per hour. As shown in the table, the web-based training program would cut the training expenses in half and is therefore a reasonable choice for staff training.

There is not a lot of information on the cost of developing, maintaining, and updating web-based training programs. The literature describes the cost saving in the distribution and printing materials is an advantage but further study is needed to determine this. (Jones et al, 2002) I found in my pilot study that we were able to save cost in the training expenses as described above, and in the developing of the web-based training program. The development of the EHR training was done by one trainer who had previous experience developing an interactive web-based training program. There was not a licensing cost to our facility due to our previous ownership of the program. The number of hours needed to create the curriculum was minimal due to the experience of the trainer. The cost of updating the training module should be minimal. The updates only need to be done if there are any changes to the program.

Web-based training enables organizations to offer a training program that will meet the learning needs of their employees. The learning domains from Bloom's Taxonomy that web-based training meets are affective (judgment and values), cognitive (thinking), and psychomotor (demonstration). The cognitive learner gains skill through demonstration and simulation; web-based training incorporates both strategies. The affective learner learns best with one-to-one instruction and this can be met through web-based training. The third domain,

psychomotor, is demonstrated in web-based training by demonstration, simulation, and self instruction (Bastable, 2008).

Literature Review

Recent studies have examined the impact the EHR has on the nursing process. However, few articles that examine how nurses feel about web-based training they received for the EHR. From the articles, the researcher is able to formulate similar themes which will be described below.

Atack & Rankin (2002) found that the economic constraints influencing healthcare systems and the acuity of patients play a vital role in the need for new knowledge and skill sets for practicing nurses. These factors also stress the importance of finding new ways to deliver nursing education and training. The authors state that there is an ongoing challenge of maintaining professional competencies with the rapidly changing healthcare systems. The nurses' experiences were measured with the Online Learner Support Instrument that was developed and tested for use in this study. This tool measured the experiences the nurses had with the web-based course.

The results of this study demonstrated that the nurses were satisfied with the web-based learning. They were satisfied with the easy accessibility and ability to access the information from home and work. This training enabled the nurses' to become efficient in using email, internet, and word processing. Web-based training is an effective mode of learning for nursing education. The article outlines the important steps organizations need to take

before implementing a web-based training product. With the proper tools in place, this can be a successful endeavor for both educator and learner (Atack & Rankin, 2002).

Lynda Atack, reexamined her early work in an article *Becoming a web-based learner: registered nurses' experiences*, by examining the registered nurses' experience when taking a web-based course at home or at their workplace. In this study, nurses were interviewed during the first few weeks of a new nursing class. The interviews were conducted in a group setting. They were asked broad to narrow questions as the session progressed to uncover common themes among the nurses. The questions asked included:

- Can you tell me about your experience with the online course?
- What kinds of things were helpful?
- What things hindered your learning?
- What would you recommendations do you have for the course?

From these questions, she was able to identify four major themes: a) the knowledge and skills with technology the nurses had; b) communication with teachers and peers; c) experience with the learning environment; and d) adjusting to the role of online learner.

The results of this study indicated that web-based training has great potential as a delivery mode for nursing education (Atack, 2003). The end users reported that this mode of delivery was convenient and flexible. The respondents felt that there would be an increase in end users taking web-based training in the future.

Many of the studies that have already been conducted focus on a small group of learners with similar backgrounds. Atreja et al (2008) examined using web-based training in a large setting with a diverse workforce. An observational, cross sectional survey of six hospital systems was conducted. The study measured the overall satisfaction with web-based training, website usability, course usefulness, instructional design, computer proficiency, and self learning attitude. The results showed web-based training can streamline the process healthcare organizations use to train their workforce. The web-based training program was deployed over the different geographical area without compromising the learner satisfaction (Arterja et al, 2008). The end-users were very satisfied with the web-based training. They felt that the information provided was relevant, helpful, and enabled them to perform their job with the new skills.

Using open ended questionnaires allowed Schimming (2008), to determine that the student's who took an online tutorial were equally or more satisfied with the learning experience than the classroom student's. First year medical students were assigned one mandatory web-based training session on how to use PubMed. After the training session, the students had one week to complete an online skills assessment, which covered fifteen objectives that focused on the how to "search" in PubMed. The results were analyzed by the reviewers using SISS software. The reviewers were blinded to the student class enrollment, limiting the potential for bias (Schimming, 2008). The study was conducted over three classes. The first class had similar experiences and satisfaction with web-based training as their counterparts taking the class in a traditional setting. The second and third group to take the

online training reported a higher level of satisfaction than the previous class in the traditional setting.

The conclusion of the article was that students' who received the online training had more control and individual engagement with the material and that led to their satisfaction. The online tutorial was self-paced, and allowed the students to direct their own learning. Online training allowed the students to choose on their own when, where, and how long to spend on the material. It gave the students the opportunity to interact with the system as they progressed through the tutorial (Schimming, 2008).

The objective of the study by Yoon-Flannery et al (2008) was to determine the best practice for implementing the EHR in an academic setting by using semi-structured interviews. The results of the study identified the interviewees' perceived benefits and barriers of EHR implementation. The perceived benefits of using an EHR include, improving quality measurements, ability to have charts at their fingertips, and continuity of care through referral management by using remote access abilities. The barriers found in the study were the lack of planning, equipment not working properly, and not enough education on the EHR.

It is important for equipment to be functioning properly when training nurses on the EHR. The nurses felt that the computer assisted instruction that Ford, Mazzone & Taylor (2005) described in their study was an effective mode of training. Poissant, Pereira, Tamblyn & Kawasumi (2005) found that during the planning phase of EHR implementation it is important to make sure that all modes of technology work properly and that the use of the EHR, can decrease the amount of time nurses use to document. The theme that was significant in these

articles was properly working equipment in web-based training can contribute to an effective way to train nurses.

The article by Blake (2009) examines the faculty perception of e-learning platforms, specifically web-based training. The responses from the faculty are similar to the responses by nursing staff. The faculty felt that web-based training should be an enhancement not a replacement to the traditional training (Blake, 2009). The faculty responses included the following statements: e-learning is essential for today's education and provides transferable skills into practice, it is necessary to prepare students for work in this practice, it gives student's greater flexibility in their learning, and it can retain the students' interest by providing a different format for learning. Overall, the faculty felt that students would benefit from the web-based training.

The article did explore barriers to web-based training for faculty. The lack of confidence in their computer skills and time constraints in modifying curriculum were two major faculty barriers for incorporating web-based training. Faculty expressed concerns about not having the proper training to create and support the web-based training modules. Further, they did not feel that the technical support for the online training program was acceptable for either themselves or their students.

Moule, Ward, & Lockyer (2010) examined nursing and healthcare students' experience with e-learning using a mixed method approach. They used questionnaires, case studies, and focus groups. From the data gathered, three major themes were identified: pedagogic use, factors inhibiting use, and facilitation factors to e-learning engagement. The student's felt that

the web-based learning format was a good resource, but felt that it was underutilized at their institution. The staff also felt that it was being underutilized. The interactive use of the system is what the student's enjoyed the most about e-learning. It gave them a sense of "how to" do a skill and what it looks like "to do" that particular skill.

The factors inhibiting the use of web-based training include limited computer access and technical difficulties. Some students did not have access to a computer at home and it was difficult to use the computers at work. The program was not compatible with some firewalls that home computers used, thus making it difficult for the student to access the information at home. The results of the study included the following barriers: limited computer access, lack of computer skills, technical issues, and poor peer commitment to completing the program. Some students felt that this media crossed into their social networking and wanted to keep this area preserved for their own personal use. Some student's did not ask for technical support due to their fear that they would not know how to respond to the technical help. (Moule, et al 2010)

Flexibility and speed of web-based learning are the main facilitating factors found in this article. Student's liked that they could work at their own pace to complete the training. They were able to access the information at any time and use it as a resource when needed. (Moule, et al 2010)

Salyers (2005) examined the effect face-to-face classroom instruction and web-based instruction has on the course outcomes and students satisfaction. According to Salyers' study students who participated in web-based training indicated a greater satisfaction with the course. They had greater flexibility in completing the course and were able to be more creative

with their time. The students who participated in the traditional classroom indicated that they had greater interaction between peers and faculty. They also liked the more structured curriculum in the traditional classroom. Both groups felt that it was important to have experiences with new technology such as web-based training and found it satisfactory.

The central themes that I found in analyzing the articles include: convenience, accessibility, and flexibility. The end users (nurses) were very satisfied with the web-based training. They felt that this gave them more flexibility to learn things at their own pace. Web-based training enabled them to have access to the information whenever they needed it.

The research did show that nurses experience similar barriers to web-based training. These barriers include inadequate access to computers, lack of computer knowledge, and technical issues. There are ways to overcome these barriers to make web-based training a success. Ensuring that there is adequate access to computers at their work-stations, or having an open lab with computers are two ways to do this. Organizations can offer basic computer classes to nurses who need to enhance their skills. Organizations can also have technical resources available to staff. The most important barriers to overcome is the technical issues of web-based training. It is important to plan for technical issues and have resources available to staff when these issue occur.

Web-based training has been used in small groups of end-users and has also been studied in a large, diverse healthcare system. The information that is lacking is how the nurses perceive the effectiveness of a web-based training program. From my pilot study, I hope to

explore the perceptions nurses have of web-based training and to gain insight on what they feel they need for a successful training program.

Theoretical Framework

There are many ways to measure learning styles; the most common is Kolb's Learning Style Inventory (Wang, Wang & Huang, 2006). Learning styles are important factors that influence web-based training. By tailoring the training programs to meet the individual needs of the learner; it will influence the success of the program.

The theoretical framework used in this project, Kolb's Experiential Learning Theory, focuses on knowledge acquisition through personal involvement at both the affective and cognitive levels. Kolb's theory explains that learning occurs in four domains: accommodator, converger, diverger, and assimilator (see figure 2 for Kolb's Experiential Learning Theory). There are two major dimensions in Kolb's model: perception and processing. Kolb hypothesized that learning results from the way the learner perceives and how the learner processes what they have perceived (Bastable, 2008). The accommodating learners are those who learn through apprehension and active, hands-on experimentation (Lisko & O'Dell, 2010). Web-based training allows the accommodating learner to use hands-on experience by return demonstrations of the activity. Diverging learners learn by internalizing their reflections. Web-based training offers concrete learning experiences that learners can use for reflection. Converging learners learn by comprehension, and by considering abstract ideas separate from the actual experience. The converging learning uses the web-based training similar to the accommodating learner. The training offers a return demonstration module for both learning

styles. Assimilating learners learn by comprehension, but internalize the learning (Kolb, 2010). The assimilating learner uses the web-based training self-instruction methods. It is crucial to incorporate a variety of learning styles when creating a training program since the learning styles in nursing differ from nurse to nurse.

Figure 2: Kolb's Experiential Learning Model

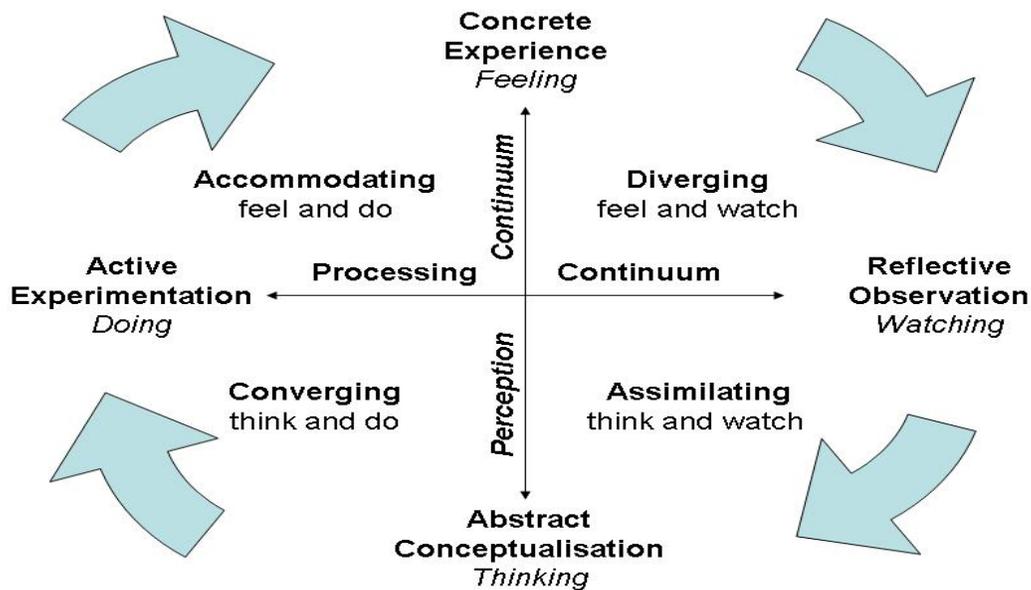


Figure 2. Kolb's Experiential Learning Theory model. Adapted from "Nurse as Educator: Principles of Teaching and Learning for Nursing Practice" by Bastable, S., 2008, p.131. Copyright 2008.

This theoretical framework will inform the researcher of the learning styles of the focus group. This model will also be used to confirm whether or not web-based training is meeting the needs of nurses' during the EHR training.

Pilot Study

In order to gain an in depth understanding of this educational problem, the author conducted a pilot study that examined the question does web-based training for the EHR meet the educational goals of the medical surgical nurse in an acute care setting. The pilot study examined the results from a nursing focus group addressing web-based training and its effectiveness. There is a gap in nursing education around web-based training and the pilot study is a way to examine if it is an effective teaching tool.

This study was a qualitative, descriptive, phenomenological design, specifically interpretive phenomenology, using lived experiences of the nurses to gain a better understanding of the social, cultural, political, and historical context in which the experiences occur (Polit & Beck, 2008). The study explored the experiences the medical/surgical nurse has using a web-based training module for the EHR.

A group of 120 medical/surgical nurses with a various experience using web-based training and the EHR were asked to participate in a focus group. A response rate of approximately 25% was anticipated, meaning 30 nurses out of the 120 would respond. The researcher received 10 volunteers for the focus group. Participation in the focus group was optional and all responses were kept anonymous. The sampling approach was chosen in order to follow the phenomological design a focus group is appropriate. It allowed the nurses to express their experience with web-based training without fear of repercussions or judgment.

The potential participants of the study received an informational letter informing them of the study, expectations of the participants, opportunity for participation in a focus group, and expected outcomes of the study. The informational letter detailed the study, the purpose,

rationale, expected outcomes, and effects of their participation or nonparticipation in the study.

The informational letter was sent out 3 weeks before the focus group convened. The informational letter explained that participation is voluntary and was reiterated prior to the focus group.

The Institutional Review Board at HealthEast approved this study before any information was sent to the participants. Consent was obtained from the participants at the focus group.

The focus group took place at St. John's Hospital, Watson Conference Room. There was a novice moderator who learned how to be an effective moderator under the guidance of a second, experienced moderator. Notes were taken during the session by one of the moderators to assure validity and accuracy of the data. The focus group was audio taped to ensure that all the information is captured. The focus group discussion lasted approximately 60 – 90 minutes.

In the focus group, participants were asked more specific questions regarding their experience with web-based training. Information from the focus group was analyzed and common themes were noted. The researcher will use results from the focus group to make changes and improvements to web-based training programs and will be utilized to improve the end product.

The reliability and validity of this data rested on the honest participation of nurses' at HealthEast. The limitations of the instrument are recognized here. If the nursing staff was not able to answer the questions honestly it will affect the reliability and validity. There are no plans to pretest the instrument at this time.

The data from the focus group was analyzed by the researcher and additional moderator who looked for similar themes from their discussion with the medical surgical nurses. The focus group questions included, 'Does web-based training effectively give you the material and training you need to be efficient at your job?', 'What would you like more training on?', and 'Do you feel this assessed your ability to perform these tasks?'. The researcher manually compiled the data for analytical purposes.

The author used a qualitative content analysis of the narrative content to identify themes and patterns (Polit & Beck, 2008). The themes that were derived from this study were based on the nurse's experiences with web-based training for the EHR. The author discussed these findings with the other moderator to assure that bias has not been a factor in the data analysis.

The analysis approach used in this study was the editing style. In this approach the researcher acts as an interpreter to search for meaningful segments (Polit & Beck, 2008). The segments are identified and then categorized to organize the data. From this, the researcher is able to determine any patterns or similarities that connect the patterns. This is consistent with the sample (med/surg nurses) and their responses from the questionnaire and focus group.

The researcher reviewed the information in the holistic approach to capture the meaning. Then the researcher pulled out common themes or phrases in the selective approach. Finally, in the detailed approach every line is analyzed and then themes are determined.

Several themes were found from analyzing the data from the focus group. There are many competing factors in training nurses on the EHR, time constraints, staffing, and lack of training space. The integration of the EHR into the nurses' workflow must be taken into consideration (Poissant, et al, 2005). It is important that the training of the EHR meets these needs. One way to alleviate this is to offer web-based training. This allows staff to complete the training in many ways: at home, work, and in computer labs. This would free up space for onsite training to take place in these rooms.

Recommendations

Is web-based training for the electronic health record meeting the needs of the medical surgical nurse? After my extensive literature review, pilot study, and my personal experience with web-based training I have found it is an appropriate platform for training nurses on the EHR. The literature shows that nurses are satisfied with e-learning and specifically web-based training. This web-based training platform gives nurses more flexibility, convenience and accessibility.

Barriers must be addressed in order for web-based training to be effective. As evidenced by the literature, having equipment that works, technical support, and access to computers are the three major barriers. Learners are frustrated when they are not able to

access the information, need technical support, and do not having enough computers on the unit to access the training program at work.

The following recommendations were common themes from the literature:

- Web-based training when tailored to the learner's background is a satisfactory mode of training. Future studies should be conducted to measure the long term outcomes of the web-based training. (Arteja et al, 2008)
- Web-based learning is effective as a teaching model for nursing. Advance preparation is vital to the success of the learner and learning. (Atack & Rankin, 2002)
- Interactive, web-based training encourages the students to direct their own learning experiences and leads to higher learner satisfaction. Students prefer the ease and control they have utilizing the training. (Schimming, 2008)

The focus group recommendations were:

- Web-based training met all learning styles. There was visual, auditory and hands on experience throughout the training.
- Technical Support – the nurses felt that this was the most important recommendation. Ensuring equipment is working properly and is easily accessible.
- Create a tutorial for nurses on how to use web-based training. This tool could be utilized by nurses who are unsure of their computer skills.

The information presented in the web-based training is consistent to all nurses who receive the training. They can use the information at a later date as a resource to supplement the learning. The training material can be kept up to date and the results of the training can be

measured. The training can be customized to meet the individualized needs of the learner. For example, a nurse who is a psychomotor learner can utilize the demonstration feature of web-based training. Many of the nurses in my pilot study liked this feature, as they were able to use a hands on approach to charting in the EHR. This psychomotor task allowed for increased retention of the information.

Conclusion

Nurse educators are in the forefront of developing innovative curriculum to support new technology in this rapidly changing environment. As evidenced by the literature it is vital that this education meets the needs of the nurse. Web-based training has become a new platform for educators to train large numbers of staff in a consistent manner. After analyzing the results of my pilot study, I have found that WBT is an effective training method for the EHR.

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Figure 2: Kolb's Experiential Learning Model

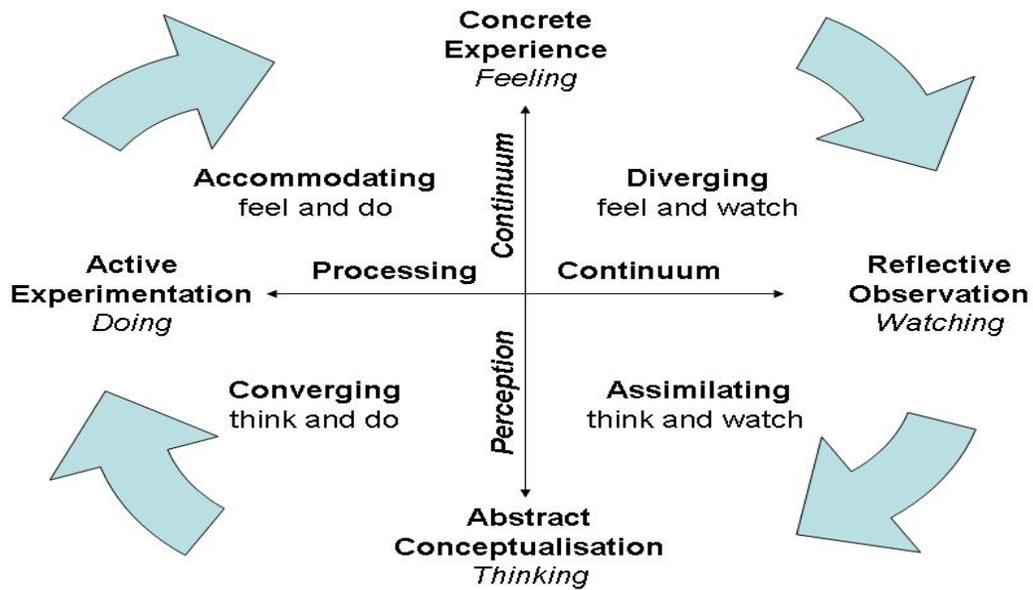


Figure 2. Kolb's Experiential Learning Theory model. Adapted from "Nurse as Educator: Principles of Teaching and Learning for Nursing Practice" by Bastable, S., 2008, p.131. Copyright 2008.

Letter to Focus Group Participants

April 2011

Medical Surgical RN
St. John's Hospital
1575 Beam Avenue
Maplewood, MN 55109

Dear Medical Surgical RN,

My name is Sara Schroeder, RN and I'm a Master of Art, Nurse Educator student at St. Catherine's University. I'm working on my scholarly project which will examine the question "Is Web-based training effective for Electronic Health Record".

I'm looking at conducting a focus group with 10-12 volunteers to answer a few questions about their experience with web-based training and the electronic health record. This information would be strictly confidential and for my use in this project. This information would not be given to leadership within HealthEast.

The focus group will last approximately 60 -90 minutes. If you would like to volunteer, I'll take requests on a first come first serve basis. Please call me at 651-326-3621, or email: seschroeder@healtheast.org if you are interested or if I can answer any questions.

Thank you!

Sara Schroeder, RN

Focus Group Questions

Have you used web-based training before?

What type of training works best for you?

Was this program easy to use?

Was it convenient?

Was this program sufficient to teach you what you need for your job?

Do you feel it prepared you to work effectively on the floor?

Do you feel this assessed your competency?

Would you want to receive this type of training in the future?

Do you have any other questions or recommendations?