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2013

Abstract

An Evaluation of Authentic Learning in an Electronic Medical Records System

by

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MBA, Baker College, 2006

BS, Baker College, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Higher Education and Adult Learning

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Abstract

This study examined participants' perceptions of the effectiveness of a new job-training program designed to enhance the authentic learning in adult learners using an electronic medical records system at a naval health clinic. This job-training program lacked data about participants' perceptions of this learning process by which to gauge its overall effectiveness for the clinic and its personnel. The rationale for selecting the problem is the need to provide knowledge of this system and training for employees to fulfill their duties. The theoretical framework for the study was based on Dennis and O'Hair's model for authentic learning. Two guiding research questions focused on the participants' perceptions of the usefulness of the program and whether or not age and/or gender played any role in these perceptions. The research design was a qualitative evaluation using a 2-part survey delivered to 30 of the course participants. The data were analyzed by identifying themes and/or patterns within the data. A key finding was that the training program was effective based upon the participant's perceptions. age and gender did not play a role in these findings. Recommendations include evaluating future courses to ensure continued program effectiveness. Implications include initiating a Navy-wide change in the manner of educating personnel to use this training program to help other naval medical facilities wishing to adopt this type of training.

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Dedication

I dedicate this, and my doctorate degree, to the most important people in my life. First, and most important, I dedicate this to my mother. I love and miss you every day. You were always my inspiration and my motivation. You encouraged me to continue and gave me the drive to carry on when I wanted to stop. I know I am truly blessed to have been your daughter. To my spouse, thank you for encouraging me to continue. With your rough voice and little quips, always telling me that I could not waiver or quit and that I needed to finish this. And last, but not least, to my children. Thank you for always having the faith in your mom to tell me that I was capable of completing this task. Your support and encouragement during some tough times really kept me going. Thank you all for believing in me.

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Section 1: The Problem

Introduction

The electronic health record stores all patient data for one or more medical encounters. In order to properly use these systems, end users must be trained. The purpose of this evaluation was to examine the effectiveness of authentic learning for adult learners who are required to use an electronic medical records system for the military, using a new training system that combined web technologies and multimedia components. The environment of focus was a military treatment facility (MTF) on the East Coast. In this learning environment, there were weekly training sessions for all new employees in which instructors demonstrate how to use the electronic medical records systems. The primary systems were the Composite Health Care System (CHCS), and the Armed Forces Health Longitudinal Technology Application (AHLTA).

AHLTA was the military health program's electronic medical record that was implemented in response to the President's Executive Order 13335 of 27 April 2004 (Hufnagel, 2009). This order established the position of a national coordinator for health information technology and set a goal for the majority of Americans to have an interoperable electronic medical record within ten years. The national coordinator determined three initiatives that were imperative to meet this goal: automating clinical practice, interconnecting care, and improving population health. Military medicine leads the nation in this initiative. Only the seamless integration of CHCS and the enhanced functionality of AHLTA meet the global needs of joint military healthcare in breadth of function, security, and applicability to their diverse mission.

The electronic health record systems were centrally maintained and controlled by the Information Management Department (IMD) at a large naval hospital on the East Coast. Additionally, these systems were administered locally at a smaller naval health clinic by CHCS/AHLTA specialists within the IMD. The AHLTA system is a global system that was used by three branches of the United States Armed Forces: Army, Navy, and Air Force. The system was one of the world's largest healthcare information systems, holding approximately 17 million records in its database as of 2004 (Mukherji & Egyhazy, 2004). More recent data indicated that AHLTA maintained records for some 9.6 million individuals (Baldwin, 2010). As of 2010, this system included 63 hospitals, 413 outpatient clinics, and 413 dental clinics and was supported by 133,500 military and civilian personnel (Staggers, Jennings, & Lasome, 2010).

The learning and work environment that I used for this evaluation was the weekly training courses offered for the AHLTA system. This training included classroom instruction and the use of video courses broken down into modules. The training was hands-on, in a simulated AHLTA environment, which offered students an authentic learning environment in which to test their newly acquired skills.

Definition of the Problem

The problem that I addressed in this evaluation was the required training of new personnel who were using the EHR system. In order to guarantee that all were capable of performing their daily duties of providing quality healthcare, all new, unqualified employees were required to participate in a day-long training course that incorporated

both video-based education as well as hands-on training. This training course was recently changed from an instructor-led course to this new multimedia driven module.

The overall goal of the clinic was to provide quality and timely healthcare to all military personnel, retirees, and their families. To do this properly, all clinical physicians, nurses, hospital corpsmen, and administrative personnel who delivered these services must have had a thorough, working knowledge of the medical records system that was used in the facility. Ensuring that all personnel received this training was the responsibility of the CHCS/AHLTA specialists within the IMD. The training was typically 2 to 8 hours in duration, prior to the actual hands-on learning task. This time frame stemmed from the users role within the system. For example, a clerk, corpsman or nurse would not require the same degree of training as a physician due to their system role.

Initial end-user training was conducted via an interactive web-based training system. Lessons were categorized based on the different roles within the system. Lesson topics included a multimedia demo, interactivity and practice exams. The multimedia featured audio voice recordings with closed captioning and screen shots. The interface had a simplified navigation system and help tools to assist users.

After the initial training was completed, the students were required to demonstrate their level of comprehension. The students used a training system that is designed to simulate the live medical records system. This environment was capable of producing authentic results on test patients, and allowed the learners to perform all steps that would be performed if they were using the live system. Students were then asked to complete

specific tasks, similar to caring for a real patient. The trainer evaluated the extent of the students' learning based on whether the user had difficulty completing the tasks and if assigned tasks were thoroughly accomplished.

This hands-on training not only simulated real world activity, but also allowed the learners to practice using the system before entering the actual work environment. This type of training offered the students an authentic learning environment in which to practice performing their duties with the electronic health record system. For this training, the learners were in a classroom environment and had access to a facilitator and the opportunity to ask questions if necessary.

Vaughan (2007) stated that to be a blended learning environment, a course must combine different methods of instruction. These different methods can be used to “selectively present case studies, tutorials, self-testing exercises, simulations, or other online work in place of some lecture or lab material” (Vaughan, 2007, p.83). This new method of AHLTA training fits this perspective because it combined both web-based tutorials and simulation exercises.

Rationale

Evidence of the Problem at the Local Level

Military healthcare were utilizing AHLTA to document and deliver patient care for members of the military and their families. AHLTA provided patient health records embedded as part of a network connected enterprise-wide information system. In-depth training support activities were needed to initially train new users and subsequent refresher training was needed to proficiently maintain healthcare data in a comprehensive

form, including demographics, medical histories, medication and allergies, immunization status, laboratory tests, radiology images, and billing information.

This system was extremely detailed in the amount of data that it captured per patient encounter, and it was imperative that all users understand its functionality and be able to complete work-related tasks within the system. If clinical users could not perform their duties within this system, the quality of care would suffer. To provide the quality of care expected by the clinic command, it was vital that all patient encounters be thoroughly documented. This documentation included checking in the patient, taking and recording vital signs, completing health surveys, performing a complete assessment and treatment plan by the physician, and documenting labs, X-rays, consults, prescriptions, and immunizations.

Should an end-user not completely understand the EHR system, the ability to adequately perform these necessary functions would not exist and the end-user would be ineffective within the system. These performance inadequacies would have a negative impact on the patient's quality of care. This training gap could ultimately lead to costly medical errors such as improper diagnosis or exposed medical records (Hoffman, 2010).

Evidence of the Problem from the Professional Literature

Since its inception, AHLTA has undergone many transformations and upgrades. While there have been a number of complaints about the system, one of the biggest has always been the question of adequate training. While the newest version of AHLTA was user friendly and, thus, less cumbersome to use, it still required that new users receive a substantial amount of training. Researchers have noted that the "delivery and content of

training needs closer study” (Rockswold & Finnell, 2010, p. 314). Tetteh (2010) also stated that the AHLTA system requires training beyond the initial procurement of knowledge. “Conventional methods, such as classroom instruction, are being blended with distance-learning approaches, for which the military has been a leading advocate” (Wisher, 2007, p. 8). Walter Reed National Military Medical Center has also shown that simulation training is an accompaniment to clinical practice and it advances the delivery of secure, high quality patient care (Murray, 2010).

In the past, training for AHLTA was conducted in a classroom with an instructor over a period of several days, depending upon the user’s role within the system. Recently, this type of training was abandoned for a new method of instruction. This evaluation was an attempt to illustrate that the new training method is not only a better method of training but also that it is beneficial to adult learners. The new method of training incorporated web technologies with multimedia in an authentic learning environment. This combination of learning technologies and theories merged to give adult learners a comprehensive understanding of the EHR system.

Definitions

Throughout this evaluation, many abbreviated terms and military acronyms are used. I used the following definitions in this research:

Armed Forces Health Longitudinal Technology Application (AHLTA): The military’s electronic health record. AHLTA is an electronic health record (EHR) system designed to interface with CHCS and provide electronic health information about individual patients across various military healthcare settings. These records may include a range of data in

comprehensive or summary form, including demographics, medical history, medications and allergies, immunization status, laboratory test results, radiology images, and billing information. AHLTA is designed to maintain a complete record of patient encounters and deliver the ability for military medicine to provide enhanced quality and continuity of healthcare to a mobile population and clinical base.

Electronic Health Record (EHR): An EHR supports health record documentation and continuity of care for both institutions as well as the battlefield. A comprehensive EHR, such as AHLTA, combines all aspects of a patient's medical history in one centralized location.

Military Treatment Facility (MTF): This term is used by the military to define all medical facilities, whether they are hospitals or clinics. For the purpose of this evaluation, a clinic will be used.

The Composite Health Care System (CHCS): is the original version of the military's electronic health record system. CHCS is a healthcare management system that integrates information from various subsystems to assist in patient care for military personnel. This complex healthcare system was designed as a modular system with a common database and file interface that is used at each MTF to maintain administrative and medical information related to patient care.

The Information Management Department (IMD): is the information technology department at both Naval hospitals and Naval health clinics. This department is responsible for providing support to the end-users. This support includes maintaining

equipment, troubleshooting problems, providing training, and ensuring security and access for government systems.

Significance

Throughout the various upgrades and revisions to AHLTA, there has always been one constant: the complaints about usability and training. This evaluation would play a significant role in ensuring the most appropriate methods of instruction are used for both the clinical work environment and for students. By understanding the needs of the students and the benefits of this training, the instructors and students can be assured of obtained knowledge. Moreover, this evaluation would help to provide recommendations on how to adequately train personnel in the appropriate use of the EHR system. This evaluation would also be helpful to all MTF's in training and increase knowledge of authentic learning in adult educational practices. It would also serve as a future reference for researchers on the subject of training in the area of EHR's or other healthcare arenas.

Guiding/Research Question

The goal of this evaluation was to examine the effectiveness of authentic learning in adult learners using an EHR system and to identify whether additional changes were needed to the new training method. Therefore, in this evaluation, I examined the questions:

1. What are the participants' perceptions of the usefulness of the program?
2. Are these perceptions impacted by age or gender?

Due to the fact that the AHLTA system was proprietary to the military, there was limited information available in scholarly journals to reinforce any research; specifically

within the training area of the system. However, there were many references to adult learning theories and authentic learning, as well as web-based and video technology and professional development.

The evaluation was not an endeavor to discover something new, but rather an examination of the existing training to determine if it was effective and satisfactory for learners in its present form. This training has been changed from a classroom, instructor-led offering to a video-based and learner centered approach.

Review of the Literature

In this section, I provide a synthesis of the literature that served as a foundation for this evaluation. The literature varied greatly in type and volume, depending upon the topic. Electronic databases such as ERIC, ProQuest, and EBSCO were my main sources for the literature.

The educational foundations of this evaluation were adult education, adult learning theory and authentic learning. While these were the primary areas that I covered, when considering this type of training, I needed to evaluate web-based technologies for relevance and the role they play in education. Because I examined a nontraditional setting that within an MTF it would have been negligent not to include research on professional development as it applies to authentic learning, adult educational practices and web technologies. As secondary points of interest, I examined motivational factors for adult learners and the role that motivation plays in regard to adult learners and adult educational processes. I also addressed online and blended learning environments.

Adult Education

There is a large body of reliable literature regarding adult education and adult learning. From this literature, many ideas can be extracted on the theories of adult education. However, three concepts seem clear: (a) adults must be motivated to learn; (b) the curriculum must be designed with adults in mind; and (c) the adult learning environment must be very different from other learning environments and specifically geared to adults only.

A significant amount of the literature regarding adult education is based solely within the academic environment, and not within a corporate or organizational setting. As Donavant (2009) noted, this has caused many research studies to substitute information that is only slightly appropriate. While researching literature for this review, I noted that there was little literature available that was organized around the corporate learning environment.

Adults are always learning; they learn everyday (Merriam, 2001). With this constant learning, they bring many life experiences to every learning event. With these life experiences, other qualities exist that make adult learners different; they bring maturity, independence, a self-directed nature, and the ability to integrate learning into their busy lives (Abela, 2009; Bollash, 2010; Cercone, 2008; Newman & Peile, 2002). Adults will seek additional education out of necessity or to further advance their existing knowledge base. This desire to increase knowledge does not necessarily breed motivation, especially if the knowledge being acquired is out of necessity for a profession. Motivation is not automatic; however, adults tend to be more motivated than

other learners (Abela, 2009). To counter this claim, Kanfer and Ackerman (as cited in Bertolino, Truxillo, & Fraccaroli, 2011, p. 249) argued that the motivational constructs of older and younger employees may be different because of life span differences, rewards, and career situations; leading the researchers to believe that older employees may be less motivated to train than younger employees. Currently, there is not enough research available to support or disprove this claim.

Research has also demonstrated that adult learners are obstructed by other variables from which traditional learners are not affected. McGivney (2004) stated that adult learner persistence was obstructed by many personal factors such as: (a) length and type of program, (b) gender, (c) lack of family or partner support, (d) financial problems, (e) course or institution factors, (f) advising inadequacies, (g) time management, and (h) a feeling of disconnectedness. However, Plageman (2011) seemed to counter this idea by stating that adult learners are often passionate about their learning because they have made the conscientious decision to continue with their education, and therefore are able to integrate all of these negative factors with their roles as students.

This type of instruction is most closely related to e-learning, and as such, the motivational factors associated with it are different from a traditional classroom. This new self-directed learning is delivered via a web-based process without an instructor. Learner motivation is a crucial part of this training (Kim, 2009). Abdullah, Parasuraman, Muniapan, Koren, and Jones (2008), wrote that “one of the most important aspects of adult education is motivation” (p.105). Students must want to learn the material provided.

The most prolific researcher in the area of e-learning motivational practices is Dr. John M. Keller. According to Keller, learners employ self-regulating strategies (Keller, 2008; Keller & Suzuki, 2004; Song & Keller, 2001). Dr. Keller's work spans three decades, and includes the ARCS (attention, relevance, confidence, and satisfaction) model as well as the five principles of motivation. These five principles can be applied to any e-learning environment. In accordance with this theory, motivation is promoted by:

- Curiosity
- Meaningful knowledge
- Learners believe they can succeed
- Learners experience satisfying outcomes

There is a large amount of literature on learner motivation; however, much of what has been written does not specifically apply to online or self-directed learning environments. Hodges (2004) wrote that in regards to e-learning environments, "Relevance is by far the most reported motivator" (p. 5). In the case of e-learning, relevance should be equated to authentic. If the tasks created are relevant to the learner, the learner will be motivated to learn them.

A discussion of literature, with regard to adult learners, would not be complete without touching on Adult Learning Theory. The literature notes that there have been many types of learning theories over the years. Until fairly recently, however, there has been little mentioned about adult learning. I noted that a review of these sources showed a significant amount of data available. However, as seen previously with other topics, nearly all literature points to adults in an academic setting rather than a corporate setting.

Thus, the training of the clinic employees should be based upon the needs of these adult learners who are in need of learning the EHR system known as AHLTA. The training program is based upon real-world, hands-on activities to help assimilate the information. This training is designed to provide intrinsic motivation by showing the learners where and how this information will be helpful to them.

Knowles, Holton, and Swanson (1973/2005) tell us that “In conventional education the student is required to adjust himself to an established curriculum; in adult education the curriculum is built around the student’s needs and interests” (p. 37). While the training being studied is not necessarily built around an interest, it is designed around a specific training need. Adult education theory delineates that adults bring many resources to the learning environment; the most important of these is experience. Adults can be thought of as life-long learners, and it is this life-long learning experience that they bring to the educational environment. There are many adult education theories, which share key assumptions about adults:

- Adults are independent and self-directing;
- Adults have vast experience;
- Adults value learning;
- Adults are interested in problem-centered approaches;
- Adults are more motivated to learn (Hean, Craddock, & O'Halloran, 2009).

Clapper (2010) wrote that maintaining a clinical workforce that is trained to peak performance should be a major goal of any health care organization where patient safety

is a priority (p. e7). Along with this idea, Clapper (2010) also wrote that clinical professionals should become more self-directed. However, the agreement that adult learners must be motivated, in this case by professional responsibilities, was present. Although not totally agreeing with Knowles's theory of andragogy, it is implied that adult learning is more transformative in style.

Merriam (2008) stated it best, "Adult learning is a complex phenomenon that can never be reduced to a single, simple explanation" (p. 94). This statement clearly outlines what other researchers have found, that no single theory of adult learning is appropriate in all adult learning situations. Also noted by Merriam (2008) is the fact that adult learning is a multidimensional experience, which takes place in many settings. No matter what environment adult learners are in, they bring with them all of the features and experiences that make them unique in the educational setting.

Henschke (2011) wrote that andragogy is the art and science of helping adults learn, and that it has helped to shape our ideals about adult learners. However, he also offers some of the critiques of andragogy. For instance, many authors agree that andragogy has obtained a place as an established doctrine of education, but this was done without what was termed as sufficient empirical research to justify its standing. Henschke (2011) also stated that andragogy should not be packed away and forgotten about, as it has much to offer the future of adult education. However, further discussions of andragogy should include broader perspectives and considerations other than Knowles version. For the purposes of this evaluation, andragogy will be my focus.

Authentic Learning

Dennis and O’Hair (2010) stated, “Research demonstrates that authentic instruction is an effective form of teaching and raising achievement” (p. 4). The term authentic instruction or authentic learning is a relatively new idea, this new idea is meant to promote a real-life application of knowledge (Renzulli, Gentry, & Reis, 2004; Rule, 2006; Slepky, 2008). The training program being addressed in this evaluation is an authentic learning environment in which adult students are motivated to learn a relative task. By doing so, they are gaining valuable skills that they will carry with them throughout their entire military careers and will have obtained skills that they can build upon. The authentic learning environment will focus on providing required information, but will also provide the learners with scenarios and cases, so that the learners might become involved with a realistic situation in which to apply this new knowledge. Herrington, Oliver, and Reeves (2003) stated that “authentic activities within online learning environments have been shown to have many benefits for learners” (p.59).

Web-based and Multimedia Technology

The use of multimedia technology in the classroom can enhance the learning process (Cairncross & Mannion, 2001). While not all web-based or multimedia technology is interactive, the use of this technology affords opportunities to both the learner and the instructor. Learners have some control over their learning environment. No matter what the setting, learners have the ability to start or stop the application at their own pace. Opportunities for instructors include the ability to present material in new and innovative methods, allowing instructors to meet the challenge of utilizing new technology in ways that will facilitate the highest level of education possible (Cox, 2008).

The technologies that can play a role in this learning are CD-ROMS, multimedia presentations, the Internet, and video-based training. This evaluation focused on the use of video-based training that is delivered via the Internet as well as a hands-on simulation software package. While there is a great deal of literature focused solely on web-based or e-learning environments, it was noted that research in the area of video-driven systems is extremely limited.

Donkor (2010) showed that learners using a video-based system learned practical skills at a significantly higher rate than learners using a standard printed text. It has also been documented that video-based training can assist greatly in the acquisition of professional development skills (Cherrett, Wills, Price, Maynard, & Dror 2009; Pang, 2009). This type of training can be utilized in almost any professional environment.

Ruiz, Mintzer, and Leipzig (2006) stated that there was evidence to show the effectiveness of e-learning methods within the medical education realm, especially when combined in a blended learning environment. This type of training has mostly been practiced with nurses or other medical professionals. Very little research was found to support using this type of training with physicians. Moen, Nygard, and Gauperaa (2009, p. 529) stated that “creating web-based learning environments holds great promise for on the job training and competence development in nursing”. They also found that practicing authentic tasks was very useful in the skills training area.

The use of simulation as a teaching strategy is generally used in addition to traditional forms of training; however, it can be used on its own or combined with web-based or video-driven formats. By the use of simulation, students have the ability to

practice new skills without harm to anyone or anything. This is especially important within the healthcare arena when the goal is to reduce the risk to patients. McCaughey and Traynor (2010) stated that simulators within healthcare should permit complex physiological and pharmacological responses. This claim is true of the system used at the clinic. The AHLTA training system would allow healthcare professionals to complete all aspects of a medical encounter, no matter how complex, without risk to patients.

To counter this, McCaughey and Traynor (2010) also state that there is conflicting evidence with regard to the benefits of simulation training. This conflict may be due to the lack of agreement as to how simulation training is defined, or simply due to the fact that there are few credible studies in this area. The authors agreed that within medical and nursing literature, there is an overwhelming agreement that simulation learning promoted development of skills and competence (McCaughey & Traynor, 2010).

Professional Development

“In the United States, healthcare and financial services companies have also found just-in-time access anytime and anywhere to training as a major benefit” (Stewart & Waight, 2008, p. 295). As of 2009, there were very few articles that addressed professional development and the training of adult learners (Donavant, 2009). In fact, most research in this area was done at the collegiate level. The same could be said about online education and professional development. Donavant (2009) found in his study that as it pertains to adult education, previous experience with online learning is a factor that determines success or failure. The study also found that online education was not a satisfactory substitute for hands-on training.

Professional development is a vital part of any work environment. Workers in all areas of the corporate and private sector must maintain or enhance skills (Slotte & Herbert, 2006). The idea of taking this training to a new level by utilizing new technologies was a sound choice. However, this type of training can sometimes become a burden for the trainee if they are not comfortable with technology (Stromberg, 2011). Stromberg's (2011) model of training for EHR is very similar to this evaluation because he chose to train in small groups of between two and eight learners at a time. In addition his training was further broken down into different days for different topics as well as by the type of user being trained. While this evaluation does not break down the training into days by topic, it is divided by user type and all classes are generally limited to seven to 10 learners.

For this evaluation, authentic adult learning has been referenced throughout. However, Eraut (2004) stated that this term should be "informal learning". This is due in part to the necessity to differentiate between formal or collegiate learning and the learning one does in a professional environment. Whether formal or informal, the acquisition of knowledge is the key to the environment. To truly make professionals as motivated as possible, those providing the training must encourage the experience they bring with them, support all learning efforts, and develop training that supports adult professionals' needs (Webster-Wright, 2009).

For this type of training to be successful, an outline or blueprint must be in place to align with the corporation's mission and vision. The mission of this small Naval health

clinic is to provide the best care possible for its patients. To accomplish this, all personnel need to be adequately trained to perform their daily duties, which include the use of EHR.

To further promote the use of simulation training in this environment, a look at the simulation environment adopted and promoted by Walter Reed National Military Medical Center. Murray (2010) stated that “the use of simulation for teaching clinical skills and decision making will complement practical clinical experiences” (p. 659). Murray also noted that simulation will make available extraordinary opportunities to provide real-time, hardy experiences based on the changing face of populations receiving healthcare.

This article also discussed that simulation training, which Walter Reed has been undertaking for quite some time, has the benefit of patient safety as well. Simulation training as a whole enhances patient safety by allowing trainees to work in a simulated environment before being assigned to a clinical location. The simulated environment is also important in the refresher training of personnel returning from deployment, to prepare military teams for care on the battlefield, to promote teamwork, interdisciplinary collaboration, and assess competency (Murray, 2010).

The simulation training goals of Walter Reed National Military Medical Center seem to align perfectly with the goals of the MTF used in this evaluation:

- To ensure every level of healthcare professional is fully trained and competent;
- To use blended learning;

- To develop electronic, distance learning for military healthcare;
and
- To develop distance learning modules for use outside of the clinic
(Murray, 2010).

Clapper (2010) seemed to disagree with a general consensus that simulation learning is not a form of active learning. The author believed that simulation learning is more of a method to help understand a topic rather than to learn it. This claim contradicts other research.

Fenwick (2008) observed that workplace learning is “not just human change but interconnections of humans and their actions with rules, tools, and texts, cultural, and material environments” (p. 19). This observation would seem to imply that not only does workplace learning take place in formal classroom sessions, but also in the everyday work environment. What workplace learning really comes down too, is what acquisition of knowledge is most important and who states it as such.

“The effectiveness of workplace learning programs is directly linked to learner motivation” (Noe, Tews, & Mcconnell Dachner, 2010, p. 279). If learners have no motivation to learn the new material, they will not learn it. For the AHLTA training program, the individuals learning the system must want to learn; otherwise they will not be able to complete the hands-on assessment at the end. For this training course, the motivation to learn must come from within; they must want to succeed in their clinical duties.

Workplace training is not merely for the benefit of the trainee, but rather for the organization as a whole. “Knowledge is generated in the workplace to support the work of the organization” (Crawford & Irving, 2009, p. 31). In the case of the clinical setting, the knowledge is meant to not only benefit the clinic but also the patients. Without the appropriate training, the clinic would not be able to fulfill its mission of providing quality, timely healthcare.

Payne, Stephenson, Morris, Tempest, Mileham, and Griffin (2009) wrote that the construction of knowledge leads to an emphasis on the importance of gaining practical experience. Learning is a process of constructing knowledge which will inevitably lead to the communication of knowledge. Thus, adult learners will construct the knowledge through the training they receive and will in-turn communicate that knowledge to someone else.

Implications

The implications of this evaluation are changes to the methods by which end users are trained on the military’s EHR system. Should this evaluation prove to be positive in nature, a formal whitepaper proposal may be submitted to the Department of Defense suggesting an overall change in training methods. After finding this evaluation useful, a rubric should be included with the document draft to ensure all MTF’s utilize the same training.

In the case that the evaluation failed to show that this method of training was the most appropriate form for the end-users then more research should be conducted to identify other methods of instruction for the EHR system. The training method appears to

have been effective based on the fact that many individuals complete the course the first time around with little difficulty. However, this formal evaluation was necessary in order to confirm that conclusion.

Summary

In Section 1, I provided an outline and rationale for the evaluation of the effectiveness of authentic learning in adult learners using an EHR system. I also provided a brief outline of the significance and implications of this evaluation based on existing literature, as well as the rationale for conducting this evaluation. In Sections 2 and 3 I will describe the detailed methodology and concepts of this evaluation. In Section 4, I will provide a discussion on scholarship, project development, leadership and change, as well as implications and analysis.

Section 2: The Methodology

Introduction

The goal of this evaluation was to collect significant data, and attempt to confirm the research questions. This evaluation elicited responses to examine the use of authentic learning for adults learning an EHR system for the military and to verify that this method of training was an effective form of instruction.

As defined by Spaulding (2008, p 5) program evaluation is characterized by the fact that:

Program evaluation differs from other research because it is used for decision making purposes, whereas research is intended to build our general understanding and knowledge of a particular topic and to inform practice. In general, program evaluation examines programs to determine their worth and to make recommendations for programmatic refinement and success.

The purpose of this evaluation was to address:

1. What were the participants' perceptions of the training?
2. Are these perceptions impacted by age or gender?

The program that I observed was already in use, and was an educational program; therefore an evaluation was the most logical approach for this study. In my evaluation, I did not aim to find new information, but rather assess the existing programs effectiveness. The type of evaluation that I conducted was summative evaluation. The purpose of a summative evaluation is to measure outcomes and how these outcomes relate to the overall success of a program (Patton, 2002). The goal of this evaluation was

to find evidence that the new video-based courses and hands-on training methods were both successful and effective in training new personnel to use the EHR system. Primarily qualitative in nature, I began this evaluation with the establishment of baseline data at the beginning of the project (using a random sample of personnel to assess their knowledge of the system). I did not include this random sample in the final tabulations. Following the random sample, I distributed the evaluation surveys at weekly intervals following the completion of each course. Data for the evaluation focused on the primary goal of the project and its objective.

The ultimate goal of this evaluation was to show whether or not this method of training for the EHR system was the most appropriate form of instruction for new personnel. Additionally, there was a need to investigate whether the evaluation may be able to bring about a social change event with regard to the manner in which personnel are trained at all MTF's. This training method could become a standard for the Department of the Navy as well as the Department of Defense.

Research Design

The learning and work environment that I used for this evaluation was the weekly training sessions for the AHLTA system at a Naval health clinic. This training included classroom instruction using video courses broken down into modules based upon the user's role in the system, as well as hands-on training in a simulated AHLTA environment. The goal of this training was to teach personnel the skills needed to perform their assigned duties.

The head of the IMD granted me preliminary permission to conduct the evaluation and temporarily house the data on a secure server. Only key IMD personnel would have access to the survey or the data; this was due to security constraints within the government computer systems. Tucker and Jones (2010) stated that on-line summative assessments were perceived as more equitable and had fewer complaints from participants. After all data had been collected, it would be electronically removed from the server by the researcher. Because there was no programmer available within the IMD at the time of the evaluation, respondents completed all surveys on paper and the servers were not used.

Justification

The rationale behind this evaluation was simple; this is an educational program that was recently implemented. This training system had been put into effect approximately 1 year before the start of this study, in the hopes of eliminating the standard week-long courses previously offered. The goal of the evaluation was to verify whether this educational program was functioning appropriately and determine the features that would need to be altered. For the purposes of this evaluation, I completed an analysis of the data by: (a) reading and identifying themes or trends in the data by coding for patterns; and (b) statistically analyzing the data.

Web-based courses are now common place in academic circles and the corporate world. Many instructional technology researchers are focusing on methods to improve the effectiveness of web-based courses. In this evaluation the researcher explored the effect of employing a web-based, multimedia curriculum as well as a hands-on learning

environment. This project was designed to evaluate effectiveness only, and not content of the training. This evaluation exclusively aims to show that the training works and may be effective.

Goals

The genre for this evaluation was the new multimedia, video-based, hands-on training system being used at an MTF. This training assists new personnel with learning the skills needed to perform their assigned duties as medical professionals using and electronic medical records system. This project was developed for use within a military clinical installation.

Prior to this evaluation, I assumed that this was the most efficient and effective method of training new personnel. I examined the effectiveness of this new training. I reported the program evaluation results were reported accurately and in a scholarly manner for all participants and audiences to comprehend.

Participants

The sampling for this evaluation involved the participants of the weekly courses offered for AHLTA training. These participants included all hospital corpsmen, nurses, and physicians who had not previously utilized the EHR. The only criteria required for this training course, was that the personnel be new users of the system. In this evaluation, I was able to accommodate this type of sampling because the Naval health clinic is not an extremely large facility, and the class size never exceeds 10 students per week. There were 30 participants from which to extract data over a 2 month time frame.

Data Collection

The instrumentation used for this evaluation consisted of a survey delivered to students after the completion of each week's course offering. This survey consisted of 23 total questions: 17 questions from a six-level Likert scale, four questions that were open ended, and two non-identifiable demographic questions. Of the Likert scale questions, the options were: not applicable, strongly agree, agree, undecided, disagree, and strongly disagree.

Initially, I was going to send the surveys to all learners via their internal email addresses. Ultimately, I gave the participants paper surveys after completing the course. Each learner was given an envelope containing the paper survey; attached to this envelope was a statement of intent regarding the study. Each learner had the opportunity to either complete the survey or to dismiss it. All learners chose to fill out the survey.

After each learner completed the survey, they were instructed to return the survey to the accompanying envelope and seal the envelope. I collected the sealed envelopes and locked them in a filing cabinet until the end of the work day. The envelopes were then transported to my home where they were again locked in a filing cabinet until they were analyzed.

The survey collected data on the student's perceptions of the course offering. Results reported by this survey were: (a) learner completion data, (b) learner satisfaction data, (c) learner perception data, (d) gender, and (e) age. These data were examined independently, as well as together in order to substantiate the research questions.

Data Analysis

The survey consisted of questions regarding students experience with the programs method of instruction as well as various performance questions, and included several multiple choice questions, a few open-ended questions, and two demographic questions that did not identify the participants. An example of this survey, titled AHLTA Course Survey, is included in Appendix B.

Because of the small size of this project, no other individuals, aside from me, were used in the analysis of the data. All paper documents collected are being maintained by myself and stored in a locked file cabinet. The survey data was transposed to an Excel spreadsheet for analysis. The survey results are stored in a password protected spreadsheet that is only be accessible to me. These surveys do not contain any names or personal information. Data are being presented in the form of appendices as well as tables.

The response rate for the survey was 100%. All 30 surveys were distributed and returned, however there were some respondents who did not answer all of the questions. Of these 30 respondents, 16 were male, 9 were female, and 5 did not answer. The ages of respondents was broken down into four groups: (a) 18-24, (b) 25-31, (c) 31-36, and (d) 37-above. Of these groups, 10 fell into group a, five into group b, three into group c, and 7 into group d; this left the five participants who did not answer this question.

Open-ended questions are capable of reflecting either positive or negative results, and are used to measure attitudes, preferences, and subjective reactions. There were four questions on this portion of the survey that were analyzed by coding the responses to find

commonalities. Response rates for the open-ended questions were calculated by dividing the number of completed surveys by the total number of surveys distributed. Response frequency and percentages are also calculated per question in a similar manner.

All open-ended questions were treated in the following manner:

1. Read to identify themes or trends.
2. Coded responses to organize and find patterns.
3. Analyzed patterns and reported on the major themes and how they may have impacted the research questions.

Outcomes

This study evaluated the effectiveness of authentic learning in adult learners using an electronic medical records system. I described and evaluated the new method of training that was designed to aid users in a faster, more productive method of learning an electronic medical records system; the previous method of training required students to be in a traditional classroom setting for several days. Program evaluation examines programs to determine their worth and to make recommendations for programmatic refinement and success.

What are the participants' perceptions of the usefulness of the new program?

The open-ended questions within the survey instrument required an analysis of the data for patterns. The first survey question, "Is there anything that was not covered that you would like to have seen?" was asked to establish whether the students felt there was something missing from the course that might help them understand the material better. Only 36.66% of participants answered this question. Of those participants, all but

one agreed that the training session was sufficient in content. The same participant stated, “More in-depth focus on the area that the student will have authorization to use in AHLTA.”

The second survey question was in a two-part format, “What did the instructor do that helped you the most?” “Did he/she do anything that you feel did not help you learn the material?” was asked to determine from the students perspective whether there was any one thing that the instructor did that was especially helpful. Only 53.33% of participants answered this question. Of those participants, all seemed to agree that the instructor was well informed and helpful in insuring their understanding of the material. This question was answered with statements such as, “Used patience, calm and guided me,” “Answered the questions I had and was helpful,” “Instructor provided advice on how to proceed with automated training and clarified questions I had at end of my lesson when I asked questions.”

The third survey question, “Which training aids helped you the most and which were the least effective?” was asked to determine if there was any one thing in particular that was especially helpful to the students’ learning experience. Only 53.33% of participants answered this question. Of this percentage, three participants had negative responses. One response stated, “A lot of material that as a corpsman I will not use. Made the other information confusing at times.” Another response stated, “The scenario at the end was the most helpful. It’s easier for me to learn things when they're applied, instead of just listening to a video.” The last negative response stated, “I like hands on

training the best, so I think the hands-on experience was the most helpful. The least effective was the printed test given after the hands on training.”

The final item on the survey stated, “Please state what can be done to improve the effectiveness of these training sessions.” The statement gave the students an opportunity to suggest new ideas for the course. Again only 53.33% of participants answered this question. One half of these participants stated that the course needed no changes. Four participants requested more hands on activities. Three participants indicated that the videos should be based on the parts of the program that they will need to use to do their job. One participant stated, “I like instructor based learning better.”

One half of the participants who responded stated that the hands-on training was the most effective training tool, with comments such as “More hands-on training and videos that focus on the portion of AHLTA that the student will be authorized to use; as opposed to videos of all the areas of AHLTA (became too convoluted and confusing).” The second most common answer, with 18.75% of participants responding was the training videos or web-based portion of the training. Additionally, 12.5% of participants stated that they found their instructor to be the most effective learning tool in the class, with comments such as “the facilitator,” and “the instructor the most.”

The overall concept of this research was to provide an evaluation of an existing program in order to determine its validity within the scope of the clinic that it serves. Conducting an evaluation means that the researcher is only assessing the program for its effectiveness. Evaluations are generally considered to be qualitative studies; therefore a

non-statistical analysis would suffice for any open-ended questions in the survey. For the purposes of this evaluation, a form of thematic analysis was used.

A thematic analysis requires a researcher to examine the data to find themes and/or patterns, and to code these patterns to either confirm or deny the research questions (Glesne, 2011). The thematic analysis used in this evaluation produced the above mentioned results on the given survey questions. Thematic analysis gives the impression of a thorough fit for research and evaluations done throughout the medical community. Wright, Maloney and Febowitz (2011) based their research of attitudes toward and the use of electronic problem lists around the use of thematic analysis. In this study the researchers used this analysis approach to classify their observations into themes based on what the clinician's perceptions were.

In another medical study, this process was used to determine the themes within achievement outcomes in hospital and health service accreditation. This was accomplished by examining public domain documents (Avery et al., 2012). In this study, the authors state that this type of analysis is best as it does not impose theoretical concepts onto the study. However, the authors do point out that with this type of study there is a possibility of imposing an "unconscious application of disciplinary or conceptual frameworks, which can interfere with the recognition of these emergent themes" (Avery et al, 2012, p. 82).

Some of the respondents of the open-ended questions stated that the training was too long, or that there was too much information for them to absorb. These seem to be common complaints in medical training that utilizes electronic media. Stromberg (2011)

found that the most common complaints from nurses training with a new system concerned the length of time the training took and the amount of information being presented. Many times trainees feel that they are too busy to sit through such lengthy training, while still other feel that they are being too much information or that it is not pertinent to their role.

The theoretical framework for this evaluation is authentic learning. Authentic learning utilizes materials and/or activities that are based upon real-life experiences. In the case of this evaluation, the authentic learning is the hands-on training that the learners engage in after they have completed the video-based training. Based on the responses from the open-ended questions, it was indicated that the hands-on portion of the training was the “best” part of the training process and that there should be more than one scenario option provided. This would indicate that the training was successful and that the learners desired more opportunities in which to practice their new skills. This is an authentic learning process that can be implemented in future changes to the training by the addition of multiple hands-on practice scenarios that can be labeled as “optional” for students who wish to use the additional practice.

There were 17 perception statements at the beginning of the survey that asked the students to rate their learning experience. The response scale used to evaluate these statements was 1-6; meaning that there was a neutral option for respondents to choose from. The responses on this portion of the survey were analyzed using descriptive statistics. The Statistical Package for the Social Sciences (SPSS), version 21.0 (2012) was used to analyze the statistical data.

After all surveys were returned, the total number for each response column was calculated to give a frequency for each statement. These frequency tables can be seen in Appendix C. It is clear by these frequency tables that the only perception statements not responded too on a consistent basis were statements one and seven. Statement one indicated, “The course included clear objectives.” This statement was skipped more often than any other. This could mean that the learners did not understand the objectives of the course, or the objectives were not made clear enough in the training packet. Statement seven indicated, “Overall, there was a good balance between videos and hands-on time during class.” This statement was skipped only once. This could mean that the learner utilized the course time on one particular area and felt they did not have enough time for the other area, or they were simply not comfortable with the time frame of the course; which is eight hours.

A second frequency analysis was done on the responses to each of the 17 perception statements. These frequency tables can be seen in Appendix D. It is clearly noted by this set of frequency tables that the most utilized response was ‘A’ for Acceptable. The most unused responses were ‘D’ for disagree and ‘SD’ for strongly disagree.

The perception statements that received the negative ratings were statements one, two and three. Statement one indicated, “The course included clear objectives,” and statement three indicated, “The course objectives were achieved.” Once again, these responses could indicate that the objectives are not being stated clearly enough in the training packet, or that the learners simply do not understand the objectives. Statement

two indicated, “The course was presented in a manner that makes it easy to apply the information to my daily duties.” Negative responses for this statement would seem to indicate that some learners did not have a full understanding of what their daily duties within the clinical setting would be. Since each learner is informed at the beginning of the course that they will be trained to perform all required duties of their particular job function (physician, nurse, hospital corpsman, etc.), this would seem to indicate a lack of understanding of overall job functions.

Are these perceptions impacted by age or gender?

In order to address the question of whether age or gender had any bearing on the learners’ perceptions of the effectiveness of this training course, non-identifiable questions were added to the end of the course survey to indicate an age range for the learners as well as their gender. These answers were then input into the SPSS software and analyzed for frequency. The survey groups for age were split into four groups, depicted in Table 1 below. The age group with the highest valid percentage was 18-24; five people did not answer this question. This indicates that overall, the average age for learners in this course fell into the youngest group. While none of the perception responses indicated that there was a strong preference according to age, it can be assumed that within this group of users most are more than comfortable with the video-based and hands-on training. This age group falls into a class of learners who have grown up with technology and feel more comfortable utilizing training systems designed around technology-based training.

The open-ended questions indicated that at least one person would have been more comfortable having a traditional classroom setting with an instructor versus the video-based and hands-on training; however there is no way to determine what age group this individual falls into. This response simply could mean that there was at least one person out of 30 who was not comfortable with this type of training. There is no indication that age had any bearing on the perceptions of this course.

Table 1
Groups by Age

	Frequency	Percent	Valid Percent	Cumulative percent
18-24	10	33.3	40.0	40.0
25-31	5	16.7	20.0	60.0
31-36	3	10.0	12.0	72.0
37-above	7	23.3	28.0	100.0
Total	25	83.3	100.0	
Missing	5	16.7		
Total	30	100.0		

The second question also asked the learners to indicate their gender. Of the learners responding, the highest percentage was male as indicated in Table 2; with five people not answering this question. Because this training system and evaluation were conducted within a military facility, the chances of obtaining a higher percentage of male versus female respondents would be considered normal, as the ratio within the military ranks would contain the same type of ratio. As in the previous example, there were no other indicators throughout the survey to signify that the response to any questions or statements was based upon a learner's gender.

Table 2

Frequency: Gender

	Frequency	Percent	Valid percent	Cumulative percent
Female	5	16.7	16.7	16.7
Male	9	30.0	30.0	46.7
Missing	16	53.3	53.3	100.0
Total	30	100.0	100.0	

Schröter and Alyami (2012) stated, “Evaluators of distance education and e-learning courses are encouraged to collect, analyze, and synthesize a wide range of both quantitative and qualitative data and consider the range of underlying values in their evaluation” (p.144). This evaluation of the EHR training course utilizes both quantitative as well as qualitative data collection and analysis methods to determine the effectiveness of this course.

Kennedy (2009) noted in his review of Ruhe and Zumbo’s work that with regard to distance education and e-learning, a program evaluation should be of merit and worth of social or educational services. This evaluation has provided value to the Naval health clinic by providing data on an experimental method of delivering a required training program. This evaluation has given both merit and worth to this educational process change by indicating that the training is beneficial to the students by providing them with the appropriate skills necessary to perform their assigned duties.

The purpose of this evaluation was to determine the effectiveness of the authentic learning environment for the EHR training program. The effectiveness of the training should not be solely based upon the delivery method. The delivery mechanism should be

less important than the team that manages the learning environment (LeBaron, 2005).

While this training system, like many others is considered an e-learning experience, it is also an authentic learning process. Nielsen, Plos, Furåker and Jakobsson (2012) used an e-learning scenario based upon authentic situations as a pedagogical method for motivating students to reflect over their own learning styles. The authors deemed this to be a form of self-directed learning as the students had to be motivated to succeed. The training being evaluated for this project uses real-world scenarios designed around patient care issues. Authentic patient events were found to be valuable tools for learning for both nurses and doctors (Nielsen et al., 2012). By combining the e-learning and the authentic learning methods together, this training system is both unique in its presentation as well as beneficial to the learners.

The overall conclusion when looking at all of the information provided from the surveys are that the course is and has been an effective method of providing required training for the EHR system. Nearly all of the participants who answered the open-ended questions stated that they liked the course just the way that it was. Of the 30 participants in this evaluation, over half were male and the average age range fell within the ages of 18-24. These two dynamics are significant when considering the environment in which the evaluation took place a military treatment facility. Had this evaluation taken place in an alternative environment, these dynamics may have been very different.

Section 3: The Project

Introduction

In my review of the literature, I confirmed that authentic learning plays an important role in adult educational opportunities. An important component to this setting is the use of a dual learning environment that uses video-based instruction coupled with a hands-on system that mimics the live EHR, to provide medical professionals the most authentic learning opportunity possible.

Program evaluation, as defined by Spaulding (2008), examines programs to determine their worth and to make recommendations for programmatic refinement and success. Program evaluation also combines relevant, valid evidence that is examined through suitable methods and/or techniques. For this evaluation, a local project that had been implemented to improve training practices was examined.

Comparable to existing research, the goal of this evaluation was to examine and determine whether this method of training for the EHR was the most appropriate method of training for new personnel. The successful outcome of this study would help to bring about a social change event by encouraging the Department of Defense to consider making this the standard form of training for the electronic medical records system.

Scholarly Rationale for the Project

This evaluation project was chosen in order to verify that this new training system for the EHR system at a Naval health clinic was a valid resource for training new personnel, both military and civilian. Previous training for all new users to the EHR system required learners to sit in an instructor led course for several days, depending

upon their role within the system. Not only was this time consuming, but it also took new personnel away from their primary job functions for lengthy amounts of time, laying the burden of patient care on the already taxed existing personnel.

This new training design incorporated video-based training modules with hands-on scenarios in order to produce an authentic learning environment for students. By using this new training system, personnel are required to spend one day in the classroom for training, allowing them to enter the work environment much faster than before. The training system was designed to give learners a more thorough and faster method by which to learn the EHR system.

The design of the system relies on authentic learning opportunities coupled with video-based training modules. According to Lombardi (2007, p 2), “Authentic learning focuses on real-world, complex problems and their solutions, using role playing exercises, problem-based activities, case studies, and participation in virtual communities of practice. The learning environments are inherently multidisciplinary.” This training program is aligned with Lombardi’s thoughts in that it uses real-world, role playing exercises for the learners to practice medical encounters.

This evaluation involved the collection of both qualitative and quantitative data. The surveys that I collected included the collection of participants’ perceptions of the course as well the opportunity for the participants to offer suggestions as to changes to the system. While nearly all participants agreed that this training was sufficient in content, there were several suggestions made on changes to the training. These suggestions were further corroborated by the frequency analysis.

The main perception that I noticed during the analysis process, was the repeated disagreement to the suggestion that the course objectives were met or that the learners understood the objectives of the course. This issue was addressed by altering the training packet to include a more precise objective statement at the beginning of the course. Training objectives should be stated in a clear and comprehensible format so that all learners can understand them.

Other perceptions that I noted were to make this training more specialized for the learner. The training modules are currently broken down by content based upon the learner's role within the EHR system (physician, nurse, and hospital corpsman). There is no other way in which to improve upon this process for roles. However, it should be noted that all users are required to complete identical modules at the beginning of the video training, which acquaints the user with the EHR system. These modules could possibly be trimmed down to a bare minimum of one module, but this is something that will need to be reviewed.

How the Problem was addressed through the Project

While surveys, and other qualitative data, allow researchers to gather data from participants via participant responses about perceptions, not all evaluations derive solely from this type of collection process. However, it may often be necessary to use more than one methodology when collecting, analyzing and reporting data. As Schröter and Alyami (2012) discussed, it is important that researchers collect a variety of both qualitative and quantitative data in order to take into account all probabilities within the evaluation process.

Research into the way individuals turn information into transferable knowledge aligns with authentic learning. Lombardi (2007) stated that there are three principles that illustrate this alignment: (a) learners look for connections, (b) attachments come with practice, and (c) new contexts need to be explored. This training system allows for all of these processes to take place. All learners make the connections from the training to the real-world when they begin the hands-on portion of the training, and later when they begin using those skills in the clinical setting. Thus they are building their attachments by repeatedly using the EHR system. This repeated utilization offers the ability to always link the information in their mind with real-world events.

Literature Review Related to the Project

This section offers a combination of the literature that serves as a foundation for this evaluation; this literature varies greatly in type and volume depending upon the topic. Electronic databases such as Google Scholar, ProQuest, and EBSCO were the main sources for the literature. Search terms used to find appropriate literature included: evaluations, performance evaluations, adult learning, authentic learning, and electronic health record training.

The background for this evaluation is the authentic learning and adult learning theories used within this training program. This evaluation looks at authentic learning in a corporate environment. Adult learners are attempting to learn to properly use an EHR to perform their daily job functions. A review of the literature shows that adult learners tend to learn better with authentic learning tasks and this evaluation has attempted to prove this theory.

In a study conducted by McGaghie, Issenberg, Cohen, Barsuk and Wayne (2011), the researchers conducted a study spanning a 20 year time period in which they reviewed articles to identify criteria to prove that simulation-based medical education provided better acquisition of clinical skills. The researchers found that there was an increasing body of proof to show that clinical skills that were developed through medical simulation training directly improved patient care. This premise would seem to correlate with this evaluation study. The students were given video-based training combined with simulation training in order to acquire the necessary skills to conduct patient care with an electronic medical records system.

Evaluations

As noted in Spaulding (2008) evaluations come in many forms, they can be formative or summative. Evaluations can also contain qualitative or quantitative data. For the purposes of this evaluation, the data is qualitative and the form is summative. Summative evaluations attempt to measure the outcome of a program or process. In this instance, the evaluation is measuring the outcome of the training for an EHR system.

There are also many ways in which to collect data for evaluations. For the purposes of this study, a survey was used. Within this survey were Likert-style questions, open-ended questions, and demographic questions. Spaulding (2008) noted that the uses of these types of questions are all good choices for evaluations as long as the open-ended and demographics questions are not over-used.

Evaluation is considered a form of applied research. While similar to research because they are both forms of systemic research, evaluation research is only interested in

collecting data or evidence with regard to the value of a program or process. The main difference with these research processes is that evaluation is about the questions that are asked and not the methods used (Merriam, 2009). Therefore, when looking at the survey used for this evaluation, it is clear that this is a qualitative evaluation of an existing program.

Because this project addressed the effectiveness of a course that had already been implemented, evaluations must be addressed. An evaluation serves the purpose of providing a conclusion of the overall effectiveness of a program that has already been put into place (Patton, 2002). Shipman (2005) stated that evaluations are performance measurements and as such are a continuing activity that simultaneously monitors progress.

An evaluation is designed to request information from the participants such as: (a) what is your opinion of the training program, (b) demonstrate what you have learned. It is also designed to verify whether the participants have grasped the information provided. These objectives are most often accomplished by conducting surveys or interviews with the participants or measuring the changes in quality of work accomplished after the training. In the case of the previously mentioned training program, the survey method was used after the trainees had completed the course. Estimating quality of work was not considered for this evaluation, as participants in this course had never before utilized the EHR system.

When implementing an evaluation, there are questions that should come to mind such as: (a) Did the training meet the objectives, (b) Is there need for improvement, and

(c) Should the training continue. These questions should be the overall objectives of the evaluation and should guide the evaluator into the next phase after the evaluation is complete (Powell, 2006). The participants' perceptions of this evaluation state that there may have been some issues with the objectives of the training course; specifically, whether the course objectives were stated clearly enough for the learners to understand.

This issue can be addressed in revisions to the course by making the objective statements clearer and more prominently displayed so that learners are more aware of them. Based upon the results of this evaluation, there is not a need for large changes to this training system; however, small nuances will need to be addressed to make certain areas more clear. The overall consensus of this training was that it was an effective source for educating users in the EHR system. Therefore, the training should continue, with specified changes.

Authentic Learning

Authentic learning is the practice by which students learn real-life experiences, or experiential learning. Authentic learning is about experience, and one of the key concepts of adult learning is a learner's life experience. The theory behind this evaluation is that by using the video-based training to learn the concepts, the learner will then be able to satisfactorily complete the hands-on or authentic learning, portion of the training or the authentic learning portion. By providing more relevant, authentic learning strategies, the learning environment becomes more innovative (Neo, Neo & Tan, 2012).

This authentic learning environment affords learners real-life scenarios by providing the same functionality as the live system. Thus, learners will have an

opportunity to function in the system as if they were performing their daily job duties.

This, in turn, provides learners with an authentic learning environment, which enhances the learners' cognition of the system.

There are many schools of thought about experiential or authentic learning. There are also debates as to what an educator's role is in this process. Some contend that educators should have more of a role, while others disagree (Merriam, Caffarella, & Baumgartner, 2007). This evaluation does not seek to find the answer to this question, only to determine that this authentic learning environment was effective.

In Lombardi (2007), it is stated that within an authentic learning environment, students are motivated to persevere despite frustration. This was evident from some of the participant responses to the course survey. Those learners' who voiced frustration or disagreement with the course, persevered through the course, learned the required skills, and proceeded to function within their clinical settings with little to no additional assistance. This action would be due to each learner's ability to acquire the knowledge through the use of the hands-on training. Neo and colleagues (2012) also point out that the coupling of authentic learning strategies with multimedia technologies enhances the learning outcome.

Adult Learning

Based on research from previous studies, adult learning theory plays a very important role in the education of adults, both in a collegiate and corporate environment. In Knowles, Holton & Swanson (2005) original research, an andragogical model was put forward that was based on four assumptions about adult learners and their development:

- The need to know – adults need to understand why they must learn something before beginning the learning process.
- Self-concept – adults have a self-concept of being responsible for their own decisions and their lives.
- Learner’s experience – adults bring much life experience with them to the learning activity.
- Readiness to learn – adults become ready to learn in order to adapt to real-life situations, such as employment.

Knowles later added another assumption to this list, motivation. This assumption states that adults are responsive to external motivators; however internal motivators are more powerful for adults (Knowles et al, 2005, p.68). In Merriam (2001) Davenport and Davenport cited a long list of what andragogy is: (a) theory of adult education; (b) theory of adult learning; (c) theory of technology of adult learning; (d) method of adult education; (e) technique of adult education; or (f) a set of assumptions. These ideas could be debated forever. Simply stated, andragogy is a concept of adult education.

Abela (2009) stated that the concept of andragogy is often used in medical education, where this evaluation has its roots. However, he also emphasizes that adult learning is much more than simply the use of andragogical methods. His preference lies with transformative learning rather than traditional adult education theories. Taylor (2008) stated that “Recent research reveals that it is important to appreciate the role of life experiences among learners and become aware of learners who are susceptible to or

who desire change” (p.12). These life experiences play an important role in an adult learning, whether it is for collegiate work or the corporate environment.

Educators should be challenged to strive for the best possible method of adult learning possible for the chosen environment. “Adult learners are diverse and have their own histories to consider” (Cercone, 2008, p. 150). This would be true of the learners in this evaluation. They are all diverse and have their own method of learning. Many of these learners are of an age, where multi-media technology has been a part of their lives since grade school.

The learners involved in this evaluation, were required to use multi-media technology to complete this course of study. The concept of multimedia driven learning is not new and it is not going away. This can be a challenge for some adult learners, especially those who may not have a sound understanding of technology. It is up to instructors and course designers to take all things into consideration when developing authentic learning for adult learners.

Project Discussion

Resources, Supports, and Barriers

After completing the project the next step would be to implement any necessary changes to the training program that were discovered during the evaluation process. After reviewing all the data collected, the following changes will be made to the training system: (a) clearly state objectives of the course, (b) place new objectives statements in prominent location for learners to be aware of, (c) attempt to modify universal training

videos in an effort to shorten the time frame, and (d) add additional hands-on modules to the end of the training packet, emphasizing that these are optional as time allows.

The needed resources to implement this project include a CHCS/AHLTA specialist. The specialist for this training must communicate clearly to guide the new personnel along the process. Currently, the Naval health clinic employs two CHCS/AHLTA specialists. It is their sole responsibility to train, and support all new and existing users in the utilization of these systems.

Other resources include the use of materials, classroom space, and needed equipment such as computers with access to the training and network connectivity. All computers in the classroom contain a standard operating system, and security software. These computers are then installed with all necessary training software as well as the live EHR system. All new users entering the clinic are given log-in accounts so they will be able to access any necessary training.

The allocation of space and materials reflects the organization's commitment to the program. The classroom is made available to the IMD specifically to provide computer based training to command personnel. It contains seven computers and additional space for a minimum of four additional students to work on portable computers. Materials used for this training includes a paper packet that is printed out on the day of the training and is specific to the trainee. This packet is based upon the user's role within the EHR and guides the trainees through their individualized training and hands-on portion.

Proposal for Implementation and Timetable

To accommodate the necessary changes to this training system, approximately two months of time would be required. This time frame would include making the required changes, having the changes double checked by a departmental counterpart, and having the proposed changes approved by the department head. After all changes are made and approval is given, the implementation of the proposed changes can begin.

A potential barrier for implementing this project would be the challenge of the workload of the CHCS/AHLTA specialists as well as the new personnel. The CHCS/AHLTA specialists cover other projects and assignments. Expectations of the project changes would not be met if these supports were excluded.

While not really a potential barrier, the possibility of problems with the technology should be considered. If there should be an interruption to the network resources at the clinic, the training would not be possible, or at the very least would have to be postponed. However, interruptions are always a possibility no matter the location, as technology is not perfect.

Roles and Responsibilities of Students and Others

The following individuals would be involved in the training program: (a) CHCS/AHLTA specialists, (b) other IMD staff, and (c) students. Each individual has a distinct role that will contribute to the success of the training program. The role of the CHCS/AHLTA specialist is to ensure that all new personnel complete the web-based, video courses as well as the hands-on module as well as any other EHR training that may be required based on the user's role. Once these are completed, the specialists are responsible for ensuring that the new personnel can access the live EHR system and have

been provided with their role specific privileges within the system. The specialists will also verify with the user that everything is functioning properly once the user begins working in their assigned department.

The role of other IMD staff members is to ensure that all new personnel, not previously trained or knowledgeable in the EHR system, have been signed up for their courses and have been given their log-in credentials for accessing the government computer systems. This enrollment is done when the personnel first check into the department after they return with their final check-in documents.

The role of the students as new personnel to the facility is to complete all required training after reporting to the command. All personnel assigned to medical areas or clinics are required to sign up to be trained in the electronic medical records systems or test-out of these programs if they have already used them at a different facility. This scheduling of classes is done when students check-in with the IMD.

Implications Including Social Change

Local Community

The ultimate goal of the evaluation was to show that the method of training for the EHR system is the most appropriate method for new personnel. A secondary goal of this evaluation was to aid in bringing about a social change event by encouraging the Department of Defense to re-examine how this training is normally conducted and encourage an enterprise wide alteration. Generating this social change would be beneficial for the Department of Defense as a cost saving measure as it could save significant amounts of money by implementing this training option and doing away with

costly contracts for outside personnel utilized to train users on the EHR system. Utilizing this training method would allow MTF's to engage current CHCS/AHLTA personnel to deliver the training. This evaluation would be helpful to all MTF's in training and educating personnel on authentic learning in adult educational practices. It would also serve as a future reference for researchers on the subject of training in the area of EHR systems or in other healthcare arenas.

If this evaluation had proven that this method of training was not in the end-users best interest, then it would be suggested that more research be conducted in order to find more appropriate methods of instruction for the EHR system; such as returning to a routine classroom schedule for each different role within the system. This type of change could be detrimental to daily operations because it would potentially require the learners to undergo additional training before they could begin working within their clinical spaces. This would cause problems throughout the clinic, as there would not be enough trained personnel to utilize the system, resulting in an additional burden on the existing personnel.

Far-Reaching

The implications of this evaluation were to effect change to the methods by which end users are trained to use the military's EHR system. Given that this evaluation has proven to be positive in nature, a formal whitepaper proposal should be submitted to the Department of Defense suggesting an overall change in training methods. Because the survey has been proven effective, a lengthier study should be conducted, possibly at an alternate MTF, in order to make an unquestionable conclusion. Should a second study

prove to be positive as well, a suggested rubric would also be included with the document draft ensuring that all MTF's are using the same training methods.

Conclusion

In Section 1, I provided an outline and rationale for the evaluation of the importance of authentic learning in adult learners using an electronic medical records system. I also provided was a brief outline of the significance and implications of this evaluation. In Section 2, I provided an outline of the type of evaluation that was conducted as well as a justification for the evaluation. The results of the evaluation data are also reviewed in this section. In Section 3, I described in detail the project and how it was conducted along with another examination of relevant literature including the reasoning behind the use of an evaluation for this research. And in Section 4, I will provide a discussion on scholarship, project development, leadership and change, as well as implications and analysis.

Section 4: Reflections and Conclusions

Introduction

The purpose of this evaluation was to examine the effectiveness of authentic learning for adult learners as they learn to use an EHR system for the military by using a new training system that combines web technologies and multimedia components. The environment being focused on is an MTF. In this environment, there are learning opportunities occurring on a weekly basis for all new personnel. These involve courses that show new users how to use the EHR systems: CHCS, and AHLTA. For the purposes of this evaluation AHLTA was the primary focus for the training. Data was collected following a two-stage Internal Review Board (IRB) process, which included obtaining an IRB from the Department of Defense to use data from a United States Naval facility as well as an IRB from Walden University to conduct the evaluation. Results of this evaluation were analyzed using descriptive statistics as well as methods of coding the data for patterns.

Project Strengths

The goal of this evaluation was to prove that this training system was an effective method by which to deliver the required training for the EHR system. After having proven this theory, the strength of this method of training is that it can be incorporated at all other MTFs, so that all medical personnel using this system are trained in the same manner. By doing so, it is assured that all medical personnel are not being trained in only a portion of the system and that all personnel are capable of completing any required tasks within the system without further training.

This training incorporated both qualitative and quantitative methods in order to prove the research questions. This use of multiple methods within an evaluation model is substantial and beneficial to the overall quality of the study. Davey, Gugiu and Coryn (2010) stated that researchers need to change their research designs in order to become acquainted with the truths of the research environment in which they conduct a study. Using both methods to evaluate the collected data only strengthens the claim of it being a valuable training system. By incorporating this type of training the contracted trainer, present at all large MTFs, will no longer be necessary resulting in a cost saving benefit for the Department of Defense. This training method can be administered and delivered by existing CHCS/AHLTA specialists that reside within every MTF as part of the civilian workforce.

Limitations

One limitation of this evaluation is that it is still possible for the Department of Defense to reject this training as experimental. In this event, the training system would reside at only the originating facility. This limitation would result in no cost saving benefits as there are no contract trainers at the originating MTF. Another possible limitation to addressing this issue would be that the command at the originating facility determines that this type of training is not in their best interests and requests that the previous method of classroom instruction be resumed. A need exists for continued research on the effectiveness of this training system as well as the long-term outcomes of continued use.

Recommendations

On the whole, I was successful in gathering the data needed to make a valuable assumption about this course. While most of the respondents approved of the course and its method of delivery, one person did not. This could possibly be attributed to an individual learning dynamic rather than the course itself. This student may not learn well with this type of delivery method. There will always be learners with different learning abilities in any course (Clark, 2002). This means that there will never be any two learners in a classroom who learn in the exact same way. Along with their different learning methods, learners also bring with them different backgrounds and experiences. These experiences are what make adult learners unique.

The most pronounced response from the participants was that the objectives of the course were not clearly stated, or that they were not understood. Learning objectives tell the learners what they will be able to accomplish once they have completed the course. Olesen-Tracey (2010) stated that goals and benchmarks should be realistic and clear to the learner within an online learning environment. I addressed this issue by re-writing the objectives and displaying them in a prominent location where students will be aware of them.

Another suggestion was to shorten the video delivery based upon the user's role within the system. The course was already designed around the user's role within the system, and they are not taught any information outside of this role. The hypothesis here was that the user assumed that they would not be doing these tasks within the clinic that they were assigned to. However, when teaching users to use the system, they are taught

everything for their role. The delivery was done this way because frequently, users (mostly hospital corpsmen) will rotate from clinic to clinic working only a few months in each one. With this in mind, the course could be stream lined a bit further in order for the training to be area specific. This way a user would be trained to use only the modules that will be utilized within a specific area. The down side to this nature of training is that the user would not be trained to use the whole system and could, therefore encounter difficulties if transferred to a different clinic or facility.

The last suggestion was to add more hands-on training to the course. While this is possible to do, it may become counterproductive to the flow of clinical operations. This course is designed to be a one-day course, as new users often are overwhelmed with additional required training upon arriving at the clinic. Additional hands-on training would make the course longer. However, the additional hands-on scenario will be added to the training and it will be emphasized that it is optional if the trainee wishes to make use of it, time permitting.

Scholarship

My experience during the planning and execution stages of the proposal and evaluation phases has enabled her to exercise extreme patience and understanding of scholarship. Scholarship started for me while attending doctoral courses at Walden and was intensified while attending a residency. During these times, I was exposed to an array of information and diverse perspectives on the educational discipline.

The insights gained during this time helped her to develop her own sense of belonging and a better understanding of the educational field. With this knowledge, I was

able to implement a new form of training that I hoped would forever change the way the training in my work environment was accomplished. I also hoped to prove that the newly devised method of training was indeed the best alternative. I learned that within the bounds of research, especially involving government entities, I must exercise great patience. This test came when applying for a government IRB, a process which proved to be a true test of my resolve to prove her theory. To this end, I discovered that I would actually need two IRB applications in order to execute and complete the evaluation.

Scholarship is not just about academics, but rather the continuous process of making an academic change, whether it is a traditional educational setting or a work environment. It is about beginning research, finding valuable sources, tackling the problem at hand, finding a solution to that problem, and proving a theory on how to fix the problem. It is also about implementing new forms of educational practice and proving their effectiveness through evaluation.

It was important for me to remind myself that this was an evaluation project and not a research project. The distinction used to separate the two areas is that evaluation is used for decision-making purposes while research is used to build an understanding of something (Lodico, Spaulding, & Voegtle, 2010). While this is a broad definition of the two areas, it was enough to keep me on track.

Project Development and Evaluation

I learned through the development and evaluation process that what may seem externally straightforward can at times be very complicated. I also had no trouble developing the theory and proposal, but became overwhelmed when being introduced to

the fact that I had to change my thought process. After taking a step back, I was able to gain insight into a new method of study, which proved to be an uncomplicated approach.

I also discovered that I needed to alter my method of study to better proceed with the project. This led me down a clarified path, and I was able to develop an evaluation that was simple but effective. I also learned that less can be more when it comes to research and that change can be beneficial.

Thus, the development of the above evaluation was created by altering the research into an evaluation of the existing training system. This led me to develop two defined research questions that were accountable through the use of Likert-style questions, coupled with short open-ended questions and unidentifiable demographic questions. I found that this method of evaluation was not complicated to accomplish and reduced me stress.

Once the outline of the evaluation was developed, I learned that there were many other valuable learning experiences involved in this process. I also learned about ethical issues while completing two Institutional Review Board (IRB) applications. The first IRB had to be completed with the Department of Defense in order to conduct research within a United States Naval installation. The second IRB was completed with Walden University in order to analyze the data collected. These IRB applications are required by federal regulations to protect against human rights violations (Creswell, 2009). I learned that in this type of study, the sample size did not necessarily have to be large in order to accomplish the goals. What I thought would have been an acceptable amount of data was

an overwhelming amount of data and a smaller but efficient sample size was actually easier to handle.

Finally, I learned quite a lot about developing a study, more precisely an evaluation. I have learned about the design of the research project, the implementation of an evaluation, assembling credible source materials, collecting and analyzing data, and finally reporting the outcomes of the evaluation. I have gained an understanding of how to develop a piece of literature that will contribute to the existing body of scholarly writing within this area.

Leadership and Change

During this evaluation, I have come to comprehend a fair amount about leadership and change. I have also altered some of my previous ideas of these areas. While I may have assumed that I understood what leadership was, I did not fully understand that to be a proper leader in your field of study, it is essential to take chances and remain outgoing in your endeavor to discover the answers to any and all inquiries.

To accomplish this, I had to make myself heard in the work environment, and make others understand that the training system was not working and that change could be better for both the clinic and the personnel being trained. I did this by proposing the changes to the training system. Once it was implemented, I had the opportunity to observe how the personnel reacted to the new design. I noticed that the end-users had fewer problems after they were trained than they had had prior to instruction and came to understand that implementation of change would be necessary for success. I then proposed to the chief information officer and to my departmental counterpart that this

method of training become the norm at their facility and gave examples of online training to back up my position.

The timing of this change was optimal for me and the evaluation. Once again, I would need to make my case to leadership and to the Navy to conduct this evaluation. With authorization in hand, I was ready to proceed with the evaluation in the hopes of contributing to social change throughout Navy medicine.

Analysis of Self as Scholar

I have come a long way as a scholar. When I began this program I was a part-time instructor working with adults who had big concepts but no knowledge of how to implement them into the workplace. I have worked hard to obtain the skills and knowledge needed to effectively instruct adult learners in a variety of disciplines. Thus far, I have become not only a consumer but also a contributor of research. I now believe that I have the necessary skills to take those ideas and turn them into useful learning systems. I mostly attribute this knowledge of scholarship to her time at Walden University. It has been through my interactions with fellow students and professors that have helped shape me as a scholar. These interactions have provided a sound foundation from which to continue on the path of scholar practitioner.

Analysis of Self as Practitioner

In order for me to become a practitioner of scholarship, I needed to acquire the knowledge and the skill set. I did this through doctoral courses at Walden and through the development and execution of the aforementioned evaluation. Through these processes, I learned how to apply theories and practices, adapt and change to the situation, and apply

the adult learning strategies to the course room. My next goal is to be able to take these newly found skills and apply them to a classroom full of adult learners to continue the process of social change.

As a scholar practitioner, I may go forward with the outcomes from this evaluation to encourage a change across Naval medical facilities to incorporate this new idea of training for the electronic medical record system. This change would cause a social change effect across the military medical community.

Analysis of Self as Project Developer

At the beginning of this long road to obtain this distinguished degree in education, I did not think of myself as much of a developer of anything. Although having previous instruction experiences at numerous colleges and training new employees for quite some time, I did not feel I was contributing to the field of education.

During this evaluation, I have changed both mentally and emotionally. I have learned no person is ever too deeply rooted to learn new ways to perform innovative tasks and alter their train of thought. I have learned how develop a sound evaluation and take it from paper to practice. I understand how to improve upon my writing skills, to fact check all ideas, to acquire valid, reputable source information, and to implement a quality evaluation. I did all of these things and more to ensure that I produced a quality evaluation that all involved could be proud of.

Importance of Work and What Was Learned

This evaluation would be helpful to all MTF's in training and increasing awareness in the area of authentic learning in adult educational practices. It would also

serve as a future reference for researchers on the subject of training in the area of electronic health records or in other healthcare arenas. The implications of this evaluation are to hopefully bring about change to the methods by which end users are trained to use the military's EHR system. To bring about this change, formal documentation should be submitted to the Department of Defense suggesting an overall change in training methods.

I could greatly improve the possibilities of future use of this training system by incorporating the suggested changes previously listed. I can now provide evidence of the effectiveness of this training, as well as relay the improvement plan to the MTF hosting the training system. The most important aspect of this study is the ability to provide evidence that the training system is performing at or above expectations and that the potential for social change at the local level and beyond is significant. On a larger scale, the findings from this evaluation were generated from both qualitative and quantitative methods and can be compared to studies of a similar nature at other institutions to contribute to the overall body of work on authentic learning practices in adult educational environments.

Implications, Applications, and Directions for Future Research

Implications for Future Research

From the results of this evaluation, this training has been effective thus far. The overall perceptions of the course were good; most learners had no issues or complaints about the course. The idea that age or gender would play a role in the outcome was proven to have no bearing on the effectiveness of the course.

This evaluation's implication for future research originates from the limitations discussed earlier in this section. It would be significant to replicate the same study with a larger sample size spanning a longer period of time, as the researcher's study was restricted to 30 participants. Also, it would be interesting for the replication to take place at a different MTF in order to determine whether it would bring about similar or different findings. In other words, a different setting could bring different factors into the evaluation that could influence the outcome, such as a diverse community and varying educational and cultural backgrounds with respect to a new population. Any change in the overall dynamic of the personnel being trained, could result in unexpected outcomes.

Applications for Future Research

When reflecting on the importance of this evaluation and what was learned, I highlighted that my study provided evidence for the effectiveness of the training program. I added that an evaluation with positive findings could serve all of the Department of Defense and not just the MTF where the study took place. One suggested application would be to follow up on this evaluation after a significant amount of implementation time had passed to verify continued effectiveness. A follow-up study could determine whether additional changes would need to be made to better meet the students' learning needs.

Directions for Future Research

After completing my evaluation, I would like to see the initial problem be dealt with in a different manner. A suggested approach for future research is a case study. This study would follow the learners from the beginning of the course through to the time that

they are actually using what they have obtained within the live clinic setting. This approach would allow for more variables to be considered and would give an overall impression of the learners' ability to retain the information they have acquired. This study would implement questions such as: How effective are the instructional strategies in improving retention of material? How useful are the related instructional strategies?

I would note that any additional research in the area of training regarding the governments EHR system would be beneficial. It was noted while researching for this study that there is very little literature available and very few studies have been done within this field. It would be beneficial to include the training methods and practices that are utilized within government installations as part of the overall available literature within this field of study.

Conclusion

In Section 1, I provided an outline and rationale for the evaluation of the importance of authentic learning in adult learners using an electronic medical records system. Also provided, is an outline of the significance of and the implications of this evaluation. In Section 2, I provided a sketch of the type of evaluation being conducted, the justification as well as the outcome of the evaluation. In Section 3, I described in detail the project and how it was conducted along with a literature review. And in Section 4, I have reviewed the outcomes of the evaluation and showed that this training program is effective in its current form. Altering this training program would not be in the best interests of the trainees at this time. This segment also covered the researcher's transformation from student to scholar, from scholar to practitioner and developer.

To bring about a social change within the government's program of training, new users would most likely require an extensive study. For the time being, this evaluation has efficiently shown the success of the program with a Naval health clinic. The originating Naval health clinic will be able to confirm and display that this method of course delivery is working for its users. This study has positioned the foundation to initiate a superior change within Navy Medicine and the Department of Defense.

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A Project Evaluation:
An Evaluation of Authentic Learning
In an Electronic Medical Records
System

Acknowledgments

First and foremost I would like to thank the Naval health clinic and staff for assisting me and providing the opportunity to conduct this program evaluation. I would also like to thank the participants for allowing me to gather the information needed from their perspective. I appreciate everyone for their support, partnership, and direction throughout this process.

The Problem

This evaluation project was chosen in order to verify that this new training system for the EHR system at a Naval health clinic was a valid resource for training new personnel, both military and civilian. Previous training for all new users to the EHR system required learners to sit in an instructor led course for several days, depending upon their role within the system. Not only was this time consuming, but it also took new personnel away from their primary job functions for lengthy amounts of time, laying the burden of patient care on the already taxed existing personnel. The rationale behind this evaluation was simple; this is an educational program that was recently implemented. The aim of the evaluation was to verify whether this educational program was functioning appropriately and determine the features that would need to be altered.

This new training design incorporates video-based training modules with hands-on scenarios in order to produce an authentic learning environment for students. By utilizing this new training system, personnel are required to spend one day in the classroom for training, allowing them to enter the work environment much faster than before. The training system was designed to give learners a more thorough and faster method by which to learn the EHR system.

Participation

The overall goal of the clinic is to provide quality and timely healthcare to all military personnel, retirees, and their families. To do this properly, all clinical physicians, nurses, hospital corpsmen, and administrative personnel who deliver these services must have a thorough working knowledge of the medical records system that is utilized in the

facility. Ensuring that all personnel receive this training is the responsibility of the CHCS/AHLTA specialists within the IMD. The training is typically two to eight hours in duration, prior to the actual hands-on learning task. This time frame stems from the depth to which the user must train. For example, a clerk, corpsman or nurse would not require the same degree of training as a physician due to their system role.

An Evaluation of Authentic Learning in an Electronic Medical Records System

The ultimate goal of this evaluation was to show whether or not this method of training for the EHR system was the most appropriate form of instruction for new personnel. Additionally, there was a need to investigate whether the evaluation may be able to bring about a social change event with regard to the manner in which personnel are trained at all MTF's. This training method could become a standard for the Department of the Navy as well as the Department of Defense.

Findings

The purpose of this evaluation was to address: (a) What were the participants' perceptions of the training and (b) Are these perceptions impacted by age or gender? The program being observed was already in use, and was an educational program; therefore an evaluation was the most logical approach for this study. The evaluation did not aim to find new information, but rather assess the existing programs effectiveness.

This study evaluates the effectiveness of authentic learning in adult learners using an electronic medical records system. This researcher described and evaluated the new method of training that was designed to aid users in a faster, more productive method of learning an electronic medical records system; the previous method of training required

students to be in a traditional classroom setting for several days. Program evaluation examines programs to determine their worth and to make recommendations for programmatic refinement and success.

What are the participants' perceptions of the usefulness of the new program?

The open-ended questions within the survey instrument required an analysis of the data for patterns. The first survey question, "Is there anything that was not covered that you would like to have seen?" was asked to establish whether the students felt there was something missing from the course that might help them understand the material better. Only 36.66% of participants answered this question. Of those participants, all but one agreed that the training session was sufficient in content. The same participant stated, "More in-depth focus on the area that the student will have authorization to use in AHLTA."

The second survey question was in a two-part format, "What did the instructor do that helped you the most?" "Did he/she do anything that you feel did not help you learn the material?" was asked to determine from the students perspective whether there was any one thing that the instructor did that was especially helpful. Only 53.33% of participants answered this question. Of those participants, all seemed to agree that the instructor was well informed and helpful in insuring their understanding of the material. This question was answered with statements such as, "Used patience, calm and guided me," "Answered the questions I had and was helpful," "Instructor provided advice on how to proceed with automated training and clarified questions I had at end of my lesson when I asked questions."

The third survey question, “Which training aids helped you the most and which were the least effective?” was asked to determine if there was any one thing in particular that was especially helpful to the students’ learning experience. Only 53.33% of participants answered this question. Of this percentage, three participants had negative responses. One response stated, “A lot of material that as a corpsman I will not use. Made the other information confusing at times.” Another response stated, “The scenario at the end was the most helpful. It’s easier for me to learn things when they’re applied, instead of just listening to a video.” The last negative response stated, “I like hands on training the best, so I think the hands-on experience was the most helpful. The least effective was the printed test given after the hands on training.”

The final item on the survey stated, “Please state what can be done to improve the effectiveness of these training sessions.” The statement gave the students an opportunity to suggest new ideas for the course. Again only 53.33% of participants answered this question. One half of these participants stated that the course needed no changes. Four participants requested more hands on activities. Three participants indicated that the videos should be based on the parts of the program that they will need to use to do their job. One participant stated, “I like instructor based learning better.”

One half of the participants who responded stated that the hands-on training was the most effective training tool, with comments such as “More hands-on training and videos that focus on the portion of AHLTA that the student will be authorized to use; as opposed to videos of all the areas of AHLTA (became too convoluted and confusing).” The second most common answer, with 18.75% of participants responding was the

training videos or web-based portion of the training. Additionally, 12.5% of participants stated that they found their instructor to be the most effective learning tool in the class, with comments such as “the facilitator,” and “the instructor the most.”

There were also 17 perception statements at the beginning of the survey that asked the students to rate their learning experience. The response scale used to evaluate these statements was 1-6; meaning that there was a neutral option for respondents to choose from. After all surveys were returned, the total number for each response column was calculated to give a frequency for each statement.

Statement one indicated, “The course included clear objectives.” This statement was skipped more often than any other. This could mean that the learners did not understand the objectives of the course, or the objectives were not made clear enough in the training packet. Statement seven indicated, “Overall, there was a good balance between videos and hands-on time during class.” This statement was skipped only once. This could mean that the learner utilized the course time on one particular area and felt they did not have enough time for the other area, or they were simply not comfortable with the time frame of the course; which is eight hours.

The perception statements that received the negative ratings were statements one, two and three. Statement one indicated, “The course included clear objectives,” and statement three indicated, “The course objectives were achieved.” Once again, these responses could indicate that the objectives are not being stated clearly enough in the training packet, or that the learners simply do not understand the objectives. Statement two indicated, “The course was presented in a manner that makes it easy to apply the

information to my daily duties.” Negative responses for this statement would seem to indicate that some learners did not have a full understanding of what their daily duties within the clinical setting would be. Since each learner is informed at the beginning of the course that they will be trained to perform all required duties of their particular job function (physician, nurse, hospital corpsman, etc.), this would seem to indicate a lack of understanding of overall job functions.

Are these perceptions impacted by age or gender?

In order to address the question of whether age or gender had any bearing on the learners’ perceptions of the effectiveness of this training course, non-identifiable questions were added to the end of the course survey to indicate an age range for the learners as well as their gender. The survey groups for age were split into four groups, depicted in Table 1 below. The age group with the highest valid percentage was 18-24; five people did not answer this question. This indicates that overall, the average age for learners in this course fell into the youngest group. While none of the perception responses indicated that there was a strong preference according to age, it can be assumed that within this group of users most are more than comfortable with the video-based and hands-on training. This age group falls into a class of learners who have grown up with technology and feel more comfortable utilizing training systems designed around technology-based training.

Discussion of Results

The theoretical framework for this evaluation is authentic learning. Authentic learning utilizes materials and/or activities that are based upon real-life experiences. In

the case of this evaluation, the authentic learning is the hands-on training that the learners engage in after they have completed the video-based training. Based on the responses from the open-ended questions, it was indicated that the hands-on portion of the training was the “best” part of the training process and that there should be more than one scenario option provided. This would indicate that the training was successful and that the learners desired more opportunities in which to practice their new skills. This is an authentic learning process that can be implemented in future changes to the training by the addition of multiple hands-on practice scenarios that can be labeled as “optional” for students who wish to use the additional practice.

The open-ended questions indicated that at least one person would have been more comfortable having a traditional classroom setting with an instructor versus the video-based and hands-on training; however there is no way to determine what age group this individual falls into. This response simply could mean that there was at least one person out of 30 who was not comfortable with this type of training. There is no indication that age had any bearing on the perceptions of this course.

The second question also asked the learners to indicate their gender. Of the learners responding, the highest percentage was male. Because this training system and evaluation were conducted within a military facility, the chances of obtaining a higher percentage of male versus female respondents would be considered normal, as the ratio within the military ranks would contain the same type of ratio. As in the previous example, there were no other indicators throughout the survey to signify that the response to any questions or statements was based upon a learner’s gender.

Conclusion

The overall conclusion when looking at all of the information provided from the surveys are that the course is and has been an effective method of providing required training for the EHR system. Nearly all of the participants who answered the open-ended questions stated that they liked the course just the way that it was. Of the 30 participants in this evaluation, over half were male and the average age range fell within the ages of 18-24. These two dynamics are significant when considering the environment in which the evaluation took place a military treatment facility. Had this evaluation taken place in an alternative environment, these dynamics may have been very different.

Appendix B: Ahlta Course Survey

Directions: Please respond to the following statements based on your knowledge, belief, attitude or inclination using the following scale:

Not Applicable=N/A

Agree=A

Disagree=D

Strongly Agree=SA

Undecided=U

Strongly Disagree=SD

Place a check in the appropriate column.

Question	N/A	SA	A	U	D	SD
The course included clear objectives.						
The course was presented in a manner that makes it easy to apply the information to my daily duties.						
The course objectives were achieved.						
Having completed this class, I feel I can successfully use this training to perform my job.						
The pace of the course was appropriate.						
This was a time-efficient way for me to be trained on how to use the AHLTA system.						
Overall, there was a good balance between videos and hands-on time during class.						
Do you feel that the information was presented clearly and logically?						
The trainer provided satisfactory answers and/or resolutions to all my questions.						
The trainer was well prepared and demonstrated a sound knowledge of AHLTA.						
The trainer followed up with me regarding any unanswered questions in a timely manner.						
The trainer communicated effectively.						
The videos were helpful and professional						
The course included exercises that helped my proficiency.						
The course had the right amount of materials for the time allowed.						
The room and environment were conducive to learning.						
Hardware, software and equipment were conducive to learning.						

Is there anything that was not covered that you would like to have seen?

What did the instructor do that helped you the most? Did he/she do anything that you feel did not help you learn the material?

Which training aids helped you the most and which were the least effective?

Please state what can be done to improve the effectiveness of these training sessions.

Please circle your gender:

Male

Female

Please circle your age group:
(25-31)

(18-24)

(31-36)

(37-above)

Appendix C: Frequency By Question

Frequency Q1-Q7

		Q1	Q2	Q3	Q4	Q5	Q6	Q7
N	Valid	27	30	30	30	30	30	29
	Missing	3	0	0	0	0	0	1
Mean		2.81	2.93	2.63	2.83	2.83	3.13	3.14
Std. Deviation		.557	.868	.556	.747	.699	1.074	.990
Variance		.311	.754	.309	.557	.489	1.154	.980
Percentiles								
	25	2.00	2.00	2.00	2.00	2.00	2.00	2.50
	50	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	75	3.00	3.00	3.00	3.00	3.00	4.00	3.50

Frequency Q8-Q14

		Q8	Q9	Q10	Q11	Q12	Q13	Q14
N	Valid	30	30	30	30	30	30	30
	Missing	0	0	0	0	0	0	0
Mean		2.87	2.50	2.43	2.33	2.50	2.97	2.87
Std. Deviation		.571	.572	.568	.606	.572	.765	.860
Variance		.326	.328	.323	.368	.328	.585	.740
Percentiles								
	25	3.00	2.00	2.00	2.00	2.00	2.00	2.00
	50	3.00	3.00	2.00	2.00	2.00	3.00	3.00
	75	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Frequency Q15-Q17

		Q15	Q16	Q17
N	Valid	30	30	30
	Missing	0	0	0
Mean		3.03	2.50	2.63
Std. Deviation		.890	.509	.669
Variance		.792	.259	.447
Percentiles				
	25	2.75	2.00	2.00
	50	3.00	2.50	3.00
	75	3.00	3.00	3.00

Appendix D: Frequency By Response

		<i>Frequency Response Statistics</i>					
		NA	SA	A	U	D	SD
N	Valid	6	17	17	11	10	3
	Missing	11	0	0	6	7	14
Mean		1.17	10.24	16.59	2.64	1.50	1.00
Std. Error of Mean		.167	.864	.665	.388	.224	.000
Median		1.00	9.00	16.00	2.00	1.00	1.00
Mode		1	7	16	2	1	1
Std. Deviation		.408	3.562	2.740	1.286	.707	.000
Variance		.167	12.691	7.507	1.655	.500	.000
Skewness		2.449	.458	.718	.493	1.179	
Std. Error of Skewness		.845	.550	.550	.661	.687	1.225
Kurtosis		6.000	-1.564	.641	-.607	.571	
Std. Error of Kurtosis		1.741	1.063	1.063	1.279	1.334	
Range		1	10	10	4	2	0
Minimum		1	6	13	1	1	1
Maximum		2	16	23	5	3	1
Sum		7	174	282	29	15	3
Percentiles	25	1.00	7.00	14.50	2.00	1.00	1.00
	50	1.00	9.00	16.00	2.00	1.00	1.00
	75	1.25	14.00	18.00	4.00	2.00	1.00

		<i>Frequency Response - NA</i>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	29.4	83.3	83.3
	2	1	5.9	16.7	100.0
	Total	6	35.3	100.0	
Missing	System	11	64.7		
Total		17	100.0		

Frequency Response - SA

	Frequency	Percent	Valid Percent	Cumulative Percent
	6	1	5.9	5.9
	7	5	29.4	35.3
	8	2	11.8	47.1
	9	2	11.8	58.8
Valid	12	1	5.9	64.7
	13	2	11.8	76.5
	15	3	17.6	94.1
	16	1	5.9	100.0
Total	17	100.0	100.0	

Frequency Response - A

	Frequency	Percent	Valid Percent	Cumulative Percent
	13	3	17.6	17.6
	14	1	5.9	23.5
	15	1	5.9	29.4
	16	4	23.5	52.9
Valid	17	3	17.6	70.6
	18	2	11.8	82.4
	19	1	5.9	88.2
	21	1	5.9	94.1
	23	1	5.9	100.0
Total	17	100.0	100.0	

Frequency Response - U

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	11.8	18.2	18.2
	2	4	23.5	36.4	54.5
	3	2	11.8	18.2	72.7
	4	2	11.8	18.2	90.9
	5	1	5.9	9.1	100.0
	Total	11	64.7	100.0	
Missing	System	6	35.3		
Total		17	100.0		

Frequency Response - D

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	35.3	60.0	60.0
	2	3	17.6	30.0	90.0
	3	1	5.9	10.0	100.0
	Total	10	58.8	100.0	
Missing	System	7	41.2		
Total		17	100.0		

Frequency Response - SD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	17.6	100.0	100.0
Missing	System	14	82.4		
Total		17	100.0		

Appendix E: Letter To Participants

MEMORANDUM FOR:
FROM: Stuart, Sandra L.

SUBJECT: Research Survey

I am conducting a doctoral study regarding the new method of training for the AHLTA program at NHCCP. This study will be conducted under the direction of a research committee composed of faculty members at Walden University. I am a staff member of NHCCP currently working as an IT Specialist in the Information Management Department. Permission from NHCCP has been obtained to conduct this study. I am asking that you please complete this survey.

This survey should take no longer than 15 minutes to complete. The survey contains two parts. The first part is a series of questions requiring you to agree/disagree. The second part is a set of open-ended questions for you to offer opinion/thoughts.

You will not sign or include your name to this survey. Please be assured that your responses are anonymous and confidential. If you agree to participate in this study, please complete the survey enclosed in the envelope attached.

Your participation in this study is greatly appreciated. Because the sample size is small, I need your input to make the study successful.

Thank you for your cooperation.

Sandra L. Stuart
NHCCP, IMD

Curriculum Vitae

Sandra Stuart

Education

Walden University, Minneapolis, MN

Current Student, Ed.D. In Education

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Area of Concentration: Higher Education and Adult Learning

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Baker College, Flint, MI

M.B.A. in Information Systems Management

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Thesis: A portfolio compilation of 12 primary papers written throughout the program.

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Craven Community College, New Bern, NC

2002

A.A.S. Honors in Information Systems

Areas of Concentration: Programming, networking

AWARDS

- Junior Contractor of the Quarter – 3rd Quarter

Fall 2005

- Senior Contractor of the Year

2006

Teaching Experience

DeVry University

2008-2011

Adjunct Faculty – “Data Analysis with Spreadsheets w/Lab”

This course focuses on advancing competencies taught in COMP-10 additional business software at the PC level. Using software such as Excel, students develop advanced skills in using personal database and computerized spreadsheets for problem solving, as well as the develop advanced skills in the use of computerized spreadsheets for problem decision-making.

Craven Community College, New Bern, NC

Lecturer – “Web Design for Business”

2003

Delivered Continuing Education class in Web Design for Small Business.

Adjunct Faculty – “Introduction to Computers” 2004-2009

This course introduces computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role, function of computers, and use the computer to solve problems.

Develop syllabus, curriculum design, development, and evaluation. Identification and assessment of appropriate student learning outcomes; as well as moderating in an online classroom environment. Teaching both online and traditional courses.

Adjunct Faculty – “Database Concepts and Applications” Spring 2008

This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms.

Develop syllabus, curriculum design, development, and evaluation. Identification and assessment of appropriate student learning outcomes; as well as moderating in an online classroom environment. This course is delivered in an online environment.

Adjunct Faculty – “College Student Success” 2007-2008

This course introduces the college's physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives.

Two courses, both taught online. Develop syllabus, curriculum design, development, and evaluation. Identification and assessment of appropriate learning outcomes; as well as moderating in an online classroom environment.

Adjunct Faculty – “Basic PC Literacy” Spring 2007

This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills; emphasis on basic computer skills and the basics of the MS

Office applications.

Develop syllabus, curriculum design, development, and evaluation. Identification and assessment of appropriate learning outcomes; as well as moderating in an online classroom environment.

Adjunct Faculty – “Records Management.”

Spring 2006

This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system; emphasis is placed on working with MS Access.

Develop syllabus, curriculum design, development, and evaluation. Identification and assessment of appropriate student learning outcomes; as well as moderating in an online classroom environment. Teaching both online and traditional courses.

Teaching Assistant – to Instructor Robert Hall in “Automotive Systems.”

2000-2002

Collaborated on curriculum and exam development, and graded all written work, including final exam papers. Prepared department for NATEF certification.

Related Experience

Civil Service, Naval Health Clinic, Cherry Point, NC
EHR/EMR System Administrator

2007-Present

Recruited to provide on-site support for users at the Naval Health Clinic, Cherry Point, NC. Collaborate with Information Management staff to conduct & maintain compliance of government regulations and security. Extensive experience in multiple operating environment including Windows servers (using Microsoft Active Directory Users and Computers) and Windows workstations, Microsoft Office Suite(s), security systems, Defense Messaging, Script Logic, VERITAS Backup, Knowledge Presenter (instructional design software).

Designed and administered online training courses for hospital staff including Information Assurance, and annual training modules; also taught sit-down courses in Information Assurance training.

Key Contributions:

- Monitored the client workstations and servers on the local Navy network which included several operating systems (Windows XP, Windows Server 2000/2003) for optimum utilization.
- Managed key systems such as ScriptLogic, Symantec Ghost and Antivirus software, Blackberry server/service administration, and the Audio-care

system.

- Managed and maintained the company data files utilizing Symantec Backup Exec and VERITAS Backup software to ensure data was stored securely.
- Maintained the Windows Server Update Service (WSUS) system to continuously apply security and vulnerability patches to server and workstation devices on the network.
- Performed access control functions utilizing Microsoft Active Directory Users and Computers by creating users, computers, and groups at the appropriate security level required.
- Assist users with policies and procedures for setting up network accounts, and intranet sites. Interacted with customers on a personal level providing exemplary customer service.
- Provided training to new personnel on how to use the CHCS/AHLTA applications. Hands-on experience with the installation, configuration, set-up, operations and support of end-users accessing the Composite Health Care System (CHCS) and AHLTA; including account creation and unlocking accounts, name changes, assignment of menu keys, and general troubleshooting inside the applications for users.
- Received guidance on issues outside my troubleshooting scope with the regional Tier III support and Military Health Systems (MHS) support teams as needed and maintained communication with customer and Technical teams with resolutions.
- A key participant with the development of an online training program to enhance the learning environment with a more streamlined approach to training for users of hospital medical health systems.
- Developed a working knowledge and familiarity with BUMED, SECNAV, DoD, and Naval Hospital policies, instructions, and directives relevant to IT support and compliance; as well as technical manuals for applicable systems and devices throughout the facility.
- Assigned as the department inventory control manager and created a streamlined process by which to dispose of life cycle eligible equipment
- Assist users with policies and procedures for setting up network accounts, and intranet sites. Daily interaction with customers on a personal level to provide exemplary customer service.
- HIPAA Security Officer, as well as Health Record Auditor

Naval Hospital, Cherry Point, NC

System Administrator

2004 - 2007

Recruited to provide on-site support for users at the Halyburton

Naval Hospital, Cherry Point, NC. Collaborate with MID staff to conduct & maintain compliance of government regulations and security. Extensive experience in multiple operating environment including Windows servers (using Active Directory) and Windows workstations, Microsoft Office Suite, security systems, Defense Messaging, Script Logic, VERITAS Backup, Knowledge Presenter (instructional design software).

Designed and administered online training courses for hospital staff including Information Assurance, and annual training modules; also taught sit-down courses in Information Assurance training.

Key Contributions:

- Daily monitoring of servers and workstations in the Windows environments.
- Managed key systems such as ScriptLogic, Symantec Ghost and Antivirus software, Blackberry server/service administration, VERITAS Backups, Audio-care system, and WSUS updating system.
- Managed and maintained systems using Active Directory environment.
- Escalated issues as needed and maintained communication with customer and Technical teams.
- Assist users with policies and procedures for setting up network accounts, and intranet sites. Interacted with customers on a personal level providing exemplary customer service.
- Assisted with the training of new personnel on how to use the CHCS/AHLTA applications. Hands-on experience with the installation, configuration, set-up, operations and support of end-users accessing the Composite Health Care System and AHLTA; including the creation of accounts, name changes, assigning of menu keys, unlocking accounts, and general troubleshooting inside the applications.
- Assisted with the development of an online training program.
- Acquired knowledge and familiarity with BUMED, SECNAV, DoD, and Naval Hospital policies, instructions, and directives relevant to IT support and compliance; as well as technical manuals for pertinent systems.
- Assigned as the department equipment manager, created a

streamlined process by which to dispose of old/outdated equipment.

Always Online, New Bern, NC

Office Manager/Lead Technician/Asst. Web Master

2000 - 2004

Provided technical support for approximately 3500+ customers throughout the U.S. Troubleshooting hardware, software and connectivity issues for a mixed Windows 95/98/2000/XP/NT environment. Additionally supported Webmaster with Windows NT/2000/2003 server configurations and troubleshooting.

Key Contributions:

- Achieved highest levels of productivity, handled 100's of calls per week. Earned solid reputation for resolving complex issues and providing exceptional customer service.
- Independently designed new staffing schedule to improve nighttime coverage and reduce cost of overtime. Initiated technical support software system and promoted to additional responsibilities as Technical Advisor providing expert guidance to Help Desk staff.
- Coordinated the scheduling of staff holidays and the implementation of new sales targets.
- Responsible for opening and closing the store on a day-to-day basis, as well as the reconciliation of sales transactions and the balancing of each day's deposits. Provided direction for the staff within the office, completing performance assessments, providing constructive feedback and resolving tensions. Oversaw the implementation of the disciplinary procedures.
- Participated in the recruitment of new employees at the initial interview stage, reference checking and later at hire.

Professional Training & Development

Lean Six Sigma

Yellow Belt

2012

CompTia Certification

Healthcare IT Certification

2012

Microsoft Certification

Microsoft Certified Professional (MCP)

2010

CompTia Certification

Security+ Certification

2008

Craven Community College, New Bern, NC

Helping Students Succeed: Broad Strategies in Student Retention

2007

DeVry University

2007

Online Instructor Training (eCollege)

Craven Community College, New Bern, NC

2006

Developing & Enhancing On-line Teaching (Blackboard)

Randolph Community College, Asheboro, NC

2004

Online Instructor Training (UCompass Educator)

Memberships

- North Carolina Computer Instructors Association
- American Association of Women in Community Colleges
- Phi Theta Kappa Honor Society
- HTML Writers Guild
- Web Design & Developers Association
- Secret Security Clearance