ASSESSING NURSE AND MEDICAL ASSISTANT PERCEIVED NEEDS PRIOR TO IMPLEMENTATION OF EXPANDED WEB-BASED TRAINING IN PHYSICIAN CLINICS

A Dissertation

by

PAMELA JEAN CLINTON HOPKINS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2010

Major Subject: Educational Human Resource Development

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ABSTRACT

Assessing Nurse and Medical Assistant Perceived Needs Prior to Implementation of Expanded Web-based Training in Physician Clinics. (May 2010)

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The purpose of this study was to assess nurse and medical assistant perceived needs prior to implementing an expended web-based training (WBT) program in physician clinics. This case study was conducted with a mixed-data approach using quantitative and descriptive survey data collection. A total of 239 nurses and medical assistants within the Trinity Mother Frances Hospitals and Clinics dispersed throughout east, north east and north central Texas participated.

The participants shared knowledge and behaviors common to the culture of the organization. When new and existing clinical staff traveled to the distant primary campus for training, the operations of the clinic practice was disrupted. Employees are not hired in groups comprising convenient training class sizes, and mandatory training often cannot wait until a class is of a cost effective size.

The data were collected using a 50-item survey evaluating computer access, computer usage, computer knowledge (satisfaction, frustration, and motivation to transfer learning), and WBT preference (employee's support and employee's perception of supervisor's support). Quantitative data were collected in the form of a dichotomous yes

or no and ordinal data from two Likert type scales. Descriptive survey data was collected using open-ended questions emphasizing perceived strengths, weaknesses, opportunities and threats (SWOT) of WBT. Demographic data were collected to facilitate comparison of perspectives based on demographic information gathered.

To support reliability and validity of the Clinic WBT Needs Assessment (CWBTNA), exploratory factor analysis, Cronbach's coefficient alpha, and correlations were utilized to validate the survey instrument. Chi-squares, ANOVAs, and *t-tests* were conducted. Following the Bonferroni control for Type I error rate (α), four *t*-test, two chi-squares, and three ANOVAs demonstrated significance. Descriptive responses generated from descriptive survey items were transcribed into an Excel© spreadsheet which allowed coding and sorting.

Themes consistent with order sets of the quantitative survey emerged. Among additional findings, statistical data demonstrated that staff perceived they transferred learning into the work place best when they perceived greater supervisor support. All findings are detailed in the document.

DEDICATION

This dissertation is dedicated to

Trinity Mother Frances Hospitals and Clinics' Clinic Nurses and Medical Assistants

my husband and my parents

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I thank David, my husband, who is the love of my life. Without his encouragement early in our marriage to further my education I doubt that I would have ever attempted this journey. After major cancer surgery, I gave up continuing my education to live life to its fullest. Although the surgery was a success, I focused on cancer as a death diagnosis. One day David asked me a simple question "What are you going to do if you live?" Big thanks to David, my hero, who inspired me to focus on life rather than death and who persevered through endless hours of challenges throughout this journey. David gave me continuous encouragement to endure. This is a journey we began together and it is now our accomplishment to share forever.

I sincerely thank my wonderful parents, Finis and Earline Clinton. Mom and Dad, along with my extended family of relatives, raised me such that I found a strong faith in God in my early childhood. Their belief in me gave me strength over the years to persevere against many obstacles. Dad and Mom continually encouraged me and always exhibited pride in my accomplishments. I am extremely grateful for their support.

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now hold as a strong patient advocate and an advocate for the population for which I educate and serve – nurses, medical assistants, and other allied health professionals.

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It is my sincere belief that from my first grade teacher to my last professor each has contributed to forming me as an individual. From my first employer to my present each has contributed to allowing me to make the next advance and mold me into the person I am now. Each Sunday school teacher, pastor and individual who contributed to my spiritual upbringing, I thank you for your contribution to molding the ethics and morals of my being. I thank each one for their belief in me and giving me the opportunity for growth and wisdom obtained through my relationship with them. Last but by no means least, I thank my God for placing all these individuals in my life, guiding my way, and giving me strength and health to persevere.

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NOMENCLATURE

AAMA	American Association of Medical Assistants
ANA	American Nurses Association
ANOVA	One Way Analysis of Variance
CBI	Computer Based Instruction
CCF	Cleveland Clinic Foundation
CWBTNA	Clinic Web-based Training Needs Assessment
EFA	Exploratory Factor Analysis
HIPAA	Health Insurance Portability and Accountability Act
HRD	Human Resource Development
IL	Instructor Lead
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
LVN	Licensed Vocational Nurse
MA	Unlicensed Medical Assistant
M	Median
n	Sample Size
N	Population
RN	Registered Nurse
SWOT	Strengths, Weaknesses, Opportunities, Threats
TMF	Trinity Mother Frances Hospitals and Clinics
Vets	Veterans
WBT	Web-based Training

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CHAPTER I

INTRODUCTION

The dynamic changes in the health care industry and the technology utilized for training and development of employees in the work place continues to evolve rapidly. No longer is hospital based training and development the single focus of health care organizations. The primary focus of training and development established for staff located on a sole campus has given way to the innovative needs of a new health care structure. Hospitals and physician office practices (clinics) have merged creating system-wide, complex and innovative health care organizations. Coupled with the challenges of the evolution of this new breed of health care organization, the demands on licensed vocational nurses (LVNs) and registered nurses (RNs) have increased as the nursing shortage continues and the patient population ages. In clinics the unlicensed medical assistant (MA) is a vital member of the health care team (American Association of Medical Assistants, 2008). The utilization of the medical assistant reduces the strain on physicians, administration and licensed staff created by the nursing shortage, but at the same time it creates another discipline requiring training and development.

Many nurses and medical assistants employed in these evolving health care organizations are working in the clinics which are frequently located off of the primary campus of the health care organization. The nurses and medical assistants along with the physicians and mid-level practitioners (advance practice nurses and licensed physician

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This dissertation follows the style of *The Journal of Continuing Education in Nursing*.

assistants) struggle to meet the needs of the growing volume of patients. These nurses and medical assistants provide support staff for the physicians and mid-level practitioners in the clinics and at the same time struggle to manage their own education and training. When the nurses and medical assistants travel to the distant health care organization to attend education they face many challenges: managing work responsibilities at the clinics, families, child care, pet care, and transportation.

The dynamics of these emerging multiple hospital and clinic health care organizations spawn the need for knowledge management, the resourcefulness to maintain awareness of the existing corporate culture and the talent to increase organizational capacity while increasing individual performance (Krempl & Pace, 2001). "Corporations need to involve increasingly decentralized employees, business partners, and customers dispersed around the globe in workforce training and education" (Luskin, 2002, p. 17). According to data extracted March 5, 2008, (Bureau of Labor Statistics United States Department of Labor, 2006), Texas employs approximately 157,850 registered nurses, 65,450 licensed vocational nurses and 34,800 unlicensed medical assistants.

Walker, Harrington, and Cole (2006) wrote "If the educational programs are conducted away from the facility, costs include travel and wages for both the nurse and a replacement on the unit" (p. 144). Disruptions to the physicians, mid-level practitioners, and patients are evident when the nurses and medical assistants must leave the clinic and travel to the primary campus of the health care organization for training. Luskin (2002)

wrote “Employees need access to learning solutions where they are and on the schedule that best suits them” (p. 17).

The Cleveland Clinic Foundation (CCF) and the Division of Education at CCF partnered and created an online curriculum for nursing competencies (Dumpe, Kanyok, and Hill, 2007). They birthed the online program with the necessity to educate substantial numbers of employees on the Health Insurance Portability and Accountability Act (HIPAA). Other regulatory agency mandates followed online: environment of care, patient safety, and domestic violence to list a few. Finally, many of the nursing skill mandates were modified to meet this new method of online delivery. The Cleveland Clinic cited easier access and increased flexibility helped to keep competent, safe nurses at the bedside and eliminate overhead cost of education (Dumpe et al., p. 185).

Smith (2005) cited a national survey of 607 nursing staff development educators which found less than one-third used web-based training (WBT). Insufficient funding and lack of knowledge were cited as the major barriers to utilization. Smith’s study demonstrated a potential savings with WBT of 50-70% for per-diem hospital nurses over instructor facilitated training and a reduction in hours of training by 14.4 for the same training program. Phillips (2006) developed an online study for hospital nurse preceptor’s that increased the consistency of content and resulted in a reduction in the delivery cost.

Identifying the Problem

Today human resource development (HRD) of the employee is facing technology growth resulting in challenges. Swanson and Holton (2001) stated “HRD is a process for delivering and unleashing human expertise through organization development and

personnel training and development for the purpose of improving performance" (p. 4). The nurses and medical assistants located at multiple clinics, off the primary campus of the health care organization, created a challenge in personnel training and development for delivering new employee orientation, clinic orientation, mandatory ongoing system education and clinic specific training updates. Nursing staff development educators found insufficient time and resources to physically take the training to the multiple clinics including many clinics of which were in distant locations. The training and development challenges faced were unlike what had been experienced in the traditional hospital system where staff was primarily in one centralized location on the same campus of the primary health care organization. One of the many challenges was the motivation to transfer learning regardless of the method of training delivery. Egan (2008) wrote, "Despite its relative importance for HRD, motivation to transfer learning is understudied" (p. 305). Here a learning environment had to be created which would encourage the participant to transfer the learned knowledge into the work environment.

New and innovative methods of training delivery were assessed. These educational formats had to reduce costs and barriers to training and development of nurses and medical assistants located in the clinics off the primary campus of the health care organization. This case study focuses on the assessment of WBT for evaluating the potential utilization of internet and intranet access for WBT for clinic education. WBT was paramount as it provided the vehicle to reach the nurses and medical assistants in both the distant and local clinics, allowed for uniformity of training across the clinics in the health care system, and provided the potential to reduce system costs for training.

Limited training had been facilitated via a web-based resource the organization contracted to provide staff free access to continuing education required by various governing boards. This resource offered an option for site-produced modules to be placed on their web with only employees in the designated health care organization having access. As the health care organization embarked on the expansion of WBT in these clinics a primary focus was placed on the perceived needs of employees. The employee needs had to be met to cultivate a successful transition to an expanded WBT program. The health care organization employed slightly over 4,000 employees. Due to this large number of employees in the health care organization, this study focused on the perceived needs of two disciplines in the clinics throughout the organization: nurses and medical assistants.

Purpose of the Study

The purpose of the study was to assess what were the differences in the perception of nurses and medical assistants perceived needs prior to implementing expanded WBT in physician clinics in the health care system. Prior observation throughout the clinics had noted inconsistent verbal response regarding computer access for WBT; therefore, perceived computer access needed evaluation to determine access barriers. Benson and Dundis (2003) wrote that with the escalating role of technology the employees transitioning to WBT or e-learning merited evaluation on the second level of Maslow's hierarchy of needs motivational model which consisted of security and safety. Egan's study (2008) on motivation to transfer learning in health care organizations demonstrated "Supportive and innovative subcultures have clear positive relationships in the motivation

to transfer learning" (p. 299). Recognizing safety, security and motivation to transfer learning were key factors in the success of implementing an expanded WBT program multiple topics of concern were assessed. The perceptions assessed were computer access; computer usage; computer knowledge which included satisfaction, frustration, and motivation to transfer learning; and WBT preference which included both employee's support and employee's perception of supervisor support for WBT. The purpose of the case study was to obtain data on a variety of topics from employees to determine the perceived needs of nurses and medical assistants prior to expanding WBT.

Significance of the Study

Research on staff's perception toward implementation of WBT in physician clinics in integrated health care systems is understudied. A dearth of studies assessing clinic education, including gaps evaluating the utilization of WBT and development needs of nurses and medical assistants in the clinic environment, existed. Primarily studies relating to WBT, computer assisted training, or other e-learning opportunities had been conducted in educational settings rather than health care organizations. Lowe and Holton (2005) wrote "Much of the research that has been conducted has focused on computer-based implementation in educational settings, not with adult learners who would be found in work settings" (p. 160). Brown (2005) explained "Organizations and employees would benefit from knowing how to support employees in their efforts to use technology as a learning tool on the job" (p. 478). The gaps and recommendations for studies supported a significant need for research focusing on employees in work place environments. This case study contributes to the literature by studying the perception of

adult learners in work place settings through the assessment of the perception of clinic nurses and medical assistants toward WBT technology in physician clinics.

Research Questions

WBT is a growing method of training delivery in health care organizations seeking alternative options to instructor lead (IL) delivery of training and development. Luskin (2002) stated "E-learning improves flexibility and access regardless of time, place or place of learning" (p. 91). Limited technology modalities were available to assist the staff development educators in the professional delivery of efficient and effective tailored instruction. The desire to implement a successful expanded WBT delivery program challenged administrators and staff development educators to conduct this needs assessment. Nurse and medical assistant perceptions of computer access, computer usage, computer knowledge, and preference for WBT, along with the strengths, weaknesses, opportunities and threats perceived by the staff were evaluated.

The research questions were:

1. What are the differences in the nurse and medical assistant perceptions of access to computers to accommodate WBT?
2. What are the differences in the nurse and medical assistant perceptions of computer usage?
3. What are the differences in the nurse and medical assistant perceptions of their computer knowledge?

4. What are the differences in the nurse and medical assistant preferences to have WBT rather than commute to the primary campus of the health care organization for training?
5. What are the differences in the nurse and medical assistant perceptions of supervisor support of WBT?
6. What are the differences in gender and race as related to computer usage, computer knowledge, and preference for WBT?
7. What are the differences in generations as related to the perception of computer usage, computer knowledge, and preference for WBT?
8. What individual and environmental factors influence nurse and medical assistant motivation to transfer learning?
    a. What are the relationships between knowledge and perceptions about computers (including satisfaction with computer competence, basic computer knowledge, and frustration with computers at work) and motivation to transfer learning in a WBT environment?
    b. What are the relationships between perceived support for WBT and motivation to transfer learning?
9. What perceived strengths, weaknesses, opportunities, and threats (SWOT) regarding a WBT program are reported by nurses and medical assistants?

Assumptions

In this research project, the following were assumed:

1. Clinic nurses and medical assistants had preconceived perceptions of WBT.

2. Reliability and validity was supported by the honesty and integrity of the nurses and medical assistants completing the needs assessment.
3. The sample was limited to nurses and medical assistants working in clinics in one health care organization in Texas.
4. Reliability and validity was supported by the professional integrity of the researcher.
5. To prevent human subject harm, the researcher preserved the confidentiality of the study participants as relates to the data collected.

Limitations of the Study

This research embarked on a new frontier full of challenges for WBT in clinics merged with a historically hospital based health care organization. Not much research was found published on WBT for new employee orientation, clinic orientation, or mandatory training and development in the clinic environment. Most of the literature found applied to research studies conducted in the field of academia rather than work place settings. Therefore, the clinic work place environment was an area that warranted study.

The survey population consisted of a combination of 285 nurses and medical assistants in clinics in one health care organization in Texas: 140 Licensed Vocational Nurses, 45 Registered Nurses, and 100 Unlicensed Medical Assistants.

Delimitations

This study was limited to nurses and medical assistants working in clinics in Texas. These clinics were part of one faith-based health care organization representing

some 36 specialties and over 50 clinics serving north central, east and northeast Texas. All the clinics had full accreditation by The Joint Commission (2007).

Summary

This case study contributes to the literature as it focused on the perception of the adult learners in work place settings. The setting was physician clinics in a health care organization. The accessible population studied was decentralized nurses and medical assistants employed in physician clinics. Technology utilized for training and development of the employees in the work place was in flux and the dynamics of health care had found it necessary to meet these challenges. Training on one health care campus for this organization, as well as, for many organizations had expanded to face the challenges of meeting training needs globally.

The purpose of the study was to assess the perception of nurses and medical assistants perceived needs prior to implementing expanded WBT in physician clinics in the health care system. It was found that gaps in the literature evaluating the utilization of WBT and development existed as related to the clinic environment. Research questions, assumptions, limitations and delimitations of the study were identified.

CHAPTER II

REVIEW OF THE LITERATURE

The focus of this case study was to assess the nurses and medical assistants perceived needs prior to implementation of expanded WBT in physician clinics. This review of literature was conducted to identify previous studies conducted in physician clinics assessing employee responses to training through WBT. This literature review included topics of interest for the major constructs (order set primary headings) in the 50-item survey utilized in this case study including: demographics; computer access; computer usage; computer knowledge as relates to satisfaction, frustration and motivation to transfer learning; WBT preferences relating to employee and supervisor support; and SWOT analysis. Advantages, challenges and andragogy as related to WBT were additionally searched.

Lewis, Davis, Jenkins, and Tait (2005) described how nursing history showed a progression from WBT text-only packages to the combination in later years of text and graphics. “One of the first reported uses of computers for teaching nurses was developed by Bitzer and Boudreaux in 1969 followed by greater usage in the early 1980s” (Lewis et al., p. 587). Lewis et al. described a third phase of modern day WBT that includes quality graphics, animation and video incorporated with a high degree of interactivity. Further evaluation of WBT in nursing recognized the necessity to incorporate core knowledge into clinical scenarios, reasoning and problem-solving, along with communication and interpersonal skills (Lewis, et al.).

Dobbs (2006) wrote "With the explosion of the Internet and e-learning as a distribution method to deliver training, new automated instructional development tools can make the development of the training program more efficient" (p. 501). Dobbs listed the following organizations among those which utilized e-learning opportunities for their employees: AT&T Global Services for some 3,000 sales employees, and Merrill Lynch who combined state-of-the art e-learning with classroom training for more than 22,000 employees.

Organizational Advantages to Implementing WBT

In this era of nursing shortages, new innovative organizational structures, e-learning, distance learning and web-based training, the challenges to organizational training have increased. WBT has been referred to by many names: e-learning, computer based instruction, computer-based learning, distance education, internet learning, on-line training, etc. Computer based instruction (CBI) is described as providing numerous positive benefits to organizations some of which include: consistency of content, easy access to distant locations, eliminated cost related to travel, standardized testing, method for tracking learner's progress, flexibility to the learner, and decreased facilitation time (Lowe & Holton, 2005). Luskin (2002) emphasized the importance of internet learning in pre-K and the potential impact for work place usage throughout the adult life. Lowe and Holton (2005) proposed a theory of effective CBI for adults touting:

> CBI generally provides consistency of content delivery, more readily provides training to remote locations, eliminates costs associated with employees' travel, provides a means of tracking learners' progress, provides standardized testing, offers learner flexibility in controlling and pacing learning, provides for diverse learning needs, provides opportunities for practice through simulation, provides greater retention, and reduces the instructional time (p. 160-161).

These authors further explained much of the research has been conducted on CBI in education not in the work place. The less self-directed the learner in the work place the greater the external support such as managerial encouragement is needed.

Nisar (2004) defined e-learning (WBT) as "a relatively new form of training delivery and as growing in popularity" (p. 79) and encouraged the organization to look both at the advantages and disadvantages as appropriate to the organization's strategic objectives. He emphasized e-learning (WBT) in remote sites as it could reduce training cost by reducing travel and time away from the work environment. Nisar also acknowledged employee fear of technology may potentially be a disadvantage, but WBT can be potentiated by complementary training opportunities.

Southernwood (2008) wrote from a different perspective by approaching WBT from the perspective of collaboration, learning through practice and encouraging the participant to search out information to expand their knowledge. She explained this approach was particularly suited to health care and could be used to reach participants that otherwise might not have an opportunity for training or further education. Where many viewed WBT as threatening to participants, Southernwood described WBT to be less threatening to participants returning to the formal education environment, and as a more flexible learning alternative with the cost-effective advantage of expanding organizational development.

The Cleveland Clinic Foundation (CCF) and the Division of Education at CCF birthed an online program for nursing competencies including: HIPAA, environment of care, patient safety, domestic violence and other regulatory mandatories (Dumpe et al.,

2007, p. 185). They found online training reduced overhead cost for education and increased the competency of staff nurses at the bedside. Walker, Harrington, and Cole (2006) and Luskin (2002) wrote that training which was available to employees in their work setting and at convenient times reduced the cost for training and eliminated the necessity for a replacement. Phillips (2006) demonstrated a reduction in delivery cost and an increase in consistency of content by development of an online study for hospital nurse preceptors.

Williams, Paprock, and Covington (1999) wrote, "Distance learning is one of the most rapidly growing aspects of education and training in the world today" (p. 14). They further discussed the simplicity in preparation of classroom handouts and overheads and easy access to the instructor by students. They recognized along with the rapid growth and simplicity in preparation came the challenges of resource deficits which included skilled personnel, equipment, materials, delivery vehicle and absence of instructor on site.

Organizational Challenges to Implementing WBT

Allen (2006) described organizational challenges relating to training today as "The workforce of the 21st century is in a continual state of flux (p. 430). He described the original ADDIE (analysis, design, develop, implement, and evaluate) system model and further explained that today's models must accommodate the technological advances of computers, video and interactive systems. Allen recognized that many trainers were less than minimally prepared to implement ADDIE in the work place. He expressed the need to prepare professionals who facilitate organizational training with the knowledge

and skills to understand this training module and be able to apply it in the workforce of the 21st century.

Kaupins (2002) cited Gavin (2001) "At least 74% of companies with 100 or more employees have used the Internet, and 87% have used CD-Roms in training" (p. 319). Kaupins evaluated instructor ratings of WBT and found web courses supporting greater instructor interaction with participants received higher ratings than did WBT with decreased interaction with the instructor. "Computer-based training received higher ratings for knowledge acquisition and knowledge retention but low ratings for interpersonal skills development" (Kaupins, p. 322). Kaupins summarized his findings were consistent with andragogy theory in that adult learners support participative training methods. Dooley, Lindner, and Dooley (2005) wrote "Instructors and trainers struggle with the notion of quality and a belief often expressed that distance education is not as good as face-to-face instruction. That simply is not true. Teaching at a distance does require a set of unique competencies in order to create the social presence and interaction that is necessary for students to feel actively engaged in the learning process" (p. 12).

Macpherson, Elliot, Harris and Homan (2004) recognized academic literatures absence of focus toward the corporate environment. Their study focused on the corporate environment's use of e-learning opportunities "to deliver consistent learning experiences, independent of time and place to a geographically dispersed workforce and those working non-standard hours" (p. 297). Macpherson et al. consistently found progress slower than expected and barriers included time, cost, and technological capability. The medium delivery selection was crucial to the success of the program. Haudan and Berens (2007)

sums it up in their statement "If your business isn't considering implementing high-tech training within two years, you'll definitely be at a disadvantage" (p. 39).

Andragogy

Andragogy was included in the paradigm as the study focused on the perception of adult learners toward web-based training; hence, the training would exist at a distance from the staff educator. Back in the early 1980s, trainers spoke of Malcolm Knowles' emerging andragogy model of education as a brave new world panacea. Knowles described andragogy as an alternative to pedagogy. Pedagogy postulated it was the role of the teacher to assume all responsibility for what, how and when learning would occur and a follow up assessment to determine if learning occurred. The students in the pedagogy learning model were purely passive. The andragogy model of education was developed from research based knowledge reflecting adult learning preferences (Knowles, 1980). The model was founded on the assumptions that the adult learner wishes to be more independent, uses life experiences from which to learn, and must grow to achieve self-fulfillment. Knowles (1980) placed the responsibility of the determination of the appropriate model to utilize upon the trainer, but he cautioned "The pedagogy model insists the learner to remain dependent on the teacher; andragogy…will do everything possible to help learners take increasing responsibility for their own learning…It is a system of ideas that can improve the quality of learning" (p. 49). Swanson and Holton (2001) described andragogy as "a core adult learning model that has played a central role in adult learning within Human Resource Development (HRD)" (p. 158).

Zmeyov (1998) described education as a service of supply and demand becoming more diversified to accommodate the changes necessary to meet the lifelong learning training needs of adults. The necessity to provide training, knowledge and skills applicable to adult learners has grown more evident. Zmeyov described the growing need for a change in adult education in Russia and throughout other countries as well. "Greek a*ndros*—adult man, and *ago—I* guide, lead to the formation of the term andragogy later defined by Knowles as the art and science of helping adults learn" (Zmeyov, p. 104-105). Zmeyov postulated that philosophical and psychological theories of humanistic psychology such as Maslow and Rogers contributed much to the origins and development of andragogy.

Mixed Data Approach

This was a case study which used mixed data consisting of quantitative and descriptive paradigms. Ivankova, Creswell, and Stick (2006) wrote "More social and health science researchers have been using a mixed-methods design for their studies" (p. 3). Tashakkori and Teddlie (2003) and Creswell (2005) as cited by Ivankova, et al., defined mixed-methods as being "a procedure for collecting, analyzing, and mixing or integrating data at some stage of the research process" (p. 3). Ivankova et al. cited Green, Caracelli, and Graham (1989), Miles and Huberman (1994), Green and Caraceli (1997) and Tashakkori and Teddlie (1998) where they explained using mixed data "creates a more robust analysis, taking advantage of the strengths of each" (p.3). Creswell, Fetters, and Ivankova (2004) stated "Mixed methods or multimethod research …indicates that data will be integrated, related, or mixed at some stage of the research process" (p. 7).

Bargal (2006) emphasized Lewin's model which focused on the triangle of the researcher, practitioner and client acting together in a collaborative process. This case study focused on the triangle of the researcher as the practitioner acting collaboratively with the client (participant) to collect descriptive and quantitative data on the participant's perceptions of WBT.

Overview of CWBTNA

The Clinic Web-based Training Needs Assessment (CWBTNA) was a semi-structured survey instrument consisting of both quantitative and descriptive components. The quantitative components consisted of simple yes/no dichotomous and Likert type scale responses. The descriptive components consisted of short narrative questions seeking the participant's answers to open-ended questions. The following provides a literature review of the survey subset headings.

Demographics

Nurses and Medical Assistants

Expected employment for nurses and medical assistants show outstanding growth opportunities based on 2006-2016 estimations projected by the Bureau of Labor Statistics (2006). It is projected that more and more specialty procedures will be moved to physician practices or outpatient procedure clinics thus creating increased opportunities for health care professionals in these practices. As a result of these anticipated growth patterns, a growing demand for education of staff in these practices will follow.

Registered nurses are the largest health care occupation. Physician offices (clinics) show a projected 39% increase in employment versus an estimated 22% in

public and private general medical and surgical hospitals. Registered nurses anticipate a 23% growth that exceeds all other occupations from 2006 to 2016 (Bureau of Labor Statistics, 2009). Licensed Vocational Nurses are projected to grow 14% between 2006 and 2016. Medical Assistant job opportunities are anticipated to grow faster than average occupations from 2006-2016 with a projected growth rate of 35%.

Generations

For purposes of this case study, the age groups analyzed were Veterans, Baby Boomers, Xers and Nexters. Zemke, Raines & Filipczak (2000) described the Veterans as "The generation whose vision and hard work created the United States as we know it today—a bold, powerful, prosperous, vital, modern democracy with all of its inherent challenges and paradoxes" (p. 29). Core values recognized in the era of Veterans include: dedication/sacrifice, hard work, respect for authority, duty before pleasure and honor. Zemke et al. described the work ethics of the Veterans as stable, detail oriented, thorough, loyal and hard working. They were described as resistant to ambiguity and change and uncomfortable with technology. The Veterans are the generation by which all others since have been measured.

The Baby Boomers, also referenced as the fertility boom, are the largest generation and were birthed by the Veterans. According to Zemke et al., the miracles of post war medicine allowed greater percentages of the Baby Boomers to survive birth and babyhood and these children were cherished and loved. Core values recognized in the era of the Baby Boomers include: optimism, team orientation, personal gratification, and a focus on health and wellness. They redefined roles and promoted equality, left

unfulfilling relationships and sought immediate gratification. Zemke et al. described the work ethics of the Baby Boomers as service oriented, driven, going the extra mile, eager to please and good team players. They were described as not naturally budgeted minded, peer driven, sensitive to feedback, self-centered and judgmental of those who see things differently.

The Xers, according to Zemke et al., "Might well have been called Generation I for invisible or L for lost—never really noticed, growing up in the shadow of the Boomers" (p. 93). Core values recognized in the era of the Xers include: diversity, globally thinking, balance, technoliteracy, fun, self-reliance and pragmatism. Zemke et al. described the work ethics of the Xers as adaptable, technoliterate, independent, creative and unintimidated by authority with a view that the job is just a job. They are further described as impatient, cynical and poor with people skills. Zemke et al. described this generation as "The generation that learned that work is no guarantee of survival, that corporations can throw you out of your job without warning, logic, or even an apology, and that entry-level work is often mindless, dull, and exhausting" (p. 111). They further describe this generation as moldable with the right hours, environment and supervision.

The Nexters, also referred to as Generation Y, Millennials, and Echo boomers, have grown up in the digital age—the Internet. Core values recognized in the Nexters include: optimism, civic duty, confidence, achievement, sociability, morality, and diversity. Zemke et al. described the work ethics of the Nexters as similar to the Veterans: belief in collective action, optimistic about the future, trust in authority, will to get things done, a heroic spirit, ready to sacrifice personal pleasure for the collective

good, team driven and technological savvy. This generation could turn the tides back to the great Veterans generation which built the nation we live.

Gender

Thomas and Larke (1989) wrote "Differential sex socialization coupled with differences in educational and occupational opportunities was the major factors accounting for male-female differences in career orientations and career choices" (p. 283). Smith (1981) and Epstein (1970) as cited by Thomas and Larke, viewed that females had tendencies to select careers accepted by society which were historically dominated by females. The demographic gender section solicited a simple selection of either male or female thus giving an opportunity to analyze the percentage of males versus females making up the sample in the study.

Race

In 2003, the Bureau of Labor Statistics data showed that minorities made up about 21% of registered nurses (Lien, 2004). The National Association of Hispanic Nurses wrote Hispanic nurses in America make up approximately 1.7% of the nursing population (http://www.thehispanicnurses.org). Samson (2004) wrote that "Based on the 2000 US Census Data the percent of RN population consisted of the following: White (86.6%), Non-Hispanic Black (4.9%), Asian (3.5%), Hispanic, any race (2%), Native American (0.5%) and nonresident aliens (2.5%) making up the remainder percentage" (p. 32).

Computer Access, Usage, Knowledge, and Training Preference

Among other resources, the literature review included a review of various instruments from external resources to assist in construction of the CWBTNA question

order sets. Phillips (2006) explained "The staff development educator will need to assess learners for readiness for online learning, computer proficiency, and attitudes toward online learning" (p. 154). Phillips additionally cited Web site resources from the University of San Diego (http://onlinelearning) and the Indiana University (http://www.nursing.iupui.edu/About/default.asp).

The University of San Diego's (2007) instrument *The Online Learning.net Self-Assessment Quiz*™ consisted of a four part survey with order sets designed to assist the student in determining if he/she would do well in online learning. The Indiana University's Nursing Department (2007) provided a review of the *Readiness Index for Learning Online (RILO)*. This instrument consisted of a 20 question on line survey developed to assist students in determining if online coursework was right for them. The University of Thailand College of Internet Distance Education (2007) developed *The Mobile Learning Assessment Survey*. This instrument took a mildly different approach as it used order sets to assess the learner's utilization of a mobile device for learning. Order sets in three Technology Surveys utilized by the Texas Center for Educational Research in grant studies for the No Child Left Behind, were reviewed (Cowell, Hopkins, Jorden, Dobbs, and Allen, 2005). These included: Student Technology Survey, Principal Technology Survey, and Teacher Technology Survey.

Hawkins' (2001) research was reviewed which documented order sets used in the development of a training survey to quantitatively assess the Intranet and telecommunication technology training needs of those in the security assistance community. Vodanovich and Piotrowski (2001) implemented an Internet study using

order sets to "determine the attitudes, usage patterns, and perceived drawbacks of psychology faculty regarding Web-based instruction." Bernard, Brauer, Abrami and Surkes (2004) utilized order sets in a 38-item questionnaire for predicting online learning achievement. As demonstrated in the literature combining of order sets in a survey instrument is a common process for collection of data in WBT analysis.

Computer Access

The literature supported the necessity for the organization to provide time and space for WBT to occur. Suggestions included a wide range of options from elaborate learning centers to education of supervisors to the necessity of employee protected time for learning to occur (Brown, 2005). Brown wrote "Espoused support from supervisors and coworkers may be less critical than actual support in the form of reduced workload or release time" (p. 477).

Phillips (2006) cited Web site resources from the University of San Diego (http://onlinelearning) and the Indiana University (http://www.nursing.iupui.edu/About/default.asp).The University of San Diego's (2007) online instrument assessed access by soliciting a response to the statement: "I have ready access to a computer and, through it, the Internet." The Indiana University Nursing Department (2007) survey question "My access to an Internet-ready computer is: fine, manageable, limited" also addressed the need to assess computer access.

Computer Usage

Fay, Johnon, and Selz (2006) explained the national nursing shortage promoted the utilization of online teaching. Fay et al. described the online nursing education model

"ALINE *(A*ction based, *L*earner centered, *I*nteractive, *N*ursing competency oriented, and *E*valuative) was a pedagogical model developed to aid nursing facility transition from passive to active learning" (p. 65). ALINE promoted active learning thus supporting andragogy which encourages the participant to become more involved and collaborative with the instructor guiding the study. Brown's (2005) study suggested "The greater time employees spent using e-learning, the more their computer-related skill and performance improved, as judged by their supervisors" (p. 476). The University of San Diego's (2007) online instrument assessed usage by soliciting a response to the statement: "I know how to use the computer."

Computer Knowledge

Computer Knowledge, Part 5, consisted of four order sets: Satisfaction with Computer Competence, Frustration with Computers at Work, Basic Computer Knowledge, and Motivation to Transfer Learning. These various order sets were combined under the heading Computer Knowledge to capture a broader perception of the participant's computer knowledge.

Satisfaction

The subset Satisfaction with Computer Competence was included to analyze participant perceptions of how pleased they were with their ability to use the computer in the work place environment. Items addressed level of ability to use a computer, amount of things the participant could do with a computer and overall ability to use the computer. The higher the participant responded on the Likert type scale the greater perceived knowledge.

Frustration or Barriers to Learning

The subset Frustration with Computers at Work was included as a counter balance of participant perceptions of satisfaction. Benson and Dundis (2003) took a look back at Maslow's hierarchy of needs model, developed in the 1940-50s. Benson and Dundis recommended utilizing Maslow's hierarchy to evaluate employee needs and behaviors as related to the work environment and satisfaction of basic needs in the workplace. Douglass and Bevis (1983) described Maslow's hierarchy of needs as "needs people express from birth to death with the degree of importance of each depending on conditions and circumstances" (p. 356). The strongest of Maslow's hierarchy is physiological needs such as oxygen, food, water, shelter, sex, and comfort. These strongest needs are followed by security and safety representing the need to feel free from physical harm, danger and manageable stress.

Benson and Dundis recognized the escalating role of technology and the rapid pace in which the health care industry is changing. They wrote about the fear potential for employees transitioning to computer based or e-learning and gave a new prospective to Maslow's hierarchy of needs motivational model. Their projections anticipated that, by 2006, approximately 60 percent of training would be technology based and that not all employees would welcome this technology driven learning environment. Benson and Dundis placed employee security as relates to WBT or e-learning on the second level of Maslow's hierarchy of needs. As employee training moves to e-learning, staff development educators and administrators find it paramount to determine if the employees are secure on this second level of needs.

McCombs and Vakili (2005) proposed a learner-centered framework for e-learning with a collaborative approach where the participant is a co-learner and partner with teachers and peers. They further expressed a concern for learner resistance to technology as a challenge that must be overcome. They explained one method to overcoming the challenge is the establishment of a safe and supportive learning environment.

The Readiness Index for Learning Online (RILO) consisted of a 20 question online survey. This instrument was developed to assist students in determining if online coursework was right for them. A question addressing potential frustration included: "Around computers, I feel: Confident, Ok, Uncomfortable" (Indiana University Nursing Department, 2007).

Basic Computer Knowledge

The subset Basic Computer Knowledge was a culmination of line items assessing the perception of the participant's ability to use a computer. The Teacher Technology Survey was reviewed and several line items under the subset header S*tudents in my class…*were found favorable for participants in this study (Texas Center for Educational Research, 2003). Among these line items were "Use computer applications such as word processing, spreadsheets, etc.; Create Power Point presentations; and Use Internet for research" (p.2). In the review of University of San Diego's (2007) online instrument, the line item "Typing is not an overwhelming ordeal for me" supported the need to determine the perception of the participant's basic knowledge.

Several questions reviewed in the Indiana University's Nursing Department (2007) Readiness Index for Learning Online (RILO) were found consistent with data desired to assess as basic computer knowledge in this study. These included:

- I use email: daily, periodically, rarely
- I know that Netscape and Internet Explorer are examples of: web browsers, word processing applications, search engines
- When researching, I: frequently research online, sometimes research online, avoid doing online research

Motivation to Learn

The final subset included under Computer Knowledge was Motivation to Transfer Learning. This subset was an attempt to capture the participant's perception of applying learned knowledge to the work environment. Egan explained:

> Despite its relative importance for HRD, motivation to transfer is understudied. In particular, the influence of environmental factors on motivation to transfer and the framing of motivation to transfer beyond specified training contexts to training transfer on-the-job and informal learning have been infrequent" (2004, p. 305).

The intersection between technology and employee motivation has clear implications for employee's motivation to learn and motivation to transfer learning (Egan, 2004). Without addressing the needs of employees and understanding the relationship to their motivation to use and apply learning, organizations are likely to waste valuable resources without experiencing the intended gains from training. Therefore, understanding factors that influence employee's motivation regarding training, including technology-based training, is essential for HRD (Egan, 2004). Brown (2005) recommended caution when utilizing incentives to promote motivation to learning suggesting these incentives may be perceived as controlling or may encourage cheating. Instead he suggested methods to promote recognition of WBT worth.

WBT Preference

Employee Support

Although Egan's (2005) research did not specifically address e-learning or WBT, he postulated:

> The fostering of creativity is a necessity, not an option, for most organizations interested in responding to: (a) advancing technology; (b) a changing environment; (c) changing organizational structures or strategies; (d) overcoming competitors that improve their products, processes, and services; (e) evolving customer desires; and (f) evolving societies influenced increasingly by global issues and diversity" (p. 161). The impact of employees' self-perception regarding their individual creativity on their own work-related outcomes is an emerging area of study (p. 167).

Several questions reviewed in the Indiana University's Nursing Department (2007) Readiness Index for Learning Online (RILO) were found consistent with data desired to assess WBT preference in this study. These included:

- Face-to-face interaction with the instructor is: important, somewhat important, not necessary
- I rely on the instructor: rarely, sometimes, almost always
- I expect that the amount of time it will take to complete this course online will be: more time than course taught on site, about the same amount of time as course taught on site, less time than a course taught on site

Supervisor Support

Brown (2005) wrote "Espoused support from supervisors and coworkers may be less critical than actual support in the form of reduced workload or release time" (p. 477). Brown further explained that "Organizations and employees would benefit from knowing how to support employees in their efforts to use technology as a learning tool on the job" (p. 478). Mcpherson et al. (2004) found the level of support received from top management was directly correlated to the success of the e-learning program.

SWOT Analysis

Krempl and Pace (2001) wrote that assessment of business inputs such as strengths, weaknesses, opportunities, and threats should allow for the creation of a vision for training and development in the organization. Pearce (2007) explained the SWOT analysis places focus on your strengths and guides you where the greatest opportunities lie. Pearce further explained that the TOWS (threats, opportunities, weaknesses and strengths) could be utilized "to list negative factors first so that they can be turned into positive factors more readily" (p. 25). Garner (2005) spoke to the utilization of SWOT for basic strategic planning. Garner wrote "For an organization to determine where it wants to go in the future, it must assess where it is now" (p. 18). He elaborated on the necessity to identify resources. Garner wrote "SWOT analysis constitutes one of the most important aspects in the overall strategic planning process" (p. 18).

Summary of the Literature Review

Dooley et al. (2005) wrote "Effective administration of programs of distance education requires creative thinking and problem solving rather than trying to make it fit the traditional model. The ability to change quickly and be resilient is the key to success" (p. 265-266). Walker and Harrington (2004) stated "The need for training and the inadequacy of most facilities to meet this need with existing staff has caused educators to look to technology for a solution" (p.302). Walker and Harrington acknowledged that employees do not hire on in convenient class sizes, and much of the mandatory training cannot wait until a class is of a cost effective size. These same hiring problems were evident when evaluating training for nurses and medical assistants hiring into the clinics.

Most frequently hiring generated a training need every other week for one to six nurses and/or medical assistants entering the workforce in various clinics scattered from the local area to a distance of 15-100 plus miles radius of the primary health care organization campus.

This literature review featured related studies and summarized topics of interest for the major constructs in the 50-item survey utilized in this case study: demographics; computer access; computer usage; computer knowledge as related to satisfaction, frustration and motivation to transfer learning; WBT preferences as related to employee's and supervisor's support and the SWOT analysis. Advantages, challenges and andragogy as related to WBT were additionally summarized. As demonstrated in the literature review, insufficient evidence was found on education learning outcomes related to the affects of how training using computer education impacted adults, specifically to this study of nurses and medical assistants, in the work place. Thus the literature review further supported the need for this study.

CHAPTER III

METHODOLOGY

This was a case study to assess nurses and medical assistants perceived needs prior to implementing expanded WBT in physician clinics in a health care system. The study was conducted on an accessible survey population by use of a mixed methodology approach combining quantitative survey and descriptive data collection. A 50-item survey was used with Items 1-46 being open-ended questions developed to collect responses in terms of the perceptions of computer access; computer usage; computer knowledge as related to satisfaction, frustration, basic knowledge, and motivation to transfer learning; and preference as related to employee's and supervisor's support for WBT in a clinic setting. Items 47-50 were open-ended descriptive questions developed to obtain responses following a SWOT (strengths, weaknesses, opportunities, threats) analysis.

Collaborative Approach

Collaboration with multiple content experts was incorporated throughout the study. A 50-item survey instrument was used which consisted of a mixture of questions answered by a dichotomous yes or no, Likert type scales and short narrative questions. The researcher evaluated the emergence of themes in the descriptive survey responses and utilized statistical analysis to interpret the quantitative data. These questions are referenced as Items 1-50 in the study so as not to confuse with the original research questions.

The study enlisted the collaboration of nurses and medical assistants to work toward improving the WBT method of training and development used in a clinic setting. The nurses and medical assistants shared knowledge and behaviors common to the culture of the health care organization in which they were employed. This collaborative approach incorporated the learner-centered framework for e-learning in that the participants were co-learners and partners with their peers and the staff development educator in the process of evaluating the perception of WBT in the clinic setting (McCombs & Vakili, 2005). This learner-centered environment of participation was utilized to evaluate the participant's perception of WBT with the goal of creating a supportive and safe environment for e-learning (Bargal, 2006).

The Population of the Study

This study was conducted on an accessible survey population in a work environment consisting of multiple clinics throughout east, northeast and north central Texas. The survey population in this study consisted of 285 participants: 45 registered nurses (RNs), 140 licensed vocational nurses (LVNs), and 100 unlicensed medical assistants (MAs) in a selected health care system in Texas. The health care system in the study primarily staffed LVNs and MAs in the clinics with RNs staffed in some of the specialty clinics. For purposes of the study, the RNs and LVNs were combined as nurses thus forming two study discipline variables: nurses (N = 185) and medical assistants (N = 100). The Clinic Web-based Training Needs Assessment (CWBTNA) was the instrument utilized to collect the quantitative and descriptive data in this mixed-methodology approach.

Development of the CWBTNA

Health care is grounded in the practice of research based medicine. Evidence-based practice was a primary focus of the training and development culture within the organization of the study. To remain in alignment with the evidence-based practice philosophy of the organization, the researcher followed the researcher/practitioner approach incorporating participant participation into the study.

The CWBTNA was developed by the researcher to assess the nurse's and medical assistant's perceptions of computer access; computer usage; computer knowledge which included satisfaction, frustration, and motivation to transfer learning; and WBT preference which included both employee support and employee perceptions of supervisor support for WBT in the clinic setting. This was such a broad topic of research that the study was narrowed into a manageable scope by use of DeVaus's five types of questions (as cited by Gall et al., 1996, p. 292). They are outlined as follows:

1. The time frame for the study focused on the present.
2. The geographical location was limited to multiple clinics within one health care organization in Texas.
3. The study was limited to two subgroups: the disciplines of licensed nurses (RNs and LVNs) and unlicensed medical assistants (MAs).
4. The topic of study was directed toward the participant's perceptions of WBT.
5. The abstract of interest was directed toward factual information relating to the perceptions of the survey population of participants seeking both quantitative and descriptive feedback.

This was an internal organizational needs assessment of data collection intended to identify the participant's perceptions of WBT and opportunities for improving practice. Since some WBT was already utilized in the organization, the researcher constructed questions specific to the information needed to assist in the development of a user friendly expanded WBT program in the clinics within the organization of study. The 12-step guidelines for constructing a questionnaire by Leedy and Ormrod (2005) were utilized in the development of the instrument (p. 190-192).

Survey Question Development Process

The survey questions were part of an internal organizational needs assessment; therefore, the researcher constructed questions specific to gather participant's perceptions toward implementation of an expanded WBT program in the clinics within the selected organization. The data were collected to facilitate feedback from the nurses and the medical assistants. The survey questions were selected using various internal and external resources. Internal organization resources included: a history of concerns voiced by nurses and medical assistants in classroom settings, clinic visits, and feedback solicited from the Clinic Nursing Council members. Instruments were reviewed from various external resources to assist in construction of the CWBTNA question order sets. A literature review was conducted including survey instruments from multiple resources which used various order set combinations. Order sets from those resources assisted in the development of the CWBTNA as related to the perceptions of computer access, computer usage, computer knowledge and preference for WBT.

Order sets of groupings similar to those discussed in the literature review were formatted for use in the CWBTNA. As previously mentioned, the survey questions were referred to as Items 1-50 so as not to confuse with the original research questions. Items 1- 46 were developed to collect data related to nurse and medical assistant perceptions of computer access; computer usage; computer knowledge which included satisfaction, frustration, and motivation to transfer learning; and WBT preference which included both employee's support and employee's perception of supervisor's support for WBT. Items 47-50 consisted of open-ended questions using the SWOT analysis (strengths, weaknesses, opportunities, and threats) to collect descriptive data from the participants as related to their perception of WBT.

The CWBTNA was created with collaboration among internal sources in conjunction with a review of the external resource literature. The internal resources consisted of a combination of nursing staff development educators with Associate Degrees, Diplomas, Bachelors, and Masters Degrees; along with the Clinic Nursing Council members consisting of a mixture of licensed vocational nurses and registered nurses. As recommended by Gall, et al. (1996), a field test pretest of the questionnaire was conducted (p. 298). The initial CWBTNA was field tested in group settings of these 30 plus internal resources and followed with open discussion and recommendations. Modifications were made from feedback received. In March 2007, a homogeneous sample of 12 nurses and medical assistants from the selected population to be surveyed completed the CWBTNA. This field test was administered in a classroom setting and took the participants approximately five minutes to complete the CWBTNA. Open

discussion followed allowing participants to make recommendations for clarification assisting in establishment of face validity and clarity.

Following the field test, an internal collaborative review was held between the Nursing Staff Development Educator/Researcher (Masters in Interdisciplinary Studies/Allied Health), the Nursing Director of Education and Learning of the organization (Masters in Nursing) and the Nurse Director of Quality/Risk Management for the Clinic Division (Masters in Business Administration). The instrument was further reviewed by S. Allred (personal communication, July 24, 2007), an independent consultant: a Doctorate of Experimental Psychology with a major in Cognitive Psychology and minor in Statistics, an adjunct instructor of statistics in a local university, and the Director of Facility Competency Training and Development of a state health care facility. Based on feedback from this collaborative review, final modifications were made in the CWBTNA. Some items were modified for clarification and some for the elimination of redundancy to remain true to survey time management which included consideration for the participant's time away from work for completion of the CWBTNA.

Length of Questionnaire

The participant's work time was valuable and survey time management was taken into consideration. Leedy and Ormrod (2005) wrote "Keep the respondent's task simple. You are asking for people's time, a precious commodity for many people these days" (p. 191). The instrument had to be of moderate length to accommodate the collection of sufficient data to allow for analysis of nurse and medical assistant perceived needs. As

previously discussed based on field testing, it was estimated that the final CWBTNA took approximately five minutes for the participant to complete.

Questionnaire Language

The questionnaire was written in language appropriate to the participant employment and education levels. The unlicensed participants, medical assistants, were known to have minimally completed a high school education or equivalent based on job description requirements. The licensed participants, nurses, were known to minimally have completed high school and a certificate of completion in a vocational nursing program or higher nursing degree. The Microsoft Word 2007 option for checking the reading level of text was used. The Flesch Reading Ease was 62.2 with a 7.3 Flesch-Kincaid Grade Level.

Overview of the CWBTNA Instrument

The CWBTNA, a 50-item survey instrument, consisted of Parts 1-7 containing employee and clinic demographics. The instrument used a combination of quantitative and descriptive questions. The overview of the instrument follows the outline of the CWBTNA.

Part 1: Employee Demographics

Employee demographics provided the independent grouping variables of discipline, gender, race, and year of birth. Discipline selections were MA, LVN, and RN. The participant placed a mark in the box in front of the appropriate selection. Year of birth was collected by the participant placing a mark in the box for the year range identifying one of the following: Nexters/Millennials, Xers, Baby Boomers, or Veterans

(Zemke, Rains, and Filipczak, 2000). Gender was collected by the participant simply marking the box in front of the male or female choice. Race options were: African American, Asian or Pacific Islander, Whites, Hispanic, Native American and Other. The participant marked a box in front of the appropriate race.

Part 2: Clinic Demographics

Clinic demographics allowed the participant to mark the type of clinic in which they were employed. The types of clinics identified consisted of: regional clinic, local clinic or hospital based clinic. Each section was further drilled down to the specific clinic under each category.

Parts 3-6: Dependent Variables

Part 3: Computer Access

In the University of San Diego's (2007) online instrument, one line assessed access to a computer: "I have ready access to a computer and, through it, the Internet." Computer access was paramount to being able to expand a WBT program in the physician clinics. If sufficient access to a computer for WBT was not available, it would create a major barrier to training by this technology. Hence, a method to assess this response was desired and developed in the section emphasizing computer access at work for training. Item 1 was used to assess individual use; whereas, Item 2 was employed to assess shared access for computer use. Respondent data were collected by participants marking either a dichotomous yes or no to the statement. In this study, access to the Internet was not applicable as the WBT would be hosted through the organization

Intranet. Additionally, access to a computer with Intranet access identified the potential for Internet access should it be desired later.

Part 4: Computer Usage

Computer usage consisted of Items 3-12. Item 3 and Item 4 were used to collect the number of hours typically spent at work and typically spent using a computer at work for their job. Although the clinics utilized an electronic medical record for patient documentation, it was assumed that the employee would have non computer tasks as well; hence, the reason for collecting the data in both Item 3 (hours per day at work) and Item 4 (time spent using computer for job). The data were collected by the participant documenting the total number of hours, including fractional hours, per day spent at work and then the same for hours spent using a computer for job.

Item 5 (degree use computer to carry out job) was added to collect data allowing for assessment of the degree to which the computer was used to carry out job functions. This item allowed for another method of feedback relating to employee perceived computer usage. The data were collected as ordinal data from a five-point Likert type scale describing degree of computer use as: 5) always, 4) very often, 3) sometimes, 2) rarely, and 1) never.

Items 6-12 were used to assess measured usage of computers modalities. In the review of literature, The University of San Diego's (2007) online instrument evaluated the student's computer use by asking the question "I know how to use the computer." Rather than the use of a single question, the Items 6-12 order set was utilized to collect the data with a dichotomous yes or no response. The responses were combined to

evaluate the frequency of yes responses. The greater the number of yes responses the greater the positive perception of computer usage.

Part 5: Computer Knowledge

Computer knowledge assessment, Items 13-37, was created by the combination of four order sets which consisted of: satisfaction with computer competence, frustration with computers at work, basic computer knowledge, and motivation to transfer learning. The data were collected as ordinal data from a five-point Likert type scale combined by topic to form continuous variables. The response options were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree.

Part 6: WBT Preference

Web-based training preference order sets, Items 38-46, were formulated to obtain perception regarding both employee and supervisor support for WBT. The participants marked their perception by use of a five-point Likert type scale. The data were collected as ordinal data combined to form continuous variables. The response options were: 5) strongly agree, 4) agree, 3, neither agree nor disagree, 2) disagree, and 1) strongly disagree.

Phrases were included in the survey instrument to address topics such as: face-to-face interaction with the instructor, reliance on the instructor, working independently to do best work, and time it would take to complete online training. These order sets were consistent with order sets previously utilized to collect similar data. The Indiana University's (2007) Readiness Index for Learning was one example which used similar order sets to assess employee's support for WBT.

Part 7: SWOT

Pearce (2007) and Krempl and Pace (2001) explained how the use of the SWOT analysis assisted in the collection of data which identified where the greatest opportunities would be found. Additionally, they explained the necessity to focuses on strengths thus allowing for the creation of a vision for training and development. The SWOT Assessment consisted of Items 47-50. This section provided the open-ended questions for collection of descriptive survey data. The participant gave short answers to four questions assessing perceived strengths, weaknesses, opportunities, and threats related to WBT.

The Participant

In adherence with the guidelines set forth in The National Institute of Health Belmont Report (1979), respect for person, beneficence and justice was carried out throughout the study. No persons in the study were of diminished autonomy. Participation was encouraged but with no punitive consequences on the individual or their job should the CWBTNA not be returned. The threat of adverse consequences for persons was minimal to none (i.e., harm was minimal) with no known adverse events regarding human participants resulting throughout the process of the study. All persons who participated in the study were treated equally and completed the same CWBTNA. The CWBTNA had an assigned identification number for each participant to allow for elimination of duplicates, tracking of returned instruments, and increased confidentiality of participants by attaching no names to the instrument used in the study. The confidential master list of participants with assigned identification number was

maintained by the researcher so as not to allow access by others who collaborated in the process.

Instrument Reliability

The purpose of this section is a review of instrument reliability. Analyses were performed including: the Pearson Correlation Matrix, Exploratory Factor Analysis (EFA), and Cronbach's coefficient alpha using the Alpha if Item Deleted. For purposes of instrument validation, only responses to Items 13-46 were treated as interval data. The following gives a discussion of each of the analysis.

Exploratory Factor Analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.868 which demonstrated a great to superb value. Field (2005) wrote "A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors" (p. 640). Field cited Kaiser (1974) who wrote that values between 0.8 and 0.9 are great and values above 0.9 are superb" (p. 640). A rotated component matrix$^{\alpha}$ was used. The Varimax with Kaiser Normalization rotation method converged in five iterations. The Direct Oblimin of the Oblique Rotation was run but it did not result in a simpler factor structure; therefore, the Varimax produced a simpler structure and was used.

Exploratory Factor Analysis (EFA) was utilized. Stern (2008) described EFA as it "Discovers commonalities that may exist among order sets of variables" (p. 353). Stern further cited Guadagnoli and Velicer (1988) regarding sample size stating "If all variables have high loadings (0.60 and above) and there are four or more variables per factor, the

outcome is interpretable whatever the sample size" (p. 358). The sample consisted of 239 participants. Principal component analysis extraction method was used.

Exploratory Factor Analysis for Computer Knowledge was analyzed. Basic Computer Knowledge, Items 18-32, demonstrated that of these 15 items 10 had high factor loading greater than 0.60 with the remaining five items demonstrating factor loading greater than 0.50. Items 18-26 and 30-31 loaded higher under Factor 1; whereas, Items 27-29 and 32 loaded higher under Factor 3. Items 27-29 demonstrated high factor loading greater than 0.79 and Item 32 loaded with a 0.522. Items 27-29 and 32 which loaded higher under Factor 3 required a higher level of computer knowledge such as PowerPoint®, Excel®, Access® or scholarly peer review searches than did the items loading under Factor 1. Possibly for future research these items should be grouped in an order set acknowledging advance computer knowledge. Item 18 loaded slightly higher under Factor 4 with a 0.546, whereas, it loaded with a 0.534 under Factor 1. The remainder of the Items 19-26 and Items 30-31 all loaded greater than 0.50 ranging from 0.534 to 0.772. Supervisor's Support for Web-based Training, Items 44-46, demonstrated high loadings of greater than 0.50 with each loading under Factor 1 thus indicating strong commonalities in this order set.

Motivation to Transfer Learning, Items 33-37, demonstrated high loadings of greater than 0.70 each under Factor 2 indicating strong commonalities in this order set. Employee Support for Web-based Training, Items 38-43, demonstrated high loadings of greater than 0.50 split between Factors 2 and 3. Item 41 and Item 42 loaded under Factor 2 greater than 0.90 thus showing strong commonalities. Both these items related to a

preference toward interaction with an instructor. The remaining Items 38-40 and Item 43 loaded under Factor 3 with loadings greater than 0.50 indicating adequate commonalities among all items in this order set. Perhaps in future studies Items 41 and 42 should be combined in an order set indicating Employee Opposition to Web-based Training; however, as included they did provide control analysis to employee's support.

Satisfaction with Computer Competence, Items 13-15, demonstrated high loadings ranging from 0.862 to 0.867 each under Factor 4 indicating strong commonalities in this order set. Frustration with Computers, Items 16-17, demonstrated high loadings ranging from -0.700 to 0.805 each under Factor 5 indicating strong commonalities in this order set. The Intercorrelation Matrix between all items included in the EFA can be found in Appendix C. The Exploratory Factor Analysis demonstrated the study met both adequate sample size and variable loadings as described above and shown in Table 1 which follows.

Table 1
Exploratory Factor Analysis

Item	Question	1	2	3	4	5
	Computer Knowledge					
	Satisfaction with Computer Competence					
13	I am satisfied with my current level of ability to use a computer.				.866	
14	I am happy with the amount of things I can do with a computer.				.862	
15	Overall, my ability to use a computer is fine.				.867	
	Frustration with Computers at Work					
16	I get frustrated when I try to use my computer on the job.					-.700
17	Overall, I experience little frustration using computers on the job.					.805
	Basic Computer Knowledge					
18	I know how to use the computer.	.534			.546	
19	When confronted with new technology I am eager to learn.	.534				
20	I am comfortable communicating online in English.	.638				
21	I am comfortable with my typing skills.	.551				
22	I am comfortable communicating with others through email.	.754				
23	I can attach files to my email communication.	.585				
24	I can open files received by email communication.	.714				
25	I can access computer training modules on HealthNet.	.678				
26	I can create a Word® document on the computer.	.676				
27	I can create a PowerPoint® presentation on the computer.			.852		
28	I can use computer spreadsheets such as Excel®.			.796		
29	I can use computer data bases such as Access®.			.860		
30	I can use search engines such as Google, Yahoo, etc.	.772				
31	I know how to use the Internet for research if I need information.	.615				
32	I can locate peer reviewed articles in professional journals on the Internet.			.522		
	Motivation to Transfer Learning					
33	When I complete training, I can't wait to get back to work and try what I learned.		.763			
34	I believe training will help me to do my current job better.		.725			
35	I get excited when I think about trying to use my new learning on the job.		.860			
36	I incorporate knowledge and skills I learn at training to my daily work.		.823			
37	I am motivated to use what I learn in training on the job.		.808			

Table 1 continued						
Item	Question	1	2	3	4	5
	Employee's Support for WBT					
38	I prefer to have web-based training modules over classroom training.			.689		
39	I like to work independently and at my own pace.			.749		
40	I expect it will take about the same amount of time to complete training on the computer that it does in the classroom.			.695		
41	Face-to-face interaction with the instructor is important to me.		.904			
42	I rely on the instructor to guide my learning.		.901			
43	I prefer to complet my annual system training on HealthNt instead of attending classroom or live training activities.			528		
	Supervisor's Support for WBT					
44	My supervisor is supportive of my taking time for online training on a computer.	.831				
45	My supervisor would like me to take online course or training.	.822				
46	If it were up to my supervisor, I would do not online computer courses/training.	.675				

Cronbach's Alpha

As cited by Field (2005), "The Cronbach's alpha is the most common measure of scale reliability" (p. 667). Field cited Kline (1999)

> Although the generally accepted value of 0.8 is appropriate for cognitive tests such as intelligence tests, for ability tests a cut-off point of 0.7 is more suitable. He goes on to say that when dealing with psychological constructs, values below even 0.7 can, realistically, be expected because of the diversity of the constructs being measured (p. 668).

Gall, Borg, and Gall (1996) wrote "Some multiple-choice and essay tests include items that have several possible answers, each of which is a different weight. Cronbach's alpha is a widely used method for computing test score reliability" (p. 257). Cronbach (1951) as cited by Field suggested "If several factors exist then the formula should be applied separately to items relating to different factors. In other words, if your questionnaire has

subscales, α should be applied separately to these subscales" (p. 668). The Cronbach's alpha was used to establish the reliability of the CWBTNA. The SPSS 'Scale if item deleted' was selected to provide an alpha for each item on the scale.

Cronbach's coefficient alpha (Scale if item deleted) was measured on items in the order sets specific to Computer Knowledge. Web-based Training contained additional items in order sets which were also measured by Cronbach's. All items in the order sets for Computer Knowledge demonstrated values exceeding 0.9; hence, met the criteria for generally accepted values. The items in the order sets for Web-based Training Preference proved to be respectable ranging from 0.65 to 0.75. Outcomes may be reviewed in Table 2 and Table 3 which follow.

Table 2
Cronbach's Alpha: Knowledge and Motivation

Item	Question	Alpha if Item Deleted
	Computer Knowledge	
	Satisfaction with Computer Competence	
13	I am satisfied with my current level of ability to use a computer.	0.9055
14	I am happy with the amount of things I can do with a computer.	0.9065
15	Overall, my ability to use a computer is fine.	0.9063
	Frustration with Computers at Work	
16	I get frustrated when I try to use my computer on the job.	0.9229
17	Overall, I experience little frustration using computers on the job.	0.9176
	Basic Computer Knowledge	
18	I know how to use the computer.	0.9065
19	When confronted with new technology I am eager to learn.	0.9075
20	I am comfortable communicating online in English	0.9065
21	I am comfortable with my typing skills.	0.9089
22	I am comfortable communicating with others through email.	0.9066
23	I can attach files to my email communication.	0.9045
24	I can open files received by email communication.	0.9062
25	I can access computer training modules on HealthNet.	0.9088
26	I can create a Word® document on the computer.	0.9053
27	I can create a PowerPoint® presentation on the computer.	0.9067
28	I can use computer spreadsheets such as Excel®.	0.9053
29	I can use computer data bases such as Access®.	0.9079
30	I can use search engines such as Google, Yahoo, etc.	0.9067
31	I know how to use the Internet for research if I need information.	0.9059
32	I can locate peer reviewed articles in professional journals on the Internet.	0.9070
	Motivation to Transfer Learning	
33	When I complete training, I can't wait to get back to work and try what I learned.	0.9113
34	I believe training will help me to do my current job better.	0.9130
35	I get excited when I think about trying to use my new learning on the job.	0.9105
36	I incorporate knowledge and skills I learn at training to my daily work.	0.9096
37	I am motivated to use what I learn in training on the job.	0.9097

Table 3
Cronbach's Alpha: WBT Support Preference

Item	Question	Alpha if Item Deleted
	Employee's Support for Web-based Training	
38	I prefer to have web-based training modules over classroom training.	0.6534
39	I like to work independently and at my own pace.	0.6802
40	I expect it will take about the same amount of time to complete training on the computer that it does in the classroom.	0.7554
41	Face-to-face interaction with the instructor is important to me.	0.6957
42	I rely on the instructor to guide my learning.	0.7056
43	I prefer to complete my annual system training on HealthNet instead of attending classroom or live training activity.	0.6702
	Supervisor's Support for Web-based Training	0.6836
44	My supervisor is supportive of my taking time for online training on a computer.	
45	My supervisor would like me to take online courses or training.	0.6889
46	If it were up to my supervisor, I would do no online computer courses/training.	0.7188

Summary of Methodology

A 50-item survey, the Clinic Web-based Training Needs Assessment (CWBTNA), was used to collect the data using survey method. As previously cited, Mathison (1988) and Gall, Borg, and Gall (1996) described good research practice necessitates triangulation using various methods, data sources and researchers to increase the validity of findings. Foss and Ellefsen (2002) wrote that nursing research should be supported with triangulation and multiplicity. As recommended by Bargal (2006) this study was conducted with cooperation between the participants and the researcher who was also the practitioner.

Part 1 of the CWBTNA collected employee demographics including discipline, year of birth, education, gender and race. Part 2 collected clinic demographics. Parts 3-6 collected quantitative data for evaluating computer access at work for training; computer usage; computer knowledge consisting of satisfaction, frustration, basic computer knowledge, and motivation to transfer learning; and web-based training preference as related to employee's and supervisor's support. Part 7 collected the descriptive data used in the open-ended questions for the SWOT analysis.

Analyses performed included: Exploratory Factor Analysis (EFA), Cronbach's coefficient alpha, and Correlations. The Exploratory Factor Analysis demonstrated the study met both adequate sample size and variable loadings. Cronbach's coefficient alpha (Scale if item deleted) was computed on the order sets for Computer Knowledge and those specific to Web-based Training. All items in the order sets for Computer Knowledge met the criteria for generally accepted values as they exceeded 0.9. The items

in the order sets for Web-based Training Preference proved to be respectable ranging from 0.65 to 0.75. A Pearson Correlation Matrix was run for Items 3-46 and demographics including gender, generational and race groupings. Significant correlations between order sets were demonstrated throughout the matrix.

A single researcher conducted the study utilizing a collaborative approach with multiple content experts. The study was conducted on an accessible survey population in a work environment consisting of multiple clinics throughout east, northeast and north central Texas. The participants consisted of nurses and unlicensed medical assistants.

CHAPTER IV

ANALYSIS OF DATA AND FINDINGS

This chapter includes the statistical analysis of the perceptions of nurses and medical assistants toward an expanded web-based training (WBT) program in clinics within the Trinity Mother Frances Hospitals and Clinics (TMF). TMF is a health care organization in Texas with hospitals in east Texas and clinics scattered throughout east, north east and north central Texas. The focus of this study was on the clinics.

Introduction to the Study

The initial assessment of the problem determined nurses and medical assistants located at multiple clinics, off the primary campus of the health care organization, created a challenge for delivering new and on-going training and development for the health care organization. New and innovative methods of training delivery had to be evaluated and developed which would reduce barriers to training and development and reduce costs for the health care organization. The accessible survey population of participants consisted of males and females ranging in age from approximately 19 years to 64 years. Nurse and medical assistant perceptions evaluated were computer access; computer usage; computer knowledge which included satisfaction, frustration, and motivation to transfer learning; and WBT preference which included both employee support and employee perceptions of their supervisor's support for WBT. Additionally, the participant's perceived strengths, weaknesses, opportunities and threats toward WBT were evaluated.

The Instrument

The Clinic Web-based Training Needs Assessment (CWBTNA) instrument was developed for data collection. This instrument included mechanisms to collect both quantitative and descriptive data. Following you will find a brief description of the parts of the CWBTNA.

Part 1 and 2 of the CWBTNA consisted of employee and clinic demographics. Employee demographics provided the independent group variables of: discipline (medical assistants, licensed vocational nurses and registered nurses), gender, race (African American, Asian or Pacific Islander, White, Hispanic, Native American, or other), and generational year of birth (Nexters, Xers, Baby Boomers, Veterans). The participant marked a box in front of the appropriate choice for each demographic.

Parts 3 through 6 consisted of Items 1-46 and were used as the dependent test variables. Data were collected by participants responding with yes/no dichotomous answers and ordinal data from two different five-point Likert type scales. One five-point Likert type scale provided the measurement for the perceived degree of computer use through response selections: 5) always, 4) very often, 3) sometimes, 2) rarely, and 1) never. A second five-point Likert type scale provided response options: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. Topics measured by multiple items of a single Likert format were combined to represent a continuous scale variable. Parametric *t-test*, Analysis of Variance (ANOVA), and shi-square were used to analyze the data.

Part 7, Items 47-50, the SWOT Assessment (strengths, weaknesses, opportunity and threats) open-ended items, were provided the descriptive data collection section. Four open-ended questions encouraged the participants to respond listing one strength, one weakness, one opportunity and one threat they perceived in the move toward WBT. This descriptive data was collected for comparison with the quantitative data.

Data Collection Process

The CWBTNA was mailed out to 285 nurses and medical assistants of an accessible survey population in clinics in one health care organization in Texas. The accessible population consisted of: 140 Licensed Vocational Nurses, 45 Registered Nurses, and 100 Unlicensed Medical Assistants. The survey began on October 19, 2007 with the first mail out on plain white 8 ½ x 11 paper. A second mail out took place on November 29, 2007 to participants from whom a survey instrument had not been returned. The same instrument was utilized and printed on 8 ½ x 11 goldenrod colored paper. The survey was closed December 31, 2007.

The final research study sample consisted of a total of 239 participants who returned the survey out of the original 285 of the accessible survey population. A total of 200 participants responded to the first mail out resulting in a 70.2% return rate based on the accessible survey population of 285. The second mail out on goldenrod paper generated an additional response of 39 bringing the total survey sample participants to 239 for a response rate of 83.9%. Table 4 provides a breakdown of the survey population and the survey sample. The participants were given two options for returning the survey: an interdepartmental mailer addressed to the researcher's office in the health care

organization or by use of a self-addressed return envelope to the researcher's home address with pre-paid postage stamp attached. Of the 239 sample participants responding, 59% (n = 141) of the surveys were received through the United States Postal Service in the self-addressed return envelope to the researcher's home address. The remaining 41% (n = 98) were received in the interdepartmental mail at work.

The 239 (83.9%) participants consisted of 35 registered nurses, 123 licensed vocational nurses, and 81 unlicensed medical assistants. In this study, the registered nurses and licensed vocational nurses were grouped together as 'nurses' thus creating two groups: 158 licensed nurses (66.1%) and 81 unlicensed medical assistants (33.9%). Summary provided in Table 4.

Table 4
Participation by Discipline

Discipline	Survey Population	Survey Sample	Participation %	Final Grouping	Grouping %
RN	45	35	77.8%	Nurses 158	66.1%
LVN	140	123	87.9%		
MA	100	81	81.0%	MAs 81	33.9%
Total Participation	285	239	83.9%	239	100.0%

The data collected from the questions in the CWBTNA were evaluated without names to maintain confidentiality of the participants and were entered into an Access® data base. Upon completion of data entry into Access©, the content was exported into an Excel® file and finally exported into SPSS® for analysis. Not all surveys were 100%

complete. Some analyses showed fewer participants than others; however, the missing data was less than 10% on the quantitative data and was 18% on the descriptive data.

Study Findings

A plethora of data was available in the clinic setting; however, as Fields (2005) explained it was necessary to collect and manage the data in a meaningful way. Norusis (2002) states "Statistical software is essential for analyzing data" (p. 1). For purposes of this study, SPSS® was the statistical analysis software chosen; therefore, unless otherwise noted the quantitative statistical computations were performed in SPSS®. The parametric *t-test*, Analysis of Variance (ANOVA), and chi-square were used to analyze the data. The Bonferroni was used to control for overall Type I error rate (α) across comparisons in independent variable subgroups (MA and Nurse, Generations, Gender and Race).

The descriptive data were analyzed using the SWOT analysis (strengths, weaknesses, opportunity and threats). The data in each section of the SWOT was continually drilled down establishing themes. The themes which emerged from this drilling down of descriptive data were further analyzed to assess what themes corresponded to the order sets in the quantitative data.

Research Question No. 1

What are the differences in the nurse and medical assistant perceptions of access to computers to accommodate WBT?

Part 1, Discipline, provided the data for the independent group variables: nurses (LVN and RN) and medical assistants. The dependent test variable data were collected in

Part 3, Computer Access at Work for Training. Item 1, access to computer at work designated for individual use, and Item 2, access to a computer at work designated for shared use, were analyzed by computing percentages with the chi-square.

Computer Access: Designated for Individual Use, Part 3, Item 1

The independent group variable levels were nurses and medical assistants and the dependent test variable was individual computer use. The data were collected by the participants marking either yes or no to the statement: I have access to a computer at work designated for my individual use. As reported in Tables 5, 6, and 7 a total of 14 medical assistants (17.3%) and 29 nurses (18.4%) responded with a no to access to a computer at work designated for individual use. A total of 67 medical assistants (82.7%) and 129 nurses (81.6%) responded with a yes to access to a computer designated for individual use. A total of 81 medical assistants (33.9%) responded with 14 (17.3%) responding no compared to 67 (82.7%) responding yes to access to a computer for individual use. A total of 158 nurses (66.1%) responded with 29 (18.4%) responding no and 129 (81.6%) responding yes to access to computer for individual use. Proportionally 32.6 % of the medical assistants responded with a no to access to individual computer use compared to 67.4% of the nurses; whereas, 34.2% of the medical assistants responded with a yes compared to 65.8% of the nurses. All expected frequencies were greater than 5 as evidenced by the smallest expected count in the crosstabulation tables which was 14.6. The chi-square test indicated no significant difference in proportions among medical assistants and nurses with $X^2(1) = 0.042$, $p > 0.05$ in their perception of access to a computer at work for individual computer use. There were only slight proportional

differences from chance as evidenced by the expected count of 14.6 for the no response in medical assistants compared to the actual count of 14; whereas, 66.4 were anticipated by chance to respond to yes and 67 actually responded yes. Nurses had an expected count of 28.4 for the no response compared proportionally to an actual count of 29; whereas, for the yes response an expected count of 129.6 compared to 129 actual. Proportionally only minimal differences were seen between expected counts and actual counts.

Table 5
Case Processing Summary: MA or Nurse – Computer for Individual Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Computer Individual Use MA or Nurse #1	239	100.0%	0	.0%	239	100.0%

Table 6
Crosstabulation: MA or Nurse – Computer for Individual Use

			Comp Individual		Total
			0 = No	1 = Yes	
MA or Nurse	MA	Count	14	67	81
		Expected Count	14.6	66.4	81.0
		% within MA or Nurse	17.3%	82.7%	100.0%
		% within Comp Individual	32.6%	34.2%	33.9%
		% of Total	5.9%	28.0%	33.9%
	Nurse	Count	29	129	158
		Expected Count	28.4	129.6	158.0
		% within MA or Nurse	18.4%	81.6%	100.0%
		% within Comp Individual	67.4%	65.8%	66.1%
		% of Total	12.1%	54.0%	66.1%
Total		Count	43	196	239
		Expected Count	43.0	196.0	239.0
		% within MA or Nurse	18.0%	82.0%	100.0%
		% within Comp Individual	100.0%	100.0%	100.0%
		% of Total	18.0%	82.0%	100.0%

Table 7
Chi-square Tests: MA or Nurse – Computer for Individual Use

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sided)
Pearson chi-square	.042(b)	1	.838		
Continuity Correction	.001	1	.979		
Likelihood Ratio	.042	1	.838		
Fisher's Exact Test				1.000	.495
Linear-by-Linear Association	.041	1	.839		
N of Valid Cases	239				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.57.

Computer Access: Designated for Shared Use, Part 3, Item 2

The independent group variable levels were nurses and medical assistants and the dependent test variable was shared computer use. Participants had the option to mark either yes or no to the statement: I have access to a computer at work designated for shared use. Tables 8, 9, and 10 provide the data related to shared use of computers. A total of 81 medical assistants (33.9%) responded with 38 (46.9%) responding no and 43 (53.1%) responding yes to access to a computer at work designated for shared use. A total of 158 nurses (66.1%) responded with 67 (42.4%) responding with a no and 91 (57.6%) responding with a yes to access to a computer at work designated for shared use. Proportionally 36.2% of the medical assistants responded no compared to 63.8% of the nurses. Likewise, 32.1% of the medical assistants responded yes compared to 67.9% of the nurses. All expected frequencies were greater than 5 as evidenced by the smallest expected count in the crosstabulation tables was 35.6.

The chi-square test indicated there was no difference in proportions among medical assistants and nurses with $X^2(1) = 0.442$, $p > 0.05$ in their perception of shared

access to computers at work. Only slight proportional differences in chance were noted as evidenced by the expected count of 35.6 compared to 38 for the count for medical assistant no responses; whereas, yes of 45.4 for expected count compared to a count of 43. Nurses had an expected count of 69.4 for no compared to a count of 67; whereas, for the yes nurses had an expected count of 88.6 compared to a count of 91. This reflected only minimal proportional differences between expected counts and actual counts.

Table 8
Case Processing Summary: MA or Nurse – Computer for Shared Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Computer Share Use MA or Nurse #2	239	100.0%	0	.0%	239	100.0%

Table 9
Crosstabulation: MA or Nurse – Computer for Shared Use

			Comp Shared		Total
			0 = No	1 = Yes	
MA or Nurse	MA	Count	38	43	81
		Expected Count	35.6	45.4	81.0
		% within MA or Nurse	46.9%	53.1%	100.0%
		% within Comp Share	36.2%	32.1%	33.9%
		% of Total	15.9%	18.0%	33.9%
	Nurse	Count	67	91	158
		Expected Count	69.4	88.6	158.0
		% within MA or Nurse	42.4%	57.6%	100.0%
		% within Comp Share	63.8%	67.9%	66.1%
		% of Total	28.0%	38.1%	66.1%
Total		Count	105	134.0	239
		Expected Count	105.0	134.0	239.0
		% within MA or Nurse	43.9%	56.1%	100.0%
		% within Comp Shared	100.0%	100.0%	100.0%
		% of Total	43.9%	56.1%	100.0%

Table 10
Chi-square Tests: MA or Nurse – Computer for Shared Use

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sided)
Pearson chi-square	.442(b)	1	.506		
Continuity Correction (a)	.278	1	.598		
Likelihood Ratio	.441	1	.507		
Fisher's Exact Test				.582	.299
Linear-by-Linear Association	.440	1	.507		
N of Valid Cases	239				

a Computed only for 2x2 table

b 0 Cells (.0%) have expected count less than 5. The minimum expected count is 35.59.

Research Question No. 2

What are the differences in the nurse and medical assistant perceptions of computer usage?

Part 1, Discipline, provided the data for the independent group variables: nurses (LVN and RN) and medical assistants. The dependent test variable data were collected in Part 4, Computer Usage, in Items 3-12 and were analyzed using a combination of *t-tests* and chi-square.

Computer Usage: Hours per Day at Work, Part 4, Item 3

The independent group variable levels were nurses and medical assistants and the dependent test variable was hours per day spent at work. The data were collected by the participant documenting the total number of hours, including fractional hours, per day spent at work. Tables 11, 12, and 13 provide the data related to hours per day spent at work. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, the equal variances assumed were used to interpret the *t-test*. The results were computed based on a response of 81 medical

assistants with a mean of 8.48 hours and 157 nurses with a mean of 8.86 hours they reported spending at work, a difference not found to be significant. The *t-test* indicated no difference in the mean responses of nurses and medical assistants t (236) = -1.201, p > 0.05 response.

Table 11
Group Statistics: MA and Nurse – Hours Per Day Spent at Work

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Hrs Per Day at Work #3	MA	81	8.4802	1.07327	.11925
	Nurse	157	8.8631	2.76136	.22038

Table 12
Levene's Test: MA and Nurse – Hours Per Day Spent at Work

		Levene's Test for Equality of Variances	
		F	Sig.
Hours Per Day at Work #3	Equal variances assumed	.587	.444
	Equal variances not assumed		

Table 13
Independent Samples Test: MA and Nurse – Hours Per Day Spent at Work

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hrs Per Day at Work #3	Equal variances assumed	-1.201	236	.231	-.38281
	Equal variances not assumed	-1.528	223.385	.128	-.38281

Computer Usage: Hours per Day on Computer for Job, Part 4, Item 4

The independent group variable levels were nurses and medical assistants and the dependent test variable was hours per day spent on the computer for job. The data were collected by the participant documenting the total number of hours; including fractional hours, per day spent using the computer for their job. Tables 14, 15, and 16 provide the data related to hours per day spent on computer for job. The medical assistants documented a greater number of hours of use on the computer per day at work for their job than did the nurses. Since the outcome from the Levene's Test of homogenous variances was significant for hours per day using a computer at work, the equal variances not assumed was used. The *t-test* detected a significant difference in the number of hours per day spent on the computer for job between nurses and medical assistants t (198.436) = 2.569, $p < 0.05$. Medical assistants (n = 80, M = 7.33) reported significantly higher mean numbers of hours of computer usage per day at work compared to that reported by nurses (n = 156, M = 6.65). The Bonferroni correction resulted in p = 0.011; therefore, the correction of 0.01 for new level of significance did not affect this test.

Table 14
Group Statistics: MA and Nurse – Hours Per Day Spent on Computer

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Hrs Per Day on Computer #4	MA	80	7.3325	1.73050	.19348
	Nurse	156	6.6548	2.24022	.17936

Table 15 Levene's Test: MA and Nurse – Hours Per Day Spent on Computer			
		Levene's Test for Equality of Variances	
		F	Sig.
Hours Per Day on Computer #4	Equal variances assumed Equal variances not assumed	11.254	.001

Table 16 Independent Samples Test: MA and Nurse – Hours Per Day Spent on Computer					
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hrs Per Day on Computer #4	Equal variances assumed	2.367	234	.019	.67769
	Equal variances not assumed	2.569	198.436	.011	.67769

Computer Usage: Degree of Use, Part 4, Item 5

The independent group variable levels were nurses and medical assistants and the dependent test variable was the degree of computer use to carry out job functions. The data were collected as ordinal data from a five-point Likert type scale describing degree of computer use as: 5) always, 4) very often, 3) sometimes, 2) rarely, and 1) never. Tables 17, 18, and 19 provide the data related to the nurse and medical assistant degree of computer use. The initial chi-square test calculated on the five categories indicated two cells (33.3%) had an expected count less than five. Therefore, the categories were reduced to two categories instead of three. Sometimes and almost always were combined to make up not always which were then compared to always. For these new categories, all expected frequencies were greater than 5 as evidenced by the smallest expected count in the crosstabulation tables was 23.2. A total of 81 medical assistants (34.2%) responded

with 18 (22.2%) responding not always as compared to 63 (77.8%) responding always. A total of 156 nurses (65.8%) responded with 50 (32.1%) responding not always compared to 106 (67.9%) responding always. Proportionally 26.5% of the medical assistants responded with not always compared to 73.5% of nurses; whereas, 37.3% of the medical assistants responded always compared to 62.7% of nurses.

The chi-square test indicated there was no difference in proportions among medical assistants and nurses with $X^2(1) = 2.52$, $p > 0.05$ in their perception of the degree to which they used the computer to carry out their job function. Only slight proportional differences in chance were noted as evidenced by the expected count of 23.2 compared to a count of 18 for medical assistant not always responses; whereas always 57.8 for expected count compared to a count of 63. Nurses had an expected count of 44.8 for not always compared to a count of 50; whereas 111.2 expected count for always compared to a count of 106.

Table 17
Case Processing Summary: MA and Nurse – Degree of Computer Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Degree of Computer Use MA or Nurse #5	237	99.2%	2	.8%	239	100.0%

Table 18
Q5Collapse Crosstabulation: MA and Nurse – Degree of Computer Use

			Q5Collapse		Total
			Not Always	Always	
MA or Nurse	MA	Count	18	63	81
		Expected Count	23.2	57.8	81.0
		% within MA or Nurse	22.2%	77.8%	100.0%
		% within Q5Collapse	26.5%	37.3%	34.2%
		% of Total	7.6%	26.6%	34.2%
	Nurse	Count	50	106	156
		Expected Count	44.8	111.2	156.0
		% within MA or Nurse	32.1%	67.9%	100%
		% within Q5Collapse	73.5%	62.7%	65.8%
		% of Total	21.1%	44.7%	65.8%
Total		Count	68	169	237
		Expected Count	68.0	169.0	237.0
		% within MA or Nurse	28.7%	71.3%	100.0%
		% within Q5Collapse	100.0%	100.0%	100.0%
		% of Total	28.7%	71.3%	100.0%

Table 19
Chi-square Test: MA and Nurse – Degree of Computer Use

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sided)
Pearson chi-square	2.518(b)	1	.113		
Continuity Correction (a)	2.060	1	.151		
Likelihood Ratio	2.586	1	.108		
Fisher's Exact Test				.131	.074
Linear-by-Linear Association	2.507	1	.113		
N of Valid Cases	237				

a Computed only for 2x2 table1
b 0 Cells (.0%) have expected count less than 5. The minimum expected count is 23.24.

Computer Usage: Positive Perception, Part 4, Items 6-12

The independent group variable levels were nurses and medical assistants and the dependent test variable was the positive perception of computer usage. The data were collected in Items 6-12 of the CWBTNA with a dichotomous yes or no response. A positive perception was defined by the yes response and a negative perception was defined by the no response. The data were combined as the number of yes responses. The greater the number of yes responses the greater the positive perception of computer

usage. The data were then analyzed as a continuous variable comparing the two groups: nurses and medical assistants. Tables 20, 21, and 22 provide the data related to medical assistants' and nurses' positive perception of computer use. The results were a mean of 4.62 yes responses for nurses and 4.06 yes responses for medical assistants. Thus a positive perception of computer usage for both nurses and medical assistants was indicated. A total of 158 nurses and 81 medical assistants responded. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, the equal variances assumed were used to interpret the *t-test*. The *t-test* indicated a difference showing nurses having significantly more positive perception of computer usage than did the medical assistants $t\ (237) = -2.51$, $p < 0.05$. The Bonferroni correction resulted in $p = 0.013$; therefore, the correction of 0.01 for new level of significance did not affect this test.

Table 20
Group Statistics: MA and Nurse – Positive Perception of Computer Use

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Positive Perception of computer usage #6-12	MA	81	4.0617	1.63818	.18202
	Nurse	158	4.6203	1.62233	.12907

Table 21
Levene's Test: MA and Nurse – Positive Perception of Computer Use

		Levene's Test for Equality of Variances	
		F	Sig.
Positive Perception of computer usage #6-12	Equal variances assumed Equal variances not assumed	.169	.682

Table 22
Independent Samples Test: MA and Nurse – Positive Perception of Computer Use

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Positive Perception of computer usage #6-12	Equal variances assumed	-2.511	237	.013	-.55852
	Equal variances not assumed	-2.503	160.052	.013	-.55852

Research Question No. 3

What are the differences in the nurse and medical assistant perceptions of their computer knowledge?

Part 1, Discipline, provided the data for the independent group variable levels: Nurses (LVN and RN) and Medical Assistants. The dependent test variable data were collected in Part 5, Computer Knowledge, in Items 13-37 as ordinal data from a five-point Likert type scale. The data were combined by sub-topic to form continuous variables and analyzed by the parametric *t-tests*. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. A mean of greater than three on the five-point Likert type scale indicated positive perception.

Positive Perception: Satisfaction and Frustration, Part 5, Items 13-17

Satisfaction: Items 13-15

The independent group variable levels were nurses and medical assistants and the dependent test variable was satisfaction. Medical assistants perceived greater satisfaction with computer competence than the nurses. The data were collected using the five-point Likert type scale. Tables 23, 24, and 25 provide the data related to medical assistant and

nurse satisfaction with computer competencies. A total of 80 medical assistants responded with a mean 4.25 satisfaction compared to 153 nurses responding with a mean 3.87 satisfaction. Both nurses and medical assistants indicated a positive perception of their satisfaction with computer competence since their means exceeded three. The outcome from the Levene's Test of homogenous variances was significant for equal variances assumed; therefore, the equal variances not assumed were used to interpret the *t-test*. The *t-test* indicated that medical assistants reported significantly higher satisfaction with their satisfaction with computer competence compared to nurses $t\,(204.9) = 3.41$, $p < 0.05$. The Bonferroni correction resulted in p = 0.001; therefore, the correction of 0.01 for new level of significance did not affect this test.

Table 23
Group Statistics: MA and Nurse – Satisfaction with Computer Competence

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction with Computer #13-15	MA	80	4.2458	.70709	.07906
	Nurse	153	3.8693	.95608	.07729

Table 24
Levene's Test: MA and Nurse – Satisfaction with Computer Competence

		Levene's Test for Equality of Variances	
		F	Sig.
Satisfaction with Computer #13-15	Equal variances assumed	4.403	.037
	Equal variances not assumed		

Table 25
Independent Samples Test: MA and Nurse – Satisfaction with Computer Competence

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Satisfaction with Computer #13-15	Equal variances assumed	3.105	231	.002	.37655
	Equal variances not assumed	3.406	204.909	.001	.37655

Frustration: Items 16-17

The independent group variable levels were nurses and medical assistants and the dependent test variable was frustration. The data were collected using the five-point Likert type scale. Tables 26, 27, and 28 provide the data related to medical assistant and nurse frustration with computers. A total of 80 medical assistants responded with a mean 2.88 frustration and 155 nurses with a mean 2.93 frustration with computers at work. Both medical assistants and nurses indicated a mean response less than three which identified the participants were not frustrated with their perception of their computer knowledge. The outcome from the Levene's Test of homogenous variances was significant for equal variances assumed; therefore, equal variances not assumed were used to interpret the *t-test* for frustration with computer knowledge. The *t-test* indicated no difference in reported frustrations with computers at work between nurses and medical assistants t (128.2) = -0.457, $p > 0.05$.

Table 26
Group Statistics: MA and Nurse – Frustration with Computers

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Frustration with Computers #16-17	MA	80	2.8813	.76408	.08543
	Nurse	155	2.9258	.58608	.04707

Table 27 Levene's Test: MA and Nurse – Frustration with Computers			
		Levene's Test for Equality of Variances	
		F	Sig.
Frustration with Computers #16-17	Equal variances assumed Equal variances not assumed	3.888	.050

Table 28 Independent Samples Test: MA and Nurse – Frustration with Computers					
		t-test for Equality of Means			
		T	df	Sig. (2-tailed)	Mean Difference
Frustration with Computers #116-17	Equal variances assumed	-.496	233	.620	-.04456
	Equal variances not assumed	-.457	128.199	.649	-.04456

Positive Perception: Basic Computer Knowledge, Part 5, Items 18-32

The independent group variables were nurses and medical assistants and the dependent test variable was basic computer knowledge. Tables 29, 30, and 31 provide the data related to medical assistant and nurse perceptions of basic computer knowledge. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated a significantly higher perception of basic computer knowledge perceived by medical assistants compared to nurses $t\ (218) = 2.288$, $p < 0.05$. A total of 75 medical assistants responded with a mean 4.04 knowledge and a total of 145 nurses with a mean 3.82 knowledge. Both medical assistants and nurses responded with a mean greater than three; therefore,

demonstrating a positive perception of their computer knowledge The Bonferroni correction resulted in p = 0.023; therefore, the correction of 0.01 for new level of significance did affect this test in that it lost significance.

Table 29
Group Statistics: MA and Nurse – Basic Computer Knowledge

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Basic Computer Knowledge #18-32	MA	75	4.0364	.63938	.07383
	Nurse	145	3.8179	.68738	.05708

Table 30
Levene's Test: MA and Nurse – Basic Computer Knowledge

		Levene's Test for Equality of Variances	
		F	Sig.
Basic Computer Knowledge #18-32	Equal variances assumed	.013	.910
	Equal variances not assumed		

Table 31
Independent Samples Test: MA and Nurse – Basic Computer Knowledge

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Basic Computer Knowledge #18-32	Equal variances assumed	2.288	218	,023	.21851
	Equal variances not assumed	2.341	159.610	,020	.21851

Positive Perception: Motivation to Transfer Learning, Part 5, Items 33-37

The independent group variable levels were nurses and medical assistants and the dependent test variable was motivation. Tables 32, 33, and 34 provide the data related to

positive perception as relates to motivation to transfer learning. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t*-test for positive perception of basic computer knowledge. The *t-test* indicated no difference in reported motivation to transfer learning between medical assistants and nurses $t\ (235) = 1.738$, $p > 0.05$. Medical assistants (n = 81) responded with a mean 4.24 motivation and nurses (n = 156) responded with a mean 4.11 motivation. Both medical assistants and nurses responded with a mean greater than three; therefore, indicating a positive perception of motivation to transfer learning.

Table 32
Group Statistics: MA and Nurse – Motivation to Transfer Learning

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Motivation to transfer learning #33-37	MA	81	4.2395	.51031	.05670
	Nurse	156	4.1115	.55101	.04412

Table 33
Levene's Test: MA and Nurse- Motivation to Transfer Learning

		Levene's Test for Equality of Variances	
		F	Sig.
Motivation to transfer learning #33-37	Equal variances assumed Equal variances not assumed	.018	.894

Table 34
Independent Samples Test: MA and Nurse – Motivation to Transfer Learning

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Motivation to transfer learning #33-37	Equal variances assumed	1.738	235	.083	.12797
	Equal variances not assumed	1.781	173.379	.077	.12797

Research Question No. 4

What are the differences in the nurse and medical assistant preferences to have WBT rather than commute to the primary campus of the health care organization for training?

Part 1, Discipline, provided the data for the independent group variable: Nurses (LVN and RN) and Medical Assistants. The dependent test variable data were derived from Part 6, Web-based Training Preference: Items 38-43, Employee Support for WBT. The data were collected as ordinal data from a five-point Likert type scale combined by topic to form continuous variables and analyzed by the parametric *t-test*. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. A mean of greater than three on the five-point Likert type scale indicated positive perception.

Preference: Employee Support for WBT, Part 6, Items 38-43

The independent group variable levels were nurses and medical assistants and the dependent test variable was employee support for WBT analyzed by the use of the parametric *t-test*. The results demonstrated the nurses perceived greater positive employee support for WBT than the medical assistants perceived. Upon data entry Items

41 and 42 were reverse coded so all questions were in favor of WBT. Tables 35, 36, and 37 provide the data related to shared use of computers. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. Medical assistants (n = 78) responded with a mean 3.15 for support of WBT and nurses (n = 155) responded with a mean 3.34 for support of WBT. Both medical assistants and nurses responded with a mean greater than three; therefore, indicating a positive perception of employee support for WBT. The *t-test* indicated a significant difference between perceived support for WBT reported by nurses and medical assistants $t\ (231) = -2.310$, $p < 0.05$. The Bonferroni correction resulted in p = 0.022; therefore, the correction of 0.01 for new level of significance did affect this test negating the previous significance. Thus the final outcome demonstrated no significant difference in the perception between nurses and medical assistants in their support for WBT.

Table 35
Group Statistics: MA and Nurse – Employee's Support for WBT

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Employee Support for WBT #38-43	MA	78	3.1496	.57081	.06463
	Nurse	155	3.3419	.61393	.04931

Table 36
Levene's Test: MA and Nurse – Employee's Support for WBT

		Levene's Test for Equality of Variances	
		F	Sig.
Employee Support for WBT #38-43	Equal variances assumed	.629	.429
	Equal variances not assumed		

Table 37
Independent Samples Test: MA and Nurse – Employee's Support for WBT

		t-test for Equality of Means			
		T	df	Sig. (2-tailed)	Mean Difference
Employee Support for WBT #38-43	Equal variances assumed	-2.310	231	.022	-.19236
	Equal variances not assumed	-2.366	164.815	.019	-.19236

Research Question No. 5

What are the differences in the nurse and medical assistant perceptions of their supervisor's support of WBT?

Part 1, Discipline, provided the data for the independent group variable: Nurses (LVN and RN) and Medical Assistants. Part 6, Web-based Training, Items 44-46 collected nurse and medical assistant perception of their supervisor's support for WBT. The data were collected as ordinal data from a five-point Likert type scale combined by topic to form continuous variables and analyzed by the parametric *t-test*. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. A mean of greater than three on the five-point Likert type scale indicated a positive perception.

Supervisor's Support for WBT, Part 6, Items 44-46

The independent group variable levels were nurses and medical assistants and the dependent test variable was supervisor support for WBT analyzed by use of the parametric *t-test*. Item 46 was reverse coded on data entry so all questions were in favor of WBT. Tables 38, 39, and 40 provide the data related to supervisor's support for WBT. The outcome from the Levene's Test of homogenous variances was not significant for

equal variances assumed; therefore, equal variances assumed were used to interpret the *t*-test for positive perception of basic computer knowledge. Medical assistants (n = 78) responded with a mean of 3.69 indicating their supervisor's support and nurses (n = 152) responded with a mean of 3.71. Both the nurses and medical assistants responded with a mean greater than three thus indicating positive perception for supervisor's support of WBT. The *t-test* indicated no significant difference in perceived supervisor support for WBT by nurses and medical assistants $t\ (228) = -\ 0.230$, $p > 0.05$.

Table 38
Group Statistics: MA and Nurse – Supervisor's Support for WBT

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Supervisor Support for WBT #44-46	MA	78	3.6880	.75275	.08523
	Nurse	152	3.7105	.67400	.05467

Table 39
Levene's Test: MA and Nurse – Supervisor's Support for WBT

		Levene's Test for Equality of Variances	
		F	Sig.
Supervisor Support for WBT #44-46	Equal variances assumed Equal variances not assumed	2.338	128

Table 40
Independent Samples Test: MA and Nurse – Supervisor's Support for WBT

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Supervisor Support for WBT #44-46	Equal variances assumed	-.230	228	.818	-.02249
	Equal variances not assumed	-.222	141.202	.825	-.02249

Research Question No. 6

What are the differences in gender and race as related to computer usage, computer knowledge, and preference for WBT?

Part 1, Employee Demographics, collected the data for gender and race. The dependent test variable data were collected in Part 4 (usage), Part 5 (knowledge) and Part 6 (preference).

Gender

Part 1, Employee Demographics, gender data were collected by the participant placing a check mark in the box marked male or female. Frequencies were run to obtain a percentage count of females and males. As demonstrated in Table 41, the study consisted of 93.7% Females (n = 224) and 6.3% males (n = 15).

Table 41
Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	224	93.7	93.7	93.7
	Male	15	6.3	6.3	100.0
	Total	239	100.0	100.0	

Gender Comparison of Computer Usage: Part 4, Items 3-12

The independent group variable levels were male and female. The dependent test variable was computer usage collected in Part 4, Items 3-12. The parametric *t-test* and chi-square were utilized to analyze computer usage as related to gender.

Gender Computer Usage: Hours per Day at Work, Item 3.The independent group variable levels were males and females and the dependent test variable was hours per day typically spent at work. The data were collected by the participant documenting the total number of hours; including fractional hours, per day spent a work. Tables 42, 43, and 44 provide the data related to gender comparison of computer usage for hours per day at work. Males (n = 15) with a mean of 11.50 for hours worked and females (n = 223) with a mean of 8.55 responded. The outcome from the Levene's Test was significant for equal variances; therefore, equal variances not assumed were used to interpret the *t-test*. The *t-test* indicated no significant difference in reported computer usage by males and females t (14.033) = 1.417, p > 0.05.

Table 42
Group Statistics: Gender – Hours Per Day at Work

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Hrs Per Day at Work #3	Male	15	11.5000	8.06669	2.08281
	Female	223	8.5466	1.07367	.07190

Table 43
Levene's Test: Gender – Hours Per Day at Work

		Levene's Test for Equality of Variances	
		F	Sig.
Hrs Per Day at Work #3	Equal variances assumed	49.013	.000
	Equal variances not assumed		

Table 44
Independent Samples Test: Gender – Hours Per Day at Work

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hours Per Day at Work #3	Equal variances assumed	4.979	236	.000	2.95336
	Equal variances not assumed	1.417	14.033	.178	2.95336

Gender Computer Usage: Hours per Day on Computer for Job, Item 4. The independent group variable levels were males and females and the dependent test variable was time per typical work day spent on a computer for job. The data were collected by the participant documenting the total number of hours, including fractional hours, per day spent using the computer for their job. Tables 45, 46, and 47 provide the data related to shared use of computers. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. Males (n = 15) responded with a mean of 5.95 hours compared with females (n = 221) responding with a mean of 6.95 hours. The *t-test* indicated no significant difference in reported hours per day spent on the computer for job between males and females t (234) = -1.794, $p > 0.05$.

Table 45
Group Statistics: Gender – Hours Per Day Spent on Computer

	MA or Nurse	N	Mean	Std. Deviation	Std. Error Mean
Hours Per Day Using Computer #4	Male	15	5.9467	2.85228	.73646
	Female	221	6.9482	2.03465	.13687

Table 46 Levene's Test: Gender – Hours Per Day Spent on Computer			
		Levene's Test for Equality of Variances	
		F	Sig.
Hours Per Day Using Computer #4	Equal variances assumed Equal variances not assumed	3.588	.059

Table 47 Independent Samples Test: Gender – Hours Per Day Spent on Computer					
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hours Per Day Using Computer #4	Equal variances assumed	-1.794	234	.074	-1.00152
	Equal variances not assumed	-1.337	14.963	.201	-1.00152

Gender Computer Usage: Degree of Computer Use, Item 5. Female participants perceived they used the computer a greater percent of the time to carry out their job functions than did the male participants. The independent group variable levels were males and females and the dependent test variable was degree of computer use. The data were collected as ordinal data from a five-point Likert type scale describing degree of computer use as: 5) always, 4) very often, 3) sometimes, 2) rarely, and 1) never. Tables 48, 49, and 50 provide the data related to gender comparison of degree of computer use. A total of 222 females (93.7%) responded with 59 (26.6%) responding not always compared to 163 (73.4%) responding always. A total of 15 males (6.3%) responded with 9 (60.0%) responding not always compared to 6 (40.0%) responding always. Proportionally 86.8% of the females responded with not always compared to 13.2% of

the males; whereas, 96.4% of the females responded with always compared to 3.6% of the males.

The chi-square test indicated a significant difference in proportions among males and females responding with X^2 (1) = 7.67, $p < 0.05$ report of computer usage. Females proportionally responded different from chance in that the expected count was 63.7 for not always as compared to the count of 59; and, expected count 158.3 for always compared to the count of 163. Males proportionally responded different from chance in that the expected count was 4.3 for not always compared to a count of 9; and, 10.7 for always compared to a count of 6. Proportionally the males responded higher than the expected count to not always; whereas, the females responded lower to the expected count. Adversely males responded lower than the expected count to always and females responded higher.

Table 48
Case Processing Summary: Gender – Degree Computer of Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender Degree of Computer Use #5	237	99.2%	2	.8%	239	100.0%

Table 49
Q5Collapse Crosstabulation: Gender – Degree of Computer Use

			Q5Collapse		Total
			Not Always	Always	
Gender	Female	Count	59	163	222
		Expected Count	63.7	158.3	222.0
		% within Gender	26.6%	73.4%	100.0%
		% within Q5Collapse	86.8%	96.4%	93.7%
		% of Total	24.9%	68.8%	93.7%
	Male	Count	9	6	15
		Expected Count	4.3	10.7	15.0
		% within Gender	60.0%	40.0%	100.0%
		% within Q5Collapse	13.2%	3.6%	6.3%
		% of Total	3.8%	2.5%	6.3%
Total		Count	68	169	237
		Expected Count	68.0	169.0	237.0
		% within Gender	28.7%	71.3%	100.0%
		% within Q5Collapse	100.0%	100.0%	100.0%
		% of Total	28.7%	71.3%	100.0%

Table 50
Chi-square Test: Gender – Degree of Computer Use

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sided)
Pearson chi-square	7.672(b)	1	.006		
Continuity Correction (a)	6.125	1	.013		
Likelihood Ratio	6.835	1	.009		
Fisher's Exact Test				.014	.009
N of Valid Cases	237				

a Computed only for a 2x2 table1
b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.30.

Gender Computer Usage: Positive Perception, Items 6-12. The data were collected with a dichotomous yes or no response with a positive perception defined by the yes response and a negative perception defined by the no response. The data were combined as the number of yes responses. The greater the number of yes responses the greater the positive perception of computer usage. The data were then analyzed as a continuous variable comparing the two groups: males and females. The independent group variable levels were males and females and the dependent test variable was the perception of computer

use. Tables 51, 52, and 53 provide the data related to gender comparison of positive perception of computer use. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no significant difference between male and female participants t (237) = -0.237, $p > 0.05$ in terms of positive perception of computer usage. Males (n = 15) with a mean of 4.33 positive perception compared to females (n = 224) with a mean of 4.44 responded.

Table 51
Group Statistics: Gender – Positive Perception of Computer Use

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Positive perception of computer usage #6-12	Male	15	4.3333	1.95180	.50395
	Female	224	4.4375	1.62812	.10878

Table 52
Levene's Test: Gender – Positive Perception of Computer Use

		Levene's Test for Equality of Variances	
		F	Sig.
Positive perception of computer usage #6-12	Equal variances assumed	1.091	.297
	Equal variances not assumed		

Table 53
Independent Samples Test: Gender – Positive Perception of Computer Use

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Positive perception of computer usage #6-12	Equal variances assumed	-.237	237	.813	-.10417
	Equal variances not assumed	-.202	15.333	.843	-.10417

Gender Comparison of Knowledge: Part 5, Items 13-37

The independent group variable levels were males and females. The dependent test variable knowledge was analyzed using the parametric *t-test*. The data were collected as ordinal data from a five-point Likert type scale combined by topic to form continuous variables. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree.

Gender Knowledge: Satisfaction, Items 13-15. The independent group variable levels were males and females and the dependent test variable was satisfaction with computer competence. Tables 54, 55, and 56 provide the data related to gender comparison of satisfaction with computer competence. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no significant difference in satisfaction with computer competence by male and female participants $t\ (231) = 1.447$, $p > 0.05$. Males (n = 14) with a mean of 4.33 satisfaction and females (n = 219) with a mean of 3.98 responded.

Table 54
Group Statistics: Gender – Satisfaction with Computer Competence

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction with computer competence #13-15	Male	14	4.3333	.90582	.24209
	Female	219	3.9772	.89225	.06029

Table 55 Levene's Test: Gender – Satisfaction with Computer Competence			
		Levene's Test for Equality of Variances	
		F	Sig.
Satisfaction with computer competence #13-15	Equal variances assumed Equal variances not assumed	.006	.938

Table 56 Independent Samples Test: Gender – Satisfaction with Computer Competence					
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Satisfaction with computer competence #13-15	Equal variances assumed	1.447	231	.149	.35616
	Equal variances not assumed	1.428	14.659	.174	.35616

Gender Knowledge: Basic Computer Knowledge, Items 18-32. The independent group variable levels were males and females and the dependent test variable was basic computer knowledge. Tables 57, 58, and 59 provide the data related to gender comparison of basic computer knowledge. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. Males (n = 14) with a mean of 4.39 basic computer knowledge and females (n = 206) with a mean of 3.86 responded. The *t-test* outcome indicated that male participants perceived greater basic computer knowledge than did the female participants in the study $t\ (218) = 2.859$, $p < 0.05$. The Bonferroni correction resulted in p = 0.005; therefore, the correction of 0.01 for new level of significance did not affect this test.

Table 57
Group Statistics: Gender – Basic Computer Knowledge

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Basic computer knowledge #18-32	Male	14	4.3857	.60662	.16213
	Female	206	3.8589	.67074	.04673

Table 58
Levene's Test: Gender – Basic Computer Knowledge

		Levene's Test for Equality of Variances	
		F	Sig.
Basic computer knowledge # 18-32	Equal variances assumed Equal variances not assumed	.058	.810

Table 59
Independent Samples Test: Gender – Basic Computer Knowledge

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Basic computer knowledge #18-32	Equal variances assumed	2.859	218	.005	.52681
	Equal variances not assumed	3.122	15.243	.007	.52681

Gender Knowledge: Motivation to Transfer Learning, Items 33-37. The independent group variable levels were males and females and the dependent test variable was motivation. Table 60, 61, and 62 provide the data related to gender comparison of motivation to transfer learning. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no significant difference in average reported motivation

to transfer learning by male and female participants t (235) = - 0.261, $p > 0.05$. Males (n = 15) with a mean of 4.12 motivation and females (n = 222) with a mean of 4.16 motivation responded.

Table 60
Group Statistics: Gender – Motivation to Transfer Learning

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Motivation to transfer learning #33-37	Male	15	4.1200	.45857	.11840
	Female	222	4.1577	.54566	.03662

Table 61
Levene's Test: Gender – Motivation to Transfer Learning

		Levene's Test for Equality of Variances	
		F	Sig.
Motivation to transfer learning #33-37	Equal variances assumed Equal variances not assumed	1.128	.289

Table 62
Independent Samples Test: Gender – Motivation to Transfer Learning

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Motivation to transfer learning #33-37	Equal variances assumed	-.261	235	.794	-.03766
	Equal variances not assumed	-.304	16.797	.765	-.03766

Gender Comparison of Preference: Part 6, Items 38-46

The independent group variable levels were males and females. The dependent test variable was collected in Part 6, Web-based Training Preference: Items 38-43, Employee Support for WBT, and Items 44-46, Supervisor Support for WBT. The data were collected using the five-point Likert type scale combined by topic to form continuous variables and analyzed by the parametric *t-test*. The participant response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree.

Gender Preference: Employee Support for WBT, Items 38-43. The independent group variable levels were males and females and the dependent test variable was employee's support for WBT. Items 41 and 42 were reverse coded on data entry so all questions were in favor of WBT. Tables 63, 64, and 65 provide the data related to gender comparison of employee's support for WBT. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no significant difference in perceived employee's support for WBT by male and female participants $t\ (231) = 0.817$, $p > 0.05$. Males (n = 12) with a mean of 3.42 support and females (n = 221) with a mean of 3.27 support responded.

Table 63
Group Statistics: Gender – Employee's Support for WBT

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Employee support for WBT #38-43	Male	12	3.4167	.57953	.16730
	Female	221	3.2700	.60720	.04084

Table 64
Levene's Test: Gender – Employee's Support for WBT

		Levene's Test for Equality of Variances	
		F	Sig.
Employee support for WBT #38-43	Equal variances assumed Equal variances not assumed	.070	.792

Table 65
Independent Samples Test: Gender – Employee's Support for WBT

		t-test for Equality of Means			
		T	df	Sig. (2-tailed)	Mean Difference
Employee support for WBT #38-43	Equal variances assumed	.817	231	.415	.14668
	Equal variances not assumed	.852	12.348	.411	.14668

Gender Preference: Supervisor Support for WBT, Items 44-46. The independent group variable levels were males and females and the dependent test variable was supervisor's support for WBT. Item 46 was reverse coded on data entry so all questions were in favor of WBT. Tables 66, 67, and 68 provide the data related to gender comparison of the supervisor's support for WBT. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer

knowledge. The *t-test* indicated no difference in the perceived supervisor's support for WBT by male and female participants t (228) = 1.246, $p > 0.05$. Males (n = 14) with a mean of 3.93 support and females (n = 216) with a mean of 3.69 support responded.

Table 66
Group Statistics: Gender - Supervisor's Support for WBT

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Supervisor support for WBT #44-46	Male	14	3.9286	.60169	.16081
	Female	216	3.6883	.70476	.04795

Table 67
Levene's Test: Gender - Supervisor's Support for WBT

		Levene's Test for Equality of Variances	
		F	Sig.
Supervisor support for WBT #44-46	Equal variances assumed Equal variances not assumed	.517	.473

Table 68
Independent Samples Test: Gender – Supervisor's Support for WBT

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Supervisor support for WBT #44-46	Equal variances assumed	1.246	228	.214	.24030
	Equal variances not assumed	1.432	15.407	.172	.24030

In summary, one chi-square and eight *t-test* were utilized to evaluate the data for gender in this section. The Bonferroni correction was calculated for both the chi-square

and the *t-test*. Following the Bonferroni correction, the chi-square test and one *t-test* resulted in a significance related to gender.

Race

Part 1, Employee Demographics race data were collected by the participant placing a check mark in the box appropriate to his/her race. This collection method provided the independent group variable data for race: African American, White, Native American, Asian or Pacific Islander, Hispanic and Other. As shown in Table 69, a total of 238 participants or 99.6% responded to the section for race. Frequencies computed African Americans 14.6%, Whites 76.6%, Native American 0.8%, Hispanic 7.1%, other 0.4%, and missing 0.4%.

Table 69
Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African American	35	14.6	14.7	14.7
	White	183	76.6	76.9	91.6
	Native American	2	.8	.8	92.4
	Hispanic	17	7.1	7.1	99.6
	Other	1	.4	.4	100.0
	Total	238	99.6	100.0	
Missing	System	1	.4		
Total		239	100.0		

Due to the small percentages of various categories of race, the independent group variables were recoded to consist of two groups: Whites 76.6% and People of Color 23.4%. The statistical breakdown of Whites and People of Color is found in Table 70.

The analyses throughout the remainder of this section utilized the groups: Whites and People of Color.

Table 70
Whites or People of Color

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	People of Color	56	23.4	23.4	23.4
	Whites	183	76.6	76.6	100.0
	Total	239	100.0	100.0	

Race Comparison of Usage: Part 4, Items 3-12

The independent group variable levels were People of Color and Whites. The dependent test variable was computer usage (hours per day spent at work, hours per day spent on computer, degree of computer use and positive perception of computer use). The parametric *t-test* and chi-square were utilized to analyze computer usage as relates to race.

Race Computer Usage: Hours per Day at Work, Item. The independent group variable levels were Whites and People of Color and the dependent test variable was hours per day spent at work. Tables 71, 72, and 73 provide the data related to race comparison of hours per day spent at work. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in hours per day spent at work by Whites and People of Color participants $t\ (236) = -\ 0.794$, $p > 0.05$. The results were computed

based on a response of People of Color (n = 55) with a mean of 8.51 hours and Whites (n = 183) with a mean of 8.80 hours per day spent at work.

Table 71
Group Statistics: Race – Hours Per Day Spent at Work

	White or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Hours Per Day Spent at Work #3	People of Color	55	8.5136	1.05235	.14190
	Whites	183	8.7986	2.59571	.19188

Table 72
Levene's Test: Race – Hours Per Day Spent at Work

		Levene's Test for Equality of Variances	
		F	Sig.
Hours Per Day Spent at Work #3	Equal variances Assumed	.750	.388
	Equal variances not assumed		

Table 73
Independent Samples Test: Race – Hours Per Day Spent at Work

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hrs Per Day Spent at Work #3	Equal variances assumed	-.794	236	.428	-.28500
	Equal variances not assumed	-1.194	216.879	.234	-.28500

Race Computer Usage: Hours per Day on Computer for Job, Item 4. The independent group variable levels were Whites and People of Color and the dependent test variable was hours per day spent on the computer for job. Tables 74, 75, and 76 provide the data related to race comparison of hours per day spent on the computer for job. The Levene's

Test proved significant for hours per day spent on the computer for job; therefore, equal variances were not assumed. The *t-test* indicated a significant difference in hours per day spent on the computer for job by Whites and People of Color t (107.925) = 2.329, $p <$ 0.05. The People of Color (n = 54) perceived a greater number of hours spent on the computer per day for job with a mean of 7.40 hours than did the Whites (n = 182) with a mean of 6.73 hours. The Bonferroni correction resulted in p = 0.041; therefore, the correction of 0.01 for new level of significance did affect this test. Thus no significant difference was found perceived between Whites and People of Color for hours per day spent on the computer for their job.

Table 74
Group Statistics: Race – Hours Per Day Spent on Computer

	White or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Hours Per Day on Computer #4	People of Color	54	7.3972	1.72841	.23521
	Whites	182	6.7324	2.18230	.16176

Table 75
Levene's Test: Race – Hours Per Day Spent on Computer

		Levene's Test for Equality of Variances	
		F	Sig.
Hours Per Day on Computer #4	Equal variances assumed Equal variances not assumed	3.818	.052

Table 76
Independent Samples Test: Race – Hours Per Day Spent on Computer

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Hrs Per Day on Computer #4	Equal variances assumed	2.055	234	.041	.66480
	Equal variances not assumed	2.329	107.925	.022	.66480

Race Computer Usage: Degree of Computer Use, Item 5. The independent group variable levels were Whites and People of Color and the dependent test variable was the degree of computer use to carry out job functions. Table 77, 78, and 79 provide the data related to race as relates to degree of computer use. A total of 55 People of Color (23.2%) responded with 14 (25.5%) responding not always compared to 41 (74.5%) responding always. A total of 182 Whites (76.8%) responded with 54 (29.7%) responding not always compared to 128 (70.3%) responding always. Proportionally 20.6% People of Color responded not always compared to 79.4% of the Whites; whereas, 24.3% of the People of Color responded always compared 75.7% of Whites.

The chi-square test indicated no difference in the proportions among the People of Color and Whites in degree of computer use with X^2 (1) = 0.37, $p > 0.05$. People of Color proportionally responded with little difference from chance in that the expected count was 15.8 for not always and the count was 14. Whites responded with minimal difference from chance in that the expected count was 39.2 compared to a count of 41. Proportionally People of Color (20.6%) responded with a lower percentage of not always for degree of computer use compared to Whites (79.4%); whereas, People of Color

(24.3%) responded with a lower percent of always for degree of computer use compared to Whites (75.7%).

Table 77
Case Processing Summary: Race – Degree of Computer Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Whites or People of Color Degree of Computer Use #5	237	99.2%	2	.8%	239	100.0%

Table 78
Q5Collapse Crosstabulation: Race – Degree of Computer Use

			Q5Collapse		Total
			Not Always	Always	
Whites or People of Color	People of Color	Count	14	41	55
		Expected Count	15.8	39.2	55.0
		% within Caucasian or Other	25.5%	74.5%	100.0%
		% within Q5Collapse	20.6%	24.3%	23.2%
		% of Total	5.9%	17.3%	23.2%
	Whites	Count	54	128	182
		Expected Count	*52.2*	129.8	182.0
		% within Caucasian or Other	*29.7%*	70.3%	100.0%
		% within Q5Collapse	79.4%	75.7%	76.8%
		% of Total	22.8%	54.0%	76.8%
Total		Count	68	169	237
		Expected Count	68.0	169.0	237.0
		% within Caucasian or Other	28.7%	71.3%	100.0%
		% within Q5Collapse	100.0%	100.0%	100.0%
		% of Total	28.7%	71/3%	100.0%

Table 79
Chi-square Test: Race – Degree of Computer Use

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sided)
Pearson chi-square	.367(b)	1	.545		
Continuity Correction (a)	.190	1	.663		
Likelihood Ratio	.373	1	.541		
Fisher's Exact Test				.612	.336
Linear-by-Linear Association	.365	1	.546		
N of Valid Cases	237				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.78.

Race Computer Usage: Positive Perception, Items 6-12. The independent group variable levels were Whites and People of Color and the dependent test variable was the positive perception of computer use. The data were collected with a dichotomous yes or no response with a positive perception defined by the yes response and a negative perception defined by the no response. The data were combined as the number of yes responses. The greater the number of yes responses the greater the positive perception of computer usage. The data were then analyzed as a continuous variable comparing the two groups: Whites and People of Color. Tables 80, 81, and 82 provide the data related to race comparison for positive perception of computer usage. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in the positive perception of computer usage by Whites and People of Color participants t (237) = - 0.754, $p > 0.05$. People of Color (n = 56) responded with a mean of 4.29 and Whites (n = 183) with a mean of 4.48.

Table 80
Group Statistics: Race – Positive Perception of Computer Use

	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Positive perception of computer usage #6-12	People of Color	56	4.2857	1.58073	.21123
	Whites	183	4.4754	1.66680	.12321

Table 81 Levene's Test: Race – Positive Perception of Computer Use			
		Levene's Test for Equality of Variances	
		F	Sig.
Positive perception of computer usage #6-12	Equal variances assumed Equal variances not assumed	.458	.499

Table 82 Independent Samples Test: Race – Positive Perception of Computer Use					
		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Positive perception of computer usage #6-12	Equal variances assumed	-.754	237	.452	-.18970
	Equal variances not assumed	-.776	95.455	.440	-.18970

Race Comparison of Knowledge: Part 5, Items 13-37

The independent group variable levels were Whites and People of Color and the dependent test variables were satisfaction with computer competence, basic computer knowledge, and motivation to transfer learning. The data were collected by utilization of ordinal data from a five-point Likert type scale combined by topic to form continuous variables. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. The parametric *t-test* was used to analyze the data.

Race Knowledge: Satisfaction with Computer Competence, Items 13-15. The independent group variable levels were Whites and People of Color and the dependent test variable was satisfaction with computer competence. Tables 83, 84, and 85 provide

the data as related to race comparison of satisfaction with computer competence. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in satisfaction with computer competency by Whites and People of Color participants t (230) = -1.402, $p > 0.05$. The response was computed based on People of Color (n = 54) participants with a mean of 3.46 satisfaction and Whites (n = 178) with a mean of 3.59 for satisfaction with computer competence.

Table 83
Group Statistics: Race – Satisfaction with Computer Competence

	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction with Computer Competence #13-15	People of Color	54	3.4630	.63463	.08636
	Whites	178	3.5944	.59354	.04449

Table 84
Levene's Test: Race - Satisfaction with Computer Competence

		Levene's Test for Equality of Variances	
		F	Sig.
Satisfaction with Computer competence #13-15	Equal variances assumed Equal variances not assumed	.192	.662

Table 85
Independent Samples Test: Race – Satisfaction with Computer Competence

		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Satisfaction with Computer Competence #13-15	Equal variances assumed	-1.402	230	.162	-.13142
	Equal variances not assumed	-1.353	83.107	.108	-.13142

Race Knowledge: Basic Computer Knowledge, Items 18-32. The independent group variable levels were Whites and People of Color and the dependent test variable was basic computer knowledge. Tables 86, 87, and 88 provide the data related to race comparison of basic computer knowledge. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in basic computer knowledge by Whites and People of Color participants t (218) = - 0.073, $p > 0.05$. People of Color (n = 48) responded with a mean of 3.89 basic computer knowledge and Whites (n = 172) responded with a mean of 3.89 basic computer knowledge.

Table 86
Group Statistics: Race – Basic Computer Knowledge

	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Basic Computer Knowledge #33-37	People of Color	48	3.8861	.66311	.09571
	Whites	172	3.8942	.68390	.05215

Table 87 Levene's Test: Race - Basic Computer Knowledge			
		Levene's Test for Equality of Variances	
		F	Sig.
Basic Computer Knowledge #33-37	Equal variances assumed Equal variances not assumed	.348	.556

Table 88 Independent Samples Test: Race – Basic Computer Knowledge					
		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Basic Computer Knowledge #33-37	Equal variances assumed	-.073	218	.942	-.00807
	Equal variances not assumed	-.074	77.176	.941	-.00807

Race Knowledge: Motivation to Transfer Learning, Items 33-37. The independent group variable levels were Whites and People of Color and the dependent test variable was motivation to transfer learning. Tables 89, 90, and 91 provide the data related to race comparison of motivation to transfer learning. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in motivation to transfer learning by Whites and People of Color participants t (235) = 0.472, $p > 0.05$. People of Color (n = 55) responded with a mean of 4.19 motivation and Whites (n = 182) responded with a mean of 4.15 motivation.

Table 89
Group Statistics: Race – Motivation to Transfer Learning

	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Motivation to Transfer Learning #33-37	People of Color	55	4.1855	.50311	.06784
	Whites	182	4.1462	.55140	.04087

Table 90
Levene'sTest: Race – Motivation to Transfer Learning

		Levene's Test for Equality of Variances	
		F	Sig.
Motivation to Transfer Learning #33-37	Equal variances assumed Equal variances not assumed	.259	.611

Table 91
Independent Samples Test: Race – Motivation to Transfer Learning

		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Motivation to Transfer Learning #33-37	Equal variances assumed	.472	235	.637	.03930
	Equal variances not assumed	.496	96.525	.621	.03930

Race Comparison of WBT Preference: Part 6, Items 38-46

The independent group variable levels were Whites and People of Color. The dependent test variable was collected in Part 6, Web-based Training Preference: Items 38-43, Employee Support for WBT, and Items 44-46, Supervisor Support for WBT. The data were collected using the five-point Likert type scale combined by topic to form continuous variables. The participant response options available were: 5) strongly agree,

4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. The data were analyzed by the parametric t-test.

Race Preference: Employee Support for WBT, Items 38-43. Tables 92, 93, and 94 provide the data related to race comparison of employee's support for WBT. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in employee support for WBT by Whites and People of Color participants t (231) = 1.295, $p > 0.05$. The independent group variable levels were Whites and People of Color and the dependent test variable was employee support for WBT preference. People of Color (n = 54) responded with a mean of 3.62 for support and Whites (n = 179) with a mean of 3.52 for support.

Table 92
Group Statistics: Race – Employee's Support for WBT

	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Employee Support for WBT #38-43	People of Color	54	3.6173	.47210	.06425
	Whites	179	3.5214	.47831	.03575

Table 93
Levene's Test: Race – Employee's Support for WBT

		Levene's Test for Equality of Variances	
		F	Sig.
Employee Support for WBT #38-43	Equal variances assumed	.048	.827
	Equal variances not assumed		

Table 94 Independent Samples Test: Race – Employee's Support for WBT					
		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Employee Support for WBT #38-43	Equal variances assumed	1.295	231	.197	.09587
	Equal variances not assumed	1.304	88.383	.916	.09587

Race Preference: Supervisor Support for WBT, Items 44-46. The independent group variable levels were Whites and People of Color and the dependent test variable was supervisor support for WBT preference. Tables 95, 96, and 97 provide the data related to race comparison of supervisor's support for WBT. The outcome from the Levene's Test of homogenous variances was not significant for equal variances assumed; therefore, equal variances assumed were used to interpret the *t-test* for positive perception of basic computer knowledge. The *t-test* indicated no difference in supervisor support for WBT by Whites and People of Color participants t (228) = -0.007, $p > 0.05$. People of Color (n = 55) responded with a mean of 3.29 for support and Whites (n = 175) with a mean of 3.29 for support.

Table 95 Group Statistics: Race – Supervisor's Support for WBT					
	Whites or People of Color	N	Mean	Std. Deviation	Std. Error Mean
Supervisor Support for WBT #44-46	People of Color	55	3.2909	.39573	.05336
	Whites	175	3.2914	.54035	.04085

Table 96 Levene's Test: Race – Supervisor's Support for WBT			
		Levene's Test for Equality of Variances	
		F	Sig.
Supervisor Support for WBT #44-46	Equal variances assumed Equal variances not assumed	2.556	.111

Table 97 Independent Samples Test: Race – Supervisor's Support for WBT					
		t-test for Equality of Means			
		t	*df*	Sig (2-tailed)	Mean Difference
Supervisor Support for WBT #44-46	Equal variances assumed	-.007	228	.995	-.00052
	Equal variances not assumed	-.008	122.746	.994	-.00052

In summary, one chi-square and eight *t-test* were utilized to evaluate the data in this section. The chi-square test resulted in a minimal difference related to gender. No significant difference related to gender was determined by the *t-tests.*

Research Question No. 7

What are the differences in generations as related to the perception of computer usage, computer knowledge, and preference for WBT?

Part 1, Employee Demographics, provided the independent group variable data, year of birth, for the number of participants in the generations as defined by Zemke (2000): Nexters/Millennials (1981-2000), Xers (1961-1980), Baby Boomers (1944-1960), and Veterans (1922-1943). The dependent test variables were computer usage (Part 4), computer knowledge (Part 5) and web-based training preference (Part 6).

Generations

Part 1, Employee Demographics, generation data were collected by the participant placing a check mark in the box appropriate to his/her generation of birth year. The collection of this generational data provided the independent group variable data: Veterans, Baby Boomers, Xers, and Nexters/Millennials and is found in Table 98. A total of 233 participants completed the section for year of birth. Due to the very small percentage of participants in the 1922-1943 Veteran generation (1.3%), the generation groupings were recoded to combine Veterans (Vets) with Boomers ranging from 1922-1960 (29.8%), Xers ranging from 1961-1980 (54%) and Nexters/Millennials ranging from 1981-2000 (13.8%) This recoded data are found in Table 99.

Table 98
Generations: Birth Year by Original Data Grouping

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Veterans 1922-1943	3	1.3	1.3	1.3
	Baby Boomers 1944-1960	68	28.5	29.2	30.5
	Xers 1961-1980	129	54.0	55.4	85.8
	Nexters/Millennials 1981-2000	33	13.8	14.2	100.0
	Total	233	97.5	100.0	
Missing	System	6	2.5		
Total		239	100.0		

Table 99
Generations: Birth Year by Recoded Data Groupings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Vets + Boomers 1922-1960	71	29.7	30.5	30.5
	Xers 1961-1980	129	54.0	55.4	85.8
	Nexters 1981-2000	33	13.8	14.2	100.0
	Total	233	97.5	100.0	
Missing	System	6	2.5		
Total		239	100.0		

Generational Comparison of Computer Usage: Part 4, Items 3-12

The independent group variable was employee demographics as defined by year of birth: Vets plus Boomers, Xers, and Nexters. The dependent test variable was computer usage: hours per day at work, hours per day spent on computer for job, degree of computer use and perception of computer use.

Generational Computer Usage: Hours per Day at Work, Item 3. The independent group variable levels were Vets plus Boomers, Xers, and Nexters and the dependent test variable was hours per day spent at work. The dependent test variable data were collected by asking the participant to document the total number of hours, including fractional hours, per day spent at work. Tables 100, 101, and 102 provide the data related to generational comparison of hours per day spent at work. The One Way Analysis of Variance (ANOVA) demonstrated no difference among the generations in hours per day spent at work, $F(2, 230) = 0.471$, $p = 0.625$. These results were computed based on a response of Vets plus Boomers ($n = 71$) with a mean of 8.66 hours, Xers ($n = 129$) with a mean of 8.85, and Nexters ($n = 33$) with a mean of 8.43. The Eta Squared was 0.004.

Table 100
Test of Homogeneity: Generations - Hours Per Day Spent at Work

	Levine Statistic	*df*1	*df*2	Sig.
Hours Per Day at Work #3	.696	2	230	.500

Table 101 Descriptive: Generations - Hours Per Day Spent at Work					
		N	Mean	Std. Deviation	Std. Error
Hours Per Day at Work #3	Vets + Boomers	71	8.6577	1.43053	.16977
	Xers	129	8.8523	2.95254	.25996
	Nexters	33	8.4318	.75786	.13193
	Total	233	8.7335	2.35136	.15404

Table 102 ANOVA: Generations - Hours Per Day Spent at Work						
		Sum of Squares	df	Mean Square	F	Sig.
Hours Per Day at Work #3	Between Groups	5.232	2	2.616	0.471	0.625
	Within Groups	1277.467	230	5.554		
	Total	1282.699	232			

Generational Computer Usage: Hours per Day on Computer for Job, Item 4. The independent group variable levels were Vets plus Boomers, Xers, and Nexters and the dependent test variable was hours per day spent using a computer for job. The dependent test variable data were collected by asking the participant to document the total number of hours, including fractional hours, per day spent using the computer for their job. Tables 103, 104, and 105 provide the data related to generational comparison of hours per day spent on a computer for job. The Analysis of Variance (ANOVA) demonstrated no differene in the generations for hours per day spent on computer for job, $F(2, 228) = 2.12$, $p = 0.122$. These results were computed based on a response of Vets plus Boomers ($n = 70$) with a mean of 6.50, Xers ($n = 128$) with a mean of 6.94, and Nexters ($n = 33$) with a mean of 7.32. The Eta Squared was 0.018.

Table 103 Test of Homogeneity: Generations – Hours Per Day Spent on Computer				
	Levene Statistic	*df*1	*df*2	Sig.
Hours Per Day Spent on Computer #4	3.686	2	228	.027

Table 104 Descriptive: Generations – Hours Per Day Spent on Computer					
		N	Mean	Std. Deviation	Std. Error
Hours Per Day Spent on Computer #4	Vets + Boomers	70	6.4693	2.39097	.28578
	Xers	128	6.9406	2.03403	.17978
	Nexters	33	7.3242	1.57441	.27407
	Total	231	6.8526	2.10365	.13841

Table 105 ANOVA: Generations – Hours Per Day Spent on Computer						
		Sum of Squares	df	Mean Square	F	Sig.
Hours Per Day Spent on Computer #4	Between Groups	18.618	2	9.309	2.124	.122
	Within Groups	999.211	228	4.383		
	Total	1017.828	230			

Generational Computer Usage: Degree of Computer Use, Item 5. The independent group variable levels were Vets plus Boomers, Xers, and Nexters and the dependent test variable was the degree to which the computer was used to carry out their job. The dependent test variable data were collected by utilization of ordinal data from a five-point Likert type scale describing degree of computer use as: 5) always, 4) very often, 3) sometimes, 2) rarely, and 1) never. Tables 106, 107, and 108 provide the data related to generational comparison of degree of computer use. A total of 71 Vets + Boomers (30.6%) responded with 28 (39.4%) responding not always compared to 43 (60.6%) responding always. Proportionally 128 Xers (55.2%) responded with 34 (26.6%)

responding not always compared to 94 (73.4%) responding always. A total of 33 Nexters (14.2%) responded with 5 (15.2%) responding not always as compared to 28 (84.8%) responding always. The chi-square test was used to analyze the degree of computer use on the job as relates to generations. This chi-square test indicated a significant clear trend toward younger generations reporting always for their degree of using a computer on the job, X^2 (2) = 7.21, p = 0.027. The Nexters proportionally reported the highest use of always (84.8%), followed by the Xers (73.4%) and lastly by the Vets + Boomers (60.6%). Minimal difference was seen in the difference between the expected counts and the actual counts.

Table 106
Case Processing Summary: Generations – Degree of Computer Use

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Vets+Boomers, Xers, Nexters Degree of Computer Use #5	237	99.2%	2	.8%	239	100.0%

Table 107
Q5Collapse Crosstabulation: Generations – Degree of Computer Use

			Q5Collapse		Total
			Not Always	Always	
Vets+Boomers, Xers, Nexters	Vets+ Boomers	Count	28	43	71
		Expected Count	20.5	50.5	71.0
		% within Vets+Boomers, Xers, Nexters	39.4%	60.6%	100.0%
		% within Q5Collapse	41.8%	26.1%	30.6%
		% of Total	12.1%	18.5%	30.6%
	Xers	Count	34	94	128
		Expected Count	37.0	91.0	128.0
		% within Vets+Boomers, Xers, Nexters	26.6%	73.4%	100.0%
		% within Q5Collapse	50.7%	57.0%	55.2%
		% of Total	14.7%	40.5%	55.2%
	Nexters	Count	5	28	33
		Expected Count	9.5	23.5	33.0
		% within Vets+Boomers, Xers, Nexters	15.2%	84.8%	100.0%
		% within Q5Collapse	7.5%	17.0%	14.2%
		% of Total	2.2%	12.1%	14.2%
Total		Count	67	165	232
		Expected Count	67.0	165.0	232.0
		% within Vets+Boomers, Xers, Nexters	28.9%	71.1%	100.0%
		% within Q5Collapse	100.0%	100.0%	100.0%
		% of Total	28.9%	71.1%	100.0%

Table 108
Chi-square Test: Generations – Degree of Computer Use

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	7.215(a)	2	.027
Likelihood Ratio	7.402	2	.025
Linear-by-Linear Association	7.170	1	.007
N of Valid Cases	232		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.53.

Generational Computer Usage: Positive Perception, Items 6-12. The independent group variable levels were Vets plus Boomers, Xers, and Nexters and the dependent test variable was the positive perception of computer use. The dependent test variable data were collected with a dichotomous yes or no response with a positive perception defined

by the yes response and a negative perception defined by the no response. The data were combined as the number of yes responses. The greater the number of yes responses the greater the positive perception of computer usage. The data were then analyzed as a continuous variable comparing the three groups, Vets + Boomers, Xers, and Nexters. Tables 109, 110, and 111 provide the date related to generational comparison of positive perception of computer usage. The Analysis of Variance (ANOVA) for positive perception of computer usage demonstrated no significant difference between the generations $F(2, 230) = 1.39$, $p > 0.252$. Vets + Boomers ($n = 71$) responded with a mean of 4.18, Xers ($n = 129$) with a mean of 4.58 and Nexters ($n = 33$) with a mean of 4.39. The Eta Squared was 0.012.

Table 109
Test of Homogeneity: Generations – Positive Perception of Computer Use

	Levene Statistic	*df*1	*df*2	Sig.
Positive perception of computer use #6-12	.633	2	230	.532

Table 110
Descriptive: Generations – Positive Perception of Computer Use

		N	Mean	Std. Deviation	Std. Error
Positive perception of computer use #6-12	Vets + Boomers	71	4.1831	1.64151	.19481
	Xers	129	4.5814	1.59930	.14081
	Nexters	33	4.3939	1.69447	.29497
	Total	233	4.4335	1.62844	.10668

Table 111
ANOVA: Generations – Positive Perception of Computer Use

		Sum of Squares	df	Mean Square	F	Sig.
Positive perception of computer use #6-12	Between Groups	7.325	2	3.663	1.386	.252
	Within Groups	607.894	230	2.643		
	Total	615.219	232			

Generational Knowledge: Part 5, Items 13-37

The independent group variables were Vets + Boomers, Xers, and Nexters. The dependent test variables were satisfaction with computer competence, frustration with computers, basic computer knowledge, and motivation to transfer learning. The dependent test variable data were collected in Part 5, Items 13-37 by utilization of ordinal data from a five-point Likert type scale combined by topic to form continuous variables. The response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. The Analysis of Variance (ANOVA), Post Hoc Turkey HSD and Homogeneous Subsets were utilized to analyze the data.

Generational Knowledge: Satisfaction, Items 13-15.The independent group variable levels were Vets + Boomers, Xers, and Nexters and the dependent test variable was knowledge as relates to satisfaction with computer competence. Tables 112, 113, and 114 provide the data related to generational comparison of satisfaction with computer competence. The Analysis of Variance (ANOVA) for satisfaction with computer competence demonstrated a significant difference $F(2, 225) = 15.06$, $p < 0.05$ indicating a trend with the highest satisfaction by Nexters ($n = 33$, $M = 4.37$) followed by Xers ($n = 127$, $M = 4.12$) with the Vets + Boomers ($n = 68$, $M = 3.53$) lagging behind. The Eta

Squared was 0.118. The Bonferroni correction resulted in p = 0.001; therefore, the correction of 0.01 for new level of significance did not affect this test.

Table 112
Test of Homogeneity: Generations - Satisfaction with Computer

	Levene Statistic	*df*1	*df*2	Sig.
Satisfaction with computer competence Items #13-15	5.518	2	225	.005

Table 113
Descriptive: Generations – Satisfaction with Computer

		N	Mean	Std. Deviation	Std. Error
Satisfaction with computer competence Items #13-15	Vets + Boomers	68	3.5294	.97775	.11857
	Xers	127	4.1234	.82915	.07357
	Nexters	33	4.3737	.56370	.09813
	Total	228	3.9825	.89633	.05936

Table 114
ANOVA: Generations – Satisfaction with Computer

		Sum of Squares	df	Mean Square	F	Sig.
Satisfaction with computer competence Items #13-15	Between Groups	21.531	2	10.765	15.059	.001
	Within Groups	160.844	225	.715		
	Total	182.374	227			

Post Hoc Tests shown in Table 115 were computed to analyze which generational groups were significantly different (Norusis, p. 317). Post Hoc Tukey HSD Test outcomes demonstrated significant differences when Vets + Boomers were compared to both Xers and Nexters. However, no significant difference was found when Xers were compared to Nexters.

Table 115
Turkey HSD: Generations – Multiple Comparisons

Dependent Variable	(1) Vet + Boomers Xers, Nexters	(J) Vet + Boomers Xers, Nexters	Mean Difference (I-J)	Std. Error	Sig.
Satisfaction with computer competence #13-15	Vets + Boomers	Xers	-.59395*	.12705	.000
		Nexters	-.84433*	.17937	.000
	Xers	Vets + Boomers	.59395*	.12705	.000
		Nexters	-.25038	.16520	.286
	Nexters	Vets + Boomers	.84433*	.17937	.000
		Xers	.25038	.16520	.286

* The mean difference is significant at the 0.05 level.

Generational Knowledge: Frustration, Items 16-17. The independent group variables were Vets + Boomers, Xers, and Nexters and the dependent test variable was frustration with computers at work. Tables 116, 117, and 118 provided data related to generational comparison of knowledge as related to frustration with computers at work. The Levene's Test and Analysis of Variance (ANOVA) for frustration with computers at work demonstrated no significant difference $F(2, 227) = 1.10$, $p > 0.05$. The frustration component demonstrated lots of variability in the way people of generations answered thus no mean significance. Vets + Boomers ($n = 68$) responded with a mean of 2.90, Xers ($n = 129$) with a mean of 2.92 and Nexters ($n = 33$) with a mean of 2.74. The Eta Squared was 0.010.

Table 116
Test of Homogeneity: Generations – Frustration with Computer

	Levene Statistic	*df*1	*df*2	Sig.
Frustration with Computers Items #16-17	.676	2	227	.509

Table 117
Descriptive: Generations – Frustration with Computer

		N	Mean	Std. Deviation	Std. Error
Frustration with computer Items #16-17	Vets + Boomers	68	2.9044	.60629	.07352
	Xers	129	2.9225	.63261	.05570
	Nexters	33	2.7424	.66287	.11539
	Total	230	2.8913	.62963	.04152

Table 118
ANOVA: Generations – Frustration with Computer

		Sum of Squares	df	Mean Square	F	Sig.
Frustration with computer Items #16-17	Between Groups	.869	2	.434	1.096	.336
	Within Groups	89.914	227	.396		
	Total	90.783	229			

Generational Knowledge: Basic Computer Knowledge, Items 18-32. The independent group variables were Vets + Boomers, Xers, and Nexters and the dependent test variable was basic computer knowledge. Tables 119, 120, and 121 provide the data related to generational comparison of knowledge as related to basic computer knowledge. The Levene's Test and the Analysis of Variance (ANOVA) for basic computer knowledge demonstrated a significant difference $F(2, 212) = 16.07$, $p < 0.05$ indicating a trend with greater perceived basic computer knowledge by Nexters ($n = 31$, $M = 4.37$) followed by Xers ($n = 119$, $M = 3.90$), with Vets + Boomers ($n = 65$, $M = 3.60$) lagging behind. The Eta Squared was 0.132. The Bonferroni correction resulted in $p = 0.000$; therefore, the Bonferroni correction of 0.01 for new level of significance did not affect this test.

Table 119 Test of Homogeneity: Generations - Basic Computer Knowledge				
	Levene Statistic	*df*1	*df*2	Sig.
Basic computer knowledge #18-32	.997	2	212	.371

Table 120 Descriptive: Generations - Basic Computer Knowledge					
		N	Mean	Std. Deviation	Std. Error
Basic computer knowledge #18-32	Vets + Boomers	65	3.5979	.65436	.08116
	Xers	119	3.8964	.64605	.05922
	Nexters	31	4.3742	.50293	.09033
	Total	215	3.8750	.67329	.04592

Table 121 ANOVA: Generations – Basic Computer Knowledge						
		Sum of Squares	df	Mean Square	F	Sig.
Basic computer knowledge #18-32	Between Groups	12.769	2	6.384	16.066	.000
	Within Groups	84.243	212	.397		
	Total	97.012	214			

Post Hoc Tests were computed to analyze which generational groups were significantly different (Norusis, 2002, p. 317). Post Hoc Tukey HSD Test outcomes in Table 122 demonstrated significant differences when Veterans plus Boomers were compared to Xers and Nexters, when Xers were compared to Veterans + Boomers and Nexters, and when Nexters were compared to Veterans + Boomers and Xers.

Table 122
Turkey HSD Multiple Comparisons: Generations – Basic Computer Knowledge

Dependent Variable	(1) Vet + Boomers Xers, Nexters	(J) Vet + Boomers Xers, Nexters	Mean Difference (I-J)	Std. Error	Sig.
Basic computer knowledge #18-32	Vets + Boomers	Xers	-.29841*	.09722	.007
		Nexters	-.77624*	.13759	.000
	Xers	Vets + Boomers	.29841*	.09722	.007
		Nexters	-.47784*	.12711	.001
	Nexters	Vets + Boomers	.77624*	.13759	.000
		Xers	.47784*	.12711	.001

* The mean difference is significant at the 0.05 level.

Generational Knowledge: Motivation to Transfer Learning, Items 33-37. Tables 123, 124, and 125 provide the data related to generational comparison of knowledge as related to motivation to transfer learning. The Levene's Test and the Analysis of Variance (ANOVA) for motivation to transfer learning demonstrated no significant difference $F(2, 229) = 0.097$, $p > 0.05$. The independent group variables were Vets + Boomers, Xers, and Nexters and the dependent test variable was motivation to transfer learning. Vets + Boomers (n = 71) responded with a mean of 4.12, Xers (n = 128) with a mean of 4.15 and Nexters (n = 33) with a mean of 4.16. The Eta Squared was 0.001.

Table 123
Test of Homogeneity of Variances
Generations: Motivation to Transfer Learning

	Levene Statistic	*df*1	*df*2	Sig.
Motivation to transfer learning	1.257	2	229	.287

Table 124
Descriptive: Generations – Motivation to Transfer Learning

		N	Mean	Std. Deviation	Std. Error
Motivation to transfer learning #33-37	Vets + Boomers	71	4.1183	.49751	.05904
	Xers	128	4.1500	.55444	.04901
	Nexters	33	4.1576	.54258	.09445
	Total	232	4.1414	.53389	.03505

Table 125
ANOVA: Generations – Motivation to Transfer Learning

		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer learning #33-37	Between Groups	.056	2	.028	.097	.907
	Within Groups	65.787	229	.287		
	Total	65.843	231			

Generational Comparison of WBT Preference: Part 6, Items 38-46

The independent group variables were Veterans + Boomers, Xers and Nexters. The dependent test variable was collected in Part 6, Web-based Training Preference: Items 38-43, Employee Support for WBT, and Items 44-46, Supervisor Support for WBT. The data were collected using the five-point Likert type scale combined by topic to form continuous variables. The participant response options available were: 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, and 1) strongly disagree. The Analysis of Variance (ANOVA) was utilized to analyze the data.

Generational Preference: Employee Support for WBT, Items 38-43. The independent group variables were Veterans + Boomers, Xers and Nexters and the dependent test variable was employee support for WBT preference Tables 126, 127, and 128 provide the data related to generational comparison of preference of employee's support for WBT.

The Levene's Test and the Analysis of Variance (ANOVA) for employee support for WBT preference demonstrated no significant difference between the generations F (2, 225) = 1.79, p > 0.05. Veterans + Boomers (n = 69) respond with a mean of 3.17, Xers (n = 127) with a mean of 3.33, and Nexters (n = 32) with a mean of 3.21. The Eta Squared was 0.016.

Table 126
Test of Homogeneity: Generations – Employee's Support for WBT

	Levene Statistic	*df*1	*df*2	Sig.
Employee Support for WBT	.219	2	225	.804

Table 127
Descriptive: Generations – Employee's Support for WBT

		N	Mean	Std. Deviation	Std. Error
Employee support for WBT #38-43	Vets + Boomers	69	3.1715	.60091	.07234
	Xers	127	3.3346	.59817	.05308
	Nexters	32	3.2135	.62966	.11131
	Total	228	3.2683	.60552	.04010

Table 128
ANOVA: Generations – Employee's Support for WBT

		Sum of Squares	df	Mean Square	F	Sig.
Employee support for WBT #38-43	Between Groups	1.302	2	.651	1.787	.170
	Within Groups	81.928	225	.364		
	Total	83.229	227			

Generational Preference: Supervisor Support for WBT, Items 44-46. The independent group variables were Veterans + Boomers, Xers and Nexters and the dependent test variable was supervisor support for WBT preference. Tables 129, 130 and 131 provide the data related to generational comparison of preference for supervisor support for WBT. The Levene's Test and the Analysis of Variance (ANOVA) for supervisor support for WBT preference demonstrated no significant difference between the generations $F(2, 222) = 0.956$, $p > 0.05$. Veterans + Boomers ($n = 69$) responded with a mean of 3.59, Xers ($n = 124$) with a mean of 3.74, and Nexters ($n = 32$) with a mean of 3.70. The Eta Squared was 0.009.

Table 129
Test of Homogeneity: Generations – Supervisor's Support for WBT

	Levene Statistic	*df*1	*df*2	Sig.
Supervisor Support for WBT	.270	2	222	.764

Table 130
Descriptive: Generations – Supervisor's Support for WBT

		N	Mean	Std. Deviation	Std. Error
Supervisor support for WBT #44-46	Vets + Boomers	69	3.5942	.66142	.07963
	Xers	124	3.7392	.71323	.06405
	Nexters	32	3.6979	.72517	.12819
	Total	225	3.6889	.69935	.04662

Table 131
ANOVA: Generations – Supervisor's Support for WBT

		Sum of Squares	*df*	Mean Square	F	Sig.
Supervisor support for WBT #44-46	Between Groups	.936	2	.468	.956	.386
	Within Groups	108.620	222	.489		
	Total	109.556	224			

Research Question No. 8

What individual and environmental factors influence nurse and medical assistant motivation to transfer learning?

This research question was developed to assess the relationship between knowledge and perception about computers (including satisfaction with computer competence and basic computer knowledge) and motivation to transfer learning in a WBT environment. Additionally, the research question was to encourage the evaluation of the relationship between perceived support for WBT and motivation to transfer learning. Motivation to transfer learning data was collected in Part 5, Computer Knowledge. Regression analysis, correlation matrix and ANOVA were used to evaluate the multiple order sets.

Positive Perceptions, Satisfaction, and Basic Knowledge

A regression analysis was run using Motivation to Transfer Learning as the dependent variable. The independent variables were computer usage (Items 6-12), satisfaction with computer competence (Items 13-15), and basic computer knowledge (Items 18-32). Variables were summed across the multiple items creating continuous variables. The value of R^2 was 0.15 (adjusted R^2 was 0.14), a value that was significantly

different from zero, F (3, 214) = 12.53, $MS_{residual}$ = 0.26, p = 0.000. The standard error of the estimate was 0.51. This significance indicated that motivation to transfer learning was increased when the participant responded higher on the Likert type scale indicating increased basic computer knowledge. Basic computer knowledge demonstrated an outcome of t = 5.3 with p = 0.000 and was the only independent variable of the three that was significant. The VIF and tolerance fell well within acceptable levels and the correlations between individual predictor variables were also well below problematic levels. Table 132 provides the Correlation Matrix.

Table 132
Correlation Matrix: Motivation to Transfer Learning
Satisfaction, Computer Usage, Basic Computer Knowledge

		Motivation to transfer learning	Satisfaction with Computer Competence Items 13-15	Positive Perception of Computer Usage Items 6-12	Basic Computer Knowledge Items 18-32
Motivation to transfer learning	Pearson Correlation	1	.187	.155	.383
	Sig. (2-tailed)		.004**	.017*	.000**
	N	237	232	237	220
Satisfaction with Computer Competence Items 13-15	Pearson Correlation	.187	1	.248	.628
	Sig. (2-tailed)	.004**		.000**	.000**
	N	232	233	233	218
Positive Perception of Computer Usage Items 6-12	Pearson Correlation	.155	.248	1	.403
	Sig. (2-tailed)	.017*	.000**		.000**
	N	237	233	239	220
Basic Computer Knowledge Items 18-32	Pearson Correlation	.383	.628	.403	1
	Sig. (2-tailed)	.000**	.000**	.000**	
	N	220	218	220	220

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Computer Usage, Supervisor and Employee Support for WBT

A Regression Analysis was run using Motivation to Transfer Learning as the dependent variable. The independent variables were computer usage (Items 6-12), supervisor support for WBT (Items 44-46), and employee support for WBT (Items 38-43). Variables were summed across multiple items creating continuous variables. The value of R^2 was 0.08 (adjusted R^2 was 0.06), a value that was significant, F (4, 214) = 4.52, $MS_{residual}$ = 0.28, p = 0.002. The standard error of the estimated was 0.53. One of the three relationships indicated a value that was significantly different from zero. Motivation to transfer learning was increased when the participant perceived positive supervisor support for WBT t = 2.9 with p = 0.02 thus indicating significance. The VIF and tolerance fell well within acceptable levels and the correlations between individual predictor variables were also well below problematic levels. Table 133 provides the Correlation Matrix.

Table 133
Correlation Matrix: Motivation to Transfer Learning
Computer Usage, Employee's Support, Supervisor's Support

		Motivation to transfer learning	Positive Perception of Computer Usage Items 6-12	Employee Support for WBT Items 38-43	Supervisor Support for WBT Items 44-46
Motivation to transfer learning	Pearson Correlation	1	.155	-.011	.184
	Sig. (2-tailed)		.017*	.872	.005**
	N	237	237	232	229
Positive Perception of Computer Usage Items 6-12	Pearson Correlation	.155	1	.162	.043
	Sig. (2-tailed)	.017*		.013*	.518
	N	237	239	233	230
Employee Support for WBT Items 38-43	Pearson Correlation	-.011	.162	1	.312
	Sig. (2-tailed)	.872	.013*		.000**
	N	232	233	233	225
Supervisor Support for WBT Items 44-46	Pearson Correlation	.184	.043*	.312	1
	Sig. (2-tailed)	.005**	.518	.000**	
	N	229	239	225	230

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Discipline, Race, and Generation

ANOVA demonstrated significance at the intercept for generations and discipline (nurses and medical assistants). Descriptive statistics showed a slight trend indicating an increase in perceived motivation to transfer learning. This increase reflected Nexters indicated a greater perception of motivation to transfer learning than did Xers with Vets + Boomers showing the least increase in perception of motivation to transfer learning. Also a difference was noted between medical assistants and nurses with medical assistants showing a slight increased perception to transfer learning. No significance was recognized due to race. Table 134 provides the Levene's Test and Table 135 the ANOVA.

Table 134
Levene's Test of Homogeneity: Motivation to Transfer Learning

	Levene Statistic	*df*1	*df*2	Sig.
Motivation to Transfer Learning	1.069	11	220	.387

Table 135
ANOVA: Motivation to Transfer Learning

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial ETA Squared	Noncent. Parameter	Observed Power
Corrected Model	1.813	11	.165	.566	.85	.028	6.228	.307
Intercept	1611.841	1	1611.841	5538.094	.000	.962	5538.094	1.000
Generations*	.100	2	.050	.172	.842	.002	.343	.076
MA or Nurse	.781	1	.781	2.682	.103	.102	2.682	.371
Race	.004	1	.004	.014	.905	.000	.014	.052
Generations* MA or Nurse	.400	2	.200	.687	.504	.006	1.375	.165
Generations* Race	.193	2	.096	.332	.718	.003	.664	.103
MA or Nurse* Race	.094	1	..094	.322	.571	.001	.322	.087
Generations* Ma or Nurse* Race	.161	2	.080	.276	.759	.003	.553	.093
Error	64.030	220	291					
Total	4044.880	232						
Corrected Total	65.843	231						

a Computed using alpha - .05
b R Squared = .28 (Adjusted R Squared = -.021)

Research Question No. 9

What perceived strengths, weaknesses, opportunities, and threats (SWOT) regarding a WBT program are reported by nurses and medical assistants?

Part 7 consisted of a SWOT assessment utilized to collect the descriptive survey data. The nurses and medical assistants shared knowledge and behaviors common to the

culture of the health care organization they were employed. The researcher used a semi-structured interview instrument seeking short narrative answers to open-ended questions.

This complex analysis began by transcribing all the responses into an Excel© spreadsheet which allowed coding and sorting and recoding and resorting of the data. To facilitate individual analysis of each question, a separate tab for each of the four questions was created in the Excel© spreadsheet. In preparation for the open coding, the line items were divided into sections of ten items per group and synthesized into common or repeating code themes among the groups. According to Guba and Lincoln (1985) it is necessary to synthesize the data into emerging themes relevant to the study.

A total of 239 participants responded out of 285 participants surveyed. Not all participants answered all four of the descriptive questions. Table 136 provides the breakdown of percentages responding per question. Out of a possible 956 responses a total of 780 (82%) responded to the descriptive questions.

Table 136
Descriptive Responses Per Question

Question	Surveys Received	Blank Questions	Percent Blank Per Question	Responded to Questions	Percent Total Response
47	239	27	11%	212	89%
48	239	30	13%	209	87%
49	239	58	24%	181	76%
50	239	61	26%	178	74%
	956	176	18%	780	82%

The researcher focused on the emergence of coding themes which specifically assessed nurse and medical assistant perceptions of WBT. Merriam (1998) wrote

"Informed by the study's purpose, the investigator's orientation and knowledge and the meanings are made explicit by the participants themselves" (p. 179). Thus, recognizing the process of coding and creating categories the researcher focused on the purpose of the study and research questions when reading and analyzing the data. The data were drilled down and the themes were analyzed to explain and develop an understanding of the participant's perception of their strengths, weaknesses, opportunities and threats toward WBT. After each question was thoroughly synthesized it was determined that themes congruent with parts of the quantitative survey emerged. Hence, according to Creswell et al. (2004), began the integration of the quantitative and descriptive date. This was the focus on the final exploration of the themes as they were synthesized into categories. With continued drilling down many of the primary category themes were synthesized into subcategories.

Strengths: Item No. 47

List one strength you see in receiving education through a WBT program.

Of the 239 participants 1.3% (n = 3) responded they saw no strengths (none or na) and 11.3% (n = 27) left this question blank. The remaining 87.4% (n = 209) responses were synthesized into coded categories. In the SWOT descriptive analysis, 5% of the participants (n = 12) responded identifying access as a strength. The descriptive coding themes (n = 18, 7.5%) of the participant's responses supported transfer of learning into their work applications thus supported motivation to transfer learning. The analysis identified 171 of the participants (71.5%) responses were coded into categories identifying WBT preference. Of the responses received, only 3.3% (n = 8) were coded

into a category Other/Miscellaneous as they were leftover and could not be grouped with other categories. Table 137 gives a breakdown of the participant responses and themes corresponding with the descriptive survey.

Table 137
Strengths: Item No.47

Category	Subcategory	Responses	Percent
Part 3: Access		12	5.0%
Part 5: Knowledge		18	7.5%
Part 6: WBT Preference	Prefers WTB over classroom	5	2.1%
	Prefer to work independently and at my own pace	106	44.3%
	Takes more time than classroom	1	0.5%
	Saves time	41	17.2%
	No travel from home office	13	5.4%
	Able to review work	5	2.0%
Other/Miscellaneous	Leftovers	8	3.3%
No Strengths	None or na response	3	1.2%
Left question blank		27	11.3%
Total Responding		239	100.0%

Weaknesses: Item No. 48

List one weakness you see in receiving the education through a WBT program.

Of the 239 participants, 5.4% (n = 13) responded they saw no weaknesses (none or na) and 12.6% (n = 30) left this question blank. The remaining 82% (n = 196) participant responses were synthesized into coded categories. In the SWOT descriptive analysis, 4.2% (n = 10) of the participants responded identifying access as a weakness. Of these participants, 2.1 % (n = 5) responded indicating computer availability was a weaknesses, whereas, 2.1% (n = 5) responded identifying weaknesses such as system crashes, web down, slow computers and computer freezes. The descriptive participant responses were analyzed searching for knowledge themes. Descriptive analysis revealed

0.4% (n = 1) satisfaction with increased web knowledge and 1.3% (n = 3) frustration with computer skills. The participant responses were analyzed searching for WBT preference themes. Descriptive analysis revealed 72.4% of the participants (n = 173) responded resulting in the drilling down of five subcategories of WBT preferences. Of the participant responses received, 3.7% (n = 9) were coded into a category Other/Miscellaneous as they were leftover and could not be grouped with other categories. Table 138 gives a breakdown of the participant responses and themes corresponding with the descriptive survey.

Table 138
Weaknesses: Item 48

Category	Subcategory	Responses	Percent
Part 3: Access	Individual, Shared, Location	5	2.1%
	Technology challenges	5	2.1%
Part 5: Knowledge	Satisfaction – Increase knowledge	1	0.4%
	Frustration – Skills	3	1.3%
Part 6: WBT Preference	Face-to-face interaction with instructor is missing	124	51.9%
	Rely on the instructor	10	4.2%
	Hands on	8	3.3%
	Finding unscheduled time	25	10.5%
	Procrastination	6	2.5%
Other/Miscellaneous	Leftovers	9	3.7%
No Weaknesses		13	5.4%
Left question blank		30	12.6%
Total Responding		239	100%

Opportunities: Item No. 49

List one opportunity you could benefit from by having WBT program.

Of the 239 participants, 3.4% (n = 8) responded they saw no opportunities (none or na) and 24.3% (n = 58) left this question blank. The remaining 72.3% (n = 173)

responses were synthesized into coded categories. In the SWOT descriptive analysis, 4.6% (n = 11) participants responded identifying access as an opportunity. This category included such responses as always available, able to do at work, available when you need it, and can train at home. Participants responded 22.6% (n = 54) supporting knowledge as an opportunity. This category was further drilled down into subcategories including continuing education, general learning and computer knowledge supporting motivation to transfer learning (knowledge) into the work place and frustration. WBT preference had 42.6% respond (n = 102) with subcategories including: WBT over classroom, preference to work independently, time saving, face-to-face as important, no travel from home clinic and a subcategory for miscellaneous reasons WBT preferred. Of the participant responses received, 2.5% (n = 6) were coded into a category Other/Miscellaneous as they were leftover and could not be grouped with other categories. Table 139 gives a breakdown of the participant responses and themes corresponding with the descriptive survey.

Table 139
Opportunities: Item No. 49

Category	Subcategory	Responses	Percent
Part 3: Access		11	4.6%
Part 5: Knowledge	Motivation to transfer continuing education (CE)	7	2.9%
	Motivation to transfer general learning	28	11.7%
	Motivation to transfer computer knowledge	18	7.5%
	Frustration	1	0.4%
Part 6: WBT Preference	WBT over classroom	24	10.0%
	Prefer to work independently and/or at my own pace	39	16.3%
	Time saving	15	6.3%
	Face-to-face is important	1	0.4%
	No travel from home clinic site	9	3.8%
	Miscellaneous reasons prefers WBT	14	5.9%
Other/Miscellaneous	Leftovers	6	2.5%
No Opportunities		8	3.4%
Left question blank		58	24.3%
Total Responding		239	100.0%

Threats: Item No. 50

List one threat you see as a challenge to a WBT program.

Of the 239 participants, 18.4% (n = 44) responded they saw no threats (none or na) and 25.5% (n = 61) left this question blank. The remaining 56.1% (n = 134) responses were synthesized into coded categories. In the SWOT descriptive analysis, 5.9% (n = 14) of the participants responded identifying access as a threat listing network instability (crashes, viruses, malfunctions), time and limited availability of computers. Participants responded 7.1% (n = 17) listing various computer frustrations as barriers to computer knowledge. WBT preference had 36.4% respond (n = 87) with subcategories including: face-to-face or hands-on training, finding unscheduled time, procrastination, and cheating. Of the participant responses received, 6.7% (n = 16) were coded into a category Other/Miscellaneous as they were leftover and could not be grouped with other categories. Table 140 gives a breakdown of the participant responses and themes corresponding with the descriptive survey.

Table 140
Threats: Item No. 50

Category	Subcategory	Responses	Percent
Part 3: Access		14	5.9%
Part 5: Knowledge	Frustration	17	7.1%
Part 6: WBT Preference	Face-to-face or hands-on training	50	20.9%
	Finding unscheduled time	25	10.5%
	Procrastination	8	3.3%
	Cheating	4	1.7%
Other/Miscellaneous	Leftovers	16	6.7%
No Threats		44	18.4%
Left question blank		61	25.5%
Total Responding		239	100.0%

Chapter Summary

This chapter included the statistical analyses of the perceptions of nurses and medical assistants toward an expanded WBT program in physician clinics. The research was conducted in a case study format which utilized a mixed methodology approach combining quantitative and descriptive paradigms. SPSS® was used to compute the quantitative analysis. The descriptive data were drilled down through the emergence of coding themes. The accessible survey population of participants consisted of 285 nurses and medical assistants working in decentralized clinics within the health care organization. The final research study sample consisted of a total of 239 nurses and medical assistants who returned their surveys. This was an 83.9% participant response rate.

The CWBTNA was the 50-item survey instrument utilized to collect the data. Quantitative data were analyzed using SPSS® which generated *t-test*, Analysis of Variance (ANOVA), chi-square, Regression Analysis, Cronbach's Alpha, and Correlation. The descriptive data were collected by analyzing the perceived strengths, weaknesses, opportunities and threats by use of the SWOT Analysis.

A combination of six chi-squares, ten ANOVAs, and 25 *t-test* were ran on the data collected. The Bonferroni Correction was used to control for overall Type I error rate (α) across comparisons in independent variable subgroups (MA and Nurse, Generations, Gender and Race). Seven *t-test* demonstrated significance and of these three lost significance due to the Bonferroni Correction. Two chi-square test demonstrated

significance and were not affected by the Bonferroni adjustment. Three ANOVAs demonstrated significance and none were affected by the Bonferroni Correction.

The SWOT analysis solicited short narrative answers to open-ended questions. All responses were transcribed into an Excel© spreadsheet which allowed coding and sorting. Of the 239 participants responding, 82% of the four descriptive questions in each instrument received responses. The data were drilled down into coding themes. Descriptive themes consistent with parts of the qualitative survey emerged. This was the focus on the final exploration of themes as they were synthesized into descriptive categories.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes a summary of a case study limited to licensed nurses and unlicensed medical assistants working in clinics in Texas. These clinics were part of one faith-based health care organization representing some 36 specialties and over 50 clinics serving north central, east and northeast Texas. All the clinics had full accreditation by The Joint Commission. Included in this summary will be a review of the problem, purpose, significance, literature review, research findings, and recommendations for future research. Additionally included is a section on theory.

Problem

Nurses and medical assistants located at decentralized clinics throughout north central, east and northeast Texas created a challenge for training and development in the delivery of new employee orientation, clinic orientation, mandatory ongoing system education and clinic specific updates. On occasions employees hired on at times other than the traditional orientation schedule creating the need for new innovations in content delivery. Insufficient educators, time and resources were available to support training through the traditional modalities which had been previously afforded staff located on one primary campus. Among the challenges of the format for training delivery was the need to do so in a format that would encourage the employee's motivation to transfer learning into the work place. Egan (2008) wrote "Motivation to transfer learning is understudied" (p. 305). Hence, here was an opportunity which allowed for the further study of motivation to transfer learning.

Purpose

Limited employee training had been facilitated through a web-based resource available to staff for accessing continuing education. The web-based resource offered staff educators a site-produced option for creating and delivering a limited expansion of WBT in the clinics. This study focused on the perceived needs of two disciplines: licensed nurses (LVNs and RNs) and unlicensed medical assistants (MAs). This study assessed the perception of nurses' and medical assistants' perceived needs prior to implementing expanded WBT in physician clinics in the described health care system.

Significance

Research on staff's perception toward implementation of WBT in physician clinics in integrated health care systems was understudied. Primarily studies such as this had been conducted in educational settings rather than health care organizations; therefore, a dearth of research toward implementation of WBT in physician clinics existed. Brown (2005) wrote "Organizations and employees would benefit from knowing how to support employees in their efforts to use technology as a learning tool on the job" (p. 478). Lowe and Holton (2005) supported "Much of the research had been conducted in educational settings and not with adult learners in work settings" (p. 160). The gaps and recommendations for studies such as this case study supported a significant need for research focusing on employees in work place settings.

Literature Review Summary

The technology utilized for training and development of employees in the work place has changed the dynamics of staff education in health care. In many health care

organizations, as with the one described in this case study, the previous format of training staff located on one primary campus has given way to the need to train staff globally. Swanson and Holton (2001) described HRD as "A process for delivering and unleashing human expertise through organization development and personnel training and development for the purpose of improving performance" (p. 4).

As Luskin (2002) wrote "Corporations need to involve increasingly decentralized employees, business partners, and customers dispersed around the globe in workforce training and education" (p. 17). Luskin described the necessity of providing educational opportunities where the employees are located and on training schedules to accommodate the employee's work schedule. Walker et al. (2006) described the potential to reduce the cost of training, including both travel cost and wage replacement cost, when training is not mandated at the primary facility. Dumpe, et al. (2007) described how the Cleveland Clinic Foundation created an online curriculum for nursing competencies providing easier access to training for employees and flexible hours for conducting the training which resulted in decreased cost of educating the employees. Phillips (2006) described how an online hospital nurse preceptor program increased consistency of training and resulted in a reduction of delivery cost.

Nisar (2004) described e-learning as growing in popularity and encouraged organizations to look at the advantages and disadvantages appropriate to strategic objectives of the organization. He also recognized the employee's fear of technology may potentially be a disadvantage. According to McCombs and Vakili (2005) it is necessary to establish a safe and supportive learning environment. They propose a learner-centered

framework for e-learning with a collaborative approach where the participant is a co-learner with instructors and peers.

Southernwood (2008) encouraged the participant to search out information to expand their knowledge supporting this was particularly suited to health care. She described WBT to be less threatening to participants, producing a more flexible learning alternative and producing a cost-effective advantage to expanding organizational development. Insufficient funding and lack of knowledge were listed as the major barriers to utilization. Smith's (2005) study demonstrated a potential savings with WBT of 50-70% for per-diem hospital nurses over instructor facilitated training and a reduction in hours of training by 14.4 hours for same training program.

Research Design

In this case study the researcher was the practitioner and worked collaboratively with the participants to collect the data creating a triangle approach (Bargal, 2006). The nurses and medical assistants were all employed within TMF, a selected health care organization in Texas; therefore, it was assumed that they shared knowledge and behaviors common to their disciplines as well as the culture of this health care organization.

The objective was to evaluate the perception of the nurses and medical assistants using mixed methodology combining descriptive and quantitative paradigms giving a more robust analysis utilizing the strengths of each. This mixed methodology approach allowed both quantitative and descriptive data to be integrated showing relationships between the two methodologies findings (Creswell, Fetters, and Ivankova, 2004). Foss

and Ellefsen (2002) and Mathison (1988) emphasized that triangulation was the basis of good research practice. Gall, Borg, and Gall (1996) also supported the incorporation of multiple methods of data collection to help eliminate bias in a study.

The data collection instrument was the CWBTNA, a 50-item survey instrument. The Microsoft Word 2007 option for checking the reading level of text was used to evaluate the reading level. The Flesch Reading Ease was 62.2 with a 7.3 Flesch-Kincaid Grade Level. This survey instrument collected employee and clinic demographics and the participant's responses toward their perceptions of computer access; computer usage; computer knowledge which included satisfaction, frustration, and motivation to transfer learning; and WBT preference which included both employee's support and employee's perception of supervisor's support for WBT in the clinic setting. The quantitative data were collected through the use of yes/no dichotomous answers and ordinal data from two different five-point Likert type scales. Quantitative data were analyzed using SPSS® which generated Parametric *t-test*, Analysis of Variance (ANOVA), chi-square, Regression Analysis, Cronbach's Alpha, Correlations and Exploratory Factor Analysis. The descriptive data were collected by analyzing the perceived strengths, weaknesses, opportunities and threats and analyzed by use of the SWOT Analysis.

The descriptive data were collected in Items 47-50 by use of semi-structured interview questions seeking short narrative answers to open-ended questions soliciting the feedback consistent with SWOT (strengths, weaknesses, opportunities and threats). The data were drilled down by assessing themes, creating categories and further drilling

down into sub-categories where appropriate. The descriptive data categories were drilled to assess themes consistent with the quantitative order sets.

Expanding WBT would place the staff educator distant to the participant, so the study requested the participant's/learner's feedback to cultivate a learner-centered culture and andragogy focus where the participant would became more independent in the learning process. Rather than assuming the pedagogy approach to learning with the teacher/staff educator assuming all responsibility, the study focused on what was needed to motivate the participants. The andragogy model was founded on the assumptions that the adult learner wishes to be more independent, uses life experiences from which to learn, and must grow to achieve self-fulfillment (Knowles, 1980). Rogers (1974) described empathic understanding as a key element for a facilitator. The opportunities for empathic understanding expanded exponentially with the move to an expanded WBT program in the clinics.

The survey instrument was sent out to an accessible survey population of 285 employees and 239 surveys were returned for a return rate of 83.86% for the final research study sample. Not all surveys were 100% complete so some analyses showed fewer participants than did others. The study sample included 35 registered nurses, 123 licensed vocational nurses and 81 unlicensed medical assistants. For purposes of this study the registered nurses and licensed vocational nurses were grouped together to form one category: nurses. This created two groupings consisting of 158 licensed nurses and 81 unlicensed medical assistants.

Research Findings

The outcomes of this study should be recognized as being specific to the participating health care organization, the participants and the culture common to both disciplines (nurses and medical assistants) and the organization studied. The questionnaire was developed for this study, the statistical analysis determined by data collected and the researcher. The results of this study should not be generalized to other organizations without comparative data.

Instrument Reliability and Validation

Analyses performed included: Exploratory Factor Analysis (EFA), Cronbach's coefficient alpha, and Correlations. The Exploratory Factor Analysis demonstrated the study met both adequate sample size and variable loadings. Cronbach's coefficient alpha (Scale if item deleted) was computed on the order sets for Computer Knowledge and those specific to Web-based Training. All items in the order sets for Computer Knowledge met the criteria for generally accepted values as they exceeded 0.9. The items in the order sets for Web-based Training Preference proved to be respectable ranging from 0.65 to 0.75. A Pearson Correlation Matrix was run for Items 3-46 and demographics including gender, generational and race groupings. Significant correlations between order sets were demonstrated throughout the matrix.

Participant Levels of Education

Part 1and 2 of the CWBTNA consisted of employee and clinic demographics. Employee demographics collected data on the educational level of the participants. Of the 35 registered nurses five were Diploma Nurses, 14 Associate Degree Nurses, 15 Bachelor

Degree nurses and one Bachelor in Arts. The licensed vocational nurses included five with Associate Degrees in areas other than nursing and three with Bachelor Degrees in other areas. The unlicensed medical assistants included 45 which had received medical assistant training through the local junior college continuing education program, six with Associate Degrees in medical assisting from various colleges both within and out of the state of Texas, ten with either a registered medical assistant or a certified medical assistant designation and 18 trained on the job. Not all participants responded to the education section.

Findings

The following conclusions to the research questions were drawn based on the assumptions and limitations previously stated in the study. Research Questions 1-5 were evaluated using medical assistants and nurses as the independent variables. The Bonferroni was calculated with 0.05 divided by eight total *t-tests* resulting in a correction of 0.01 for level of significance. This correction resulted in a loss in significance for two of the five significant *t-tests.*

1. **What are the differences in the nurse and medical assistant perceptions of access to computers to accommodate WBT?** Medical assistants and nurses were the independent variables with dependent variables individual computer use and shared computer use.
    a. *Individual computer use.* Nurses (n = 158) and medical assistants (n = 81) responded. The chi-square test indicated no significant difference in proportions among medical assistants and nurses in their perception of

access to a computer at work for individual computer use with $p > 0.05$. Proportionally only minimal differences were seen between expected counts and actual counts.

b. *Shared computer use.* Nurses (n = 158) and medical assistants (n = 81) responded. The chi-square test indicated there was no difference in proportions among medical assistants and nurses for shared computer use with $p > 0.05$. Only minimal proportional differences between expected counts and actual counts were noted.

2. **What are the differences in the nurse and medical assistant perceptions of computer usage?** Medical assistants and nurses were the independent variables with dependent variables hours per day spent at work, hours per day spent on computer for job, and degree of computer use to carry out job.

   a. *Hours per day at work and hours per day on computer for job.* Nurses and medical assistants demonstrated a positive perception of their computer usage as evidenced by medical assistants responded they spent a mean of 7.33 hours (n = 80) on the computer for job out of 8.48 hours (n = 81) spent at work. Nurses responded they spent a mean of 6.65 hours (n = 156) on the computer for job out of 8.86 hours (n = 157) reported spent at work. The *t-test* indicated no significant difference between nurse's and medical assistant's responses to hours per day spent at work ($p > 0.05$). However, the *t-test* indicated a significant difference in the perception of number of hours per day nurses and medical assistants spent on the

computer for job ($p < 0.05$). Medical assistants ($M = 7.33$) reported a significantly higher mean number of hours on the computer for job than did nurses ($M = 6.65$). The Bonferroni correction did not affect this test.

b. *Degree of use.* The degree of use of computers by medical assistants ($n = 81$) and nurses ($n = 156$) was analyzed by the chi-square test. No differences in proportions were found in the perception of medical assistants and nurses in the degree to which they used the computer to carry out their job function ($p > 0.05$). Only slight proportional differences in chance were noted.

c. *Positive perception.* Positive perception of computer usage was analyzed by the *t-test* and indicated nurses ($n = 158$, $M = 4.62$ yes) had significantly more positive perception of computer usage than did the medical assistants ($n = 81$, $M = 4.06$ yes) as evidenced by ($p < 0.05$). The Bonferroni correction did not affect this test.

3. What are the differences in the nurse and medical assistant perceptions of their computer knowledge?

a. *Satisfaction.* Knowledge as related to computer satisfaction was evaluated with the use of a five-point Likert type scale where the maximum mean could be five with a three indicating neither agree nor disagree. Both nurses and medical assistants indicated a positive perception of their satisfaction with computer competence since their means exceeded three. The *t-test* indicated that medical assistants ($n = 80$, $M = 4.25$) reported

significantly higher satisfaction with their computer competence compared to nurses (n = 153, M = 3.87) as evidenced by $p < 0.05$. The Bonferroni correction did not affect this test.

b. *Frustration.* Knowledge as related to computer frustration was evaluated using the same five-point Likert type scale. The outcome demonstrated nurses (n = 155, M = 2.93) and medical assistants (n = 80, M = 2.88) responses fell in the negative range of disagree or neither agree nor disagree to frustration thus indicating greater satisfaction. The *t-test* indicated no significant difference between the reporting of nurses and medical assistants ($p > 0.05$).

c. *Perception.* Positive perception was evaluated by analyzing basic computer knowledge using the same five-point Likert scale. Nurses responded (n = 145, M = 3.82) showing a greater tendency toward positive perception of computer knowledge by the medical assistants (n = 75, M = 4.04). This was supported by the *t-test* which indicated a significantly higher positive perception of computer knowledge perceived by medical assistants than did nurses. However, this significant difference did not withstand the Bonferroni adjustment.

d. *Motivation to transfer learning.* Positive perception was evaluated by analyzing the participant's motivation to transfer learning using the same five-point Liker type scale. Nurses (n = 156, M = 4.11) and medical assistants (n = 81, M = 4.24) indicated a positive perception of motivation

to transfer learning in that their means exceeded three. The *t-test* indicated no difference in reported motivation to transfer learning between medical assistants and nurses as indicated by ($p > 0.05$).

4. **What are the differences in the nurse and medical assistant preferences to have WBT rather than commute to the primary campus of the health care organization for training?** A five-point Likert type scale was used for the analysis with five being maximum positive response and one being minimum negative response. Nurses and medical assistants responded minimally above neither agree nor disagree in that their means exceeded three; therefore, indicating a positive perception of employee support for WBT. The *t-test* indicated a significant difference demonstrating the nurses ($n = 155$, $M = 3.34$) perceived greater positive employee support for WBT than did the medical assistants ($n = 78$, $M = 3.15$) as indicated by ($p < 0.05$). However, the Bonferroni correction did affect this test in that it lost significance.
5. **What are the differences in the nurse and medical assistant perceptions of supervisor support of WBT?** Nurses and medical assistants responded with a mean greater than three thus indicating positive perception for supervisor's support of WBT. The *t-test* indicated no significant difference in the perceived supervisor's support for WBT by nurses ($n = 152$, $M = 3.71$) and medical assistants ($n = 78$, $M = 3.69$) as indicated by ($p > 0.05$).
6. **What are the differences in gender and race as related to computer usage, computer knowledge, and preference for WBT?** Gender and race was

consistent with what was anticipated at the onset of the study. Females 224 (93.7%) and 15 males (6.3%) participated in the study. These findings are consistent with national statistics as only about 6% of nurses in the United States are men. It was anticipated in the beginning of the study that the greatest percentage of participants would be White females. Frequencies demonstrated this to hold true with Whites (n = 183, 76.9%) and People of Color 56 (23.4%). As previously discussed due to the small percentages of various categories of race, the groups were recoded to consist of only these two groups.

a. *Gender as related to computer usage.* No significant differences were demonstrated by *t-test* ($p > 0.05$) in gender for the following: hours per day at work, hours per day spent on computer for job, and perception of computer use. The chi-square test indicated a significant difference in proportions among males and females for genders in the degree of computer use ($p < 0.05$). Proportionally the males responded higher than the expected count to not always; whereas, the females responded lower to the expected count. Adversely males responded lower than the expected count to always and females responded higher.

b. *Race as related to computer usage.* No significant differences were demonstrated based on the *t-test* ($p > 0.05$) for hours per day at work and perception of computer usage by Whites or People of Color. The *t-test* indicated a significant difference in hours per day spent on the computer for job in that People of Color (n = 54, M = 7.40 hours) perceived a

greater number of hours spent on the computer per day than did Whites (n = 182, M = 6.73 hours). The chi-square test indicated no significant difference for degrees of computer use for Whites or People of Color ($p > 0.05$).

c. *Gender and Race as related to Computer Knowledge.* No significant differences were demonstrated by utilization of the *t-test* ($p > 0.05$) in gender or race for satisfaction with computer competence and motivation to transfer learning. No difference was demonstrated by use of the *t-test* in race for basic computer knowledge ($p > 0.05$). However, the *t-test* indicated a significant difference was found in genders for basic computer knowledge ($p < 0.05$). The *t-test* indicated that male participants (n = 14, M = 4.39) perceived greater basic computer knowledge than did the female participants (n = 206, M = 3.86) in the study. The Bonferroni correction did not affect this test.

d. *Gender and Race as related to preference for WBT.* No significant differences were demonstrated by utilization of the parametric *t-test* in gender or race for employee's support for WBT or supervisor's support for WBT ($p > 0.05$). A means greater than three on the five-point Likert type scale indicated positive support. Gender did indicate positive perception for employee's support with males (n = 12, M = 3.42) and females (n = 221, M = 3.27) and supervisor's support with males (n = 14, M = 3.93) and females (n = 216, M = 3.69). Additionally, race indicated

positive perception for employee's support with People of Color (n = 54, M = 3.62) and Whites (n = 179, M = 3.52) and supervisor's support with People of Color (n = 55, M = 3.29) and Whites (n = 175, M = 3.29).

7. **What are the differences in generations as related to the perception of computer usage, computer knowledge, and preference for WBT?**

   Generational divisions evaluated were Vets + Boomers, Xers, and Nexters. Due to the very small percentage of participants in the Veteran generation (1.3%), the generation groupings were recoded to combine Vets with Boomers (Vets+Boomers).

   a. *Generational Computer Usage.* No significant differences were found by use of the ANOVA ($p > 0.05$) between Vets + Boomers, Xers, or Nexters for hours per day at work ($p = 0.625$), hours per day on computer for job ($p = 0.122$) or positive perception of computer use ($p = 0.252$). The chi-square test indicated a clear trend toward younger generations reporting always for their degree of using a computer on the job as demonstrated by $p = 0.051$.

   b. *Generational Computer Knowledge.* No significant differences were demonstrated by use of the ANOVA ($p > 0.05$) between generations for frustration ($p = 0.336$) and motivation ($p = 0.907$). The ANOVA demonstrated a significant difference for satisfaction with computers ($p < 0.05$) with Vets + Boomers (n = 65, M = 3.60), Xers (n = 119, M = 3.90) and Nexters (n = 31, M = 4.37). Post Hock Test demonstrated a

significant difference when Vets + Boomers were compared to both Xers and Nexters. However, no significant differences were seen when Xers were compared to Nexters.

c. *Generational Preference for WBT.* No significant differences were demonstrated by use of the ANOVA ($p > 0.5$) for employee's support for WBT ($p = 0.170$) or supervisor's support for WBT ($p = 0.386$). However, all indicated positive support of WBT as evidenced by means greater than three on the five-point Likert type scale.

8. **What individual and environmental factors influence nurse and medical assistant motivation to transfer learning?** Regression analysis was computed to compare multiple constructs which emphasized individual and environmental factors that influenced nurses' and medical assistants' motivation to transfer learning.

    a. *Motivation to transfer learning.* Positive perception of computer use, satisfaction and basic knowledge were utilized as the independent variables with motivation to transfer learning as the dependent variable. All variables were summed across multiple items creating continuous variables. A regression analysis was run indicating significance that motivation to transfer learning was increased when the participant responded higher on the Likert type scale indicating increased basic computer knowledge. Basic computer knowledge was the only independent variable of the three that was significant.

b. *Motivation to transfer learning.* Positive perception of computer use, Employee's Support and Supervisor's Support for WBT were utilized as the independent variables with motivation to transfer learning as the dependent variable. All variables were summed across multiple items creating continuous variables. A regression analysis was run indicating one of the three relationships was significantly different from zero. Motivation to transfer learning was increased when the participant perceived positive supervisor's support for WBT.

c. ANOVA demonstrated significance at the intercept for generations and discipline (nurses and medical assistants). The descriptive statistics showed a slight trend indicating an increase in perceived motivation to transfer learning. This trend reflected Nexters (M = 4.16) indicated a greater perception of motivation to transfer learning than did Xers (M = 4.15) with Vets + Boomers (M = 4.12) showing the least increase.

9. **What perceived strengths, weaknesses, opportunities, and threats (SWOT) regarding a WBT program are reported by nurses and medical assistants?** This question was evaluated using qualitative data collected from by the SWOT analysis in the form of open-ended questions. The coding of themes was drilled down to categories common to each analysis supporting the qualitative analysis: access, knowledge, and WBT Preference.

    a. *Strengths.* Of the 239 participants responding 38 responded no strengths identified, left the question blank or categorized as other/miscellaneous.

The 201 remaining responses were synthesized into coded categories. WBT preferences 71.5% (n = 171) identified subcategories including prefers WBT over classroom (2.1%), prefers to work independently (44.3%), saves time (17.2%), no travel from home clinic (5.4%), and able to review work (2%). Knowledge related to the motivation to transfer learning into work applications was perceived by 7.5% (n = 18). Positive access to computers was identified by 5% (n = 12).

b. *Weaknesses.* Of the 239 participants responding 52 responded no weaknesses identified, left the question blank or other/miscellaneous. The 187 remaining responses were synthesized into coded categories. Access identified 4.2% (n = 10) with subcategories identified 2.1% as weakness and 2.1% technology challenges. Knowledge identified 1.7% (n = 4) with subcategories 0.4% as weakness and 1.3% frustration. The WBT preference identified 79.6% (n = 173) with subcategories including 51.9% concerns that face-to-face interaction with instructor was missing, 4.2% relied on the instructor, 3.5% hands on missing, 10.5% finding time to complete WBT as weakness, and 2.5% (n = 6) feared procrastination.

c. *Opportunities.* Of the 239 participants responding 72 responded to no weaknesses identified, left the question blank or other/miscellaneous. The remaining 167 were synthesized into coded categories. Access identified 4.6% (n = 11). Knowledge identified 22.6% (n = 54) with subcategories motivation to transfer continuing education 2.9%, Motivation to transfer

general learning 11.7%, and motivation to transfer computer knowledge 7.5% and Frustration 0.4%. WBT preference identified 42.6% (n = 102) with subcategories including prefers WBT over classroom 16.3%, prefers to work independently at own pace 16.3%, time saving 6.3%, face to face important 0.4%, no travel 3.8% and miscellaneous reasons prefers WBT 5.9%.

d. *Threats.* Of the 239 participants responding 121 responded to no weaknesses identified, left the question blank or other/miscellaneous. The remaining 118 were synthesized into coded categories. Access identified 5.9 (n = 14). Knowledge identified 7.1% (n = 17). WBT preference identified 36.4% (n = 87) with subcategories face-to-face or hands on 20.9%, finding unscheduled time 10.5%, procrastination 3.3% and cheating 1.7%.

Summary

A question which has continued to surface over the years is "Does theory inform practice or does practice inform theory—which leads which?" (Russ-Eft, 2005, p. 431). This was a major debate between Gilley and Russ-EFt at the 2004 International Human Resource Conference held in Austin, Texas. Being a practitioner before becoming a researcher this question has continued to intrigue me. O'Brien (1998) explained "For action researchers, theory informs practice, practice refines theory, in a continuous transformation" (p.6). Perhaps in the beginning practice lead theory as first it appears

there had to be something to be researched to establish theory. It is my belief that one must have a place to test theory and what better place than practice.

Swanson and Holton (1997) wrote

> Theory, research, development, and practice together compose a vital cycle that allows ideas to be progressively refined as they evolve from concepts to practices and from practices to concepts. The Theory-Research-Development-Practice cycle illustrates the systematic application of inquiry methods working to advance the knowledge used by both HRD researchers and practitioners (p. 13).

Today as we strive to follow evidenced based practice it is a collaborative approach between theory and practice. As practice is researched new theory is developed. This new theory is then placed into practice creating change to be further researched. This creates a continuum of practice, research, theory and the change of practice with the incorporation of new theory, followed by research and support of the theory or further change of the theory repeating the cycle.

Computer Based Instruction for Adults

Lowe and Holton (2005) wrote Computer Based Instruction (CBI) has opportunities for both the researcher and the practitioner: "For the researcher opportunities for empirical test and for practitioners the first integrated framework of the essential variables for planning and designing CBI for adults" (p. 182). The theory consists of inputs, processes and outputs. The desired outcome (only outcome) is to achieve the learning goal. It is recommended that the practitioner utilize the Theory of Effective CBI and the data obtained in this study to create the work place model for expanded WBT in the clinics.

Recommendations for Additional Studies

Additional studies are needed to validate effectiveness of WBT technology for adult education in work place settings. Insufficient evidence is available on education learning outcomes as relates to what affects learning using computer education and training delivery methods (Lowe & Holton, 2005). It is recommended that the practitioner/researcher theory of effective CBI for adults be followed in implementing the expanded WBT program in the physician clinics. It is necessary to address research studies within the population of health care and other business organizations moving toward e-learning.

The employee's fear of technology may potentially be a disadvantage. A deeper look at the implications of Maslow's hierarchy and how it relates to the fear of technology and safety and security needs towards the advancement of WBT in the work place is suggested. A study comparing organizations with successful transitions to WBT versus organizations with unsuccessful transitions are recommended to analyze steps necessary to increase the employee's security. Further emphasis should be placed on research assessing motivation to learn by eliminating or decreasing fears and anxiety in utilizing technology are recommended.

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APPENDIX A

CLINIC WEB-BASED TRAINING NEEDS ASSESSMENT
Quantitative Section

Identification Number _____

Part 1 – Employee Demographics

Discipline:
Place a check mark in the box with the best answer to the questions that follow
☐ MA ☐ LVN ☐ RN

Year of Birth:
☐ 1980-2000 Nexters/Millennials
☐ 1961-1980 Xers
☐ 1943-1960 Baby Boomers
☐ 1922-1943 Veterans

Education:
Check the appropriate box below and list additional certifications and degrees in the designated space.

Nurse: ☐ LVN ☐ RN, ADN ☐ RN, Diploma ☐ RN, BSN ☐ RN, MSN ☐ RN, MS

List additional degrees or certifications:

_____

Medical Assistant: ☐ Associate Degree in Medical Assisting
☐ MA TJC Certificate
☐ MA On-Job-Trained
☐ CMA with Current Renewal or ☐ CMA Non-renewed
☐ RMA with Current Renewal or ☐ RMA Non-renewed

List additional degrees or certifications:

_____

Sex: ☐ Male ☐ Female

Race: ☐ African American ☐ Caucasian ☐ Native American
☐ Asian or Pacific Islander ☐ Hispanic ☐ Other

Part 2 – Clinic Demographics
Place a check in the box in front of your clinic

Regional Clinics

☐ Athens	☐ Lake Palestine (Babbitt)	☐ Canton
☐ Chandler	☐ Lindale	☐ Henderson No. 2
☐ Corsicana	☐ Quitman	☐ Holly Lake
☐ Cypress Springs	☐ Sulphur Springs	☐ Mineola
☐ Henderson No. 1	☐ Trinidad	☐ Other _____
☐ Jacksonville	☐ Whitehouse	
☐ Kilgore	☐ Winnsboro	
☐ Lake Cypress Springs	☐ Other _____	

Local Clinics -Tyler			**Hospital Based Clinics**
☐ Children's	☐ Plastic/Cosmetic Surgery	☐ ENT	☐ FamileCARE OB/Gyn
☐ Pediatric	☐ Endocrinology	☐ Podiatry	☐ FamilyCARE Pedi
☐ Douglas	☐ General Surgery	☐ Urology	☐ DirectCARE Tyler
☐ Manhatton	☐ Vascular Surgery	☐ Research	☐ Health At Work
☐ Gastro	☐ Sleep Medicine	☐ OB/Gyn	☐ Wound Care
☐ Cardio-Thoracic	☐ Ortho	☐ Rehab	☐ Other _____
☐ EasyCARE	☐ Sports Medicine	☐ Genetics	
☐ Rheumatology	☐ Neurology	☐ Hospitalists	
☐ Pain Management	☐ Neuroscience	☐ Other _____	

Part 3 – Computer access at work for training
Place a check in the most appropriate box for each question below.

No.	Question	Answer	
1	I have access to a computer at work designated for my individual use.	☐ No	☐ Yes
2	I have access to a computer at work designated for shared use.	☐ No	☐ Yes

Part 4 – Computer usage

No.	Question	Answer in number of hours (Note: You may use fractions or decimals)
3	How many hours per day do you typically spend at work?	
4	On a typical work day, how much time do you spend using a computer for your job?	

Circle the number that best describes your agreement or disagreement with each statement. There is no right or wrong answer.

No.	Question	Always	Very often	Sometimes	Rarely	Never
5	How would you describe the degree to which you use the computer to carry out your job functions?	5	4	3	2	1

Place a check in the most appropriate box for each question below.

No.	Question	Answer	
6	I use email at work to communicate with my staff development educator and others.	☐ No	☐ Yes
7	I use the Internet at work.	☐ No	☐ Yes
8	I use Logicians at my clinic for patient charting.	☐ No	☐ Yes
9	I use electronic medical record charting in my work environment.	☐ No	☐ Yes
10	I have taken or am currently taking a college level course on the Internet.	☐ No	☐ Yes
11	I have taken or am currently taking an Internet course for continuing education.	☐ No	☐ Yes
12	I have completed one or more optional HealthNet courses for nursing contact hours or personal education.	☐ No	☐ Yes

Part 5 – Computer knowledge

Circle the number that best describes your agreement or disagreement with each statement. There is no right or wrong answer.

Satisfaction with Computer Competence

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
13	I am satisfied with my current level of ability to use a computer.	5	4	3	2	1
14	I am happy with the amount of things I can do with a computer.	5	4	3	2	1
15	Overall, my ability to use a computer is fine.	5	4	3	2	1

Frustration with Computers at Work

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
16	I get frustrated when I try to use my computer on the job.	5	4	3	2	1
17	Overall, I experience little frustration using computers on the job.	5	4	3	2	1

Basic Computer Knowledge

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
18	I know how to use the computer.	5	4	3	2	1
19	When confronted with new technology I am eager to learn.	5	4	3	2	1
20	I am comfortable communicating online in English.	5	4	3	2	1
21	I am comfortable with my typing skills.	5	4	3	2	1
22	I am comfortable communicating with others through email.	5	4	3	2	1
23	I can attach files to my email communication.	5	4	3	2	1
24	I can open files received by email communication.	5	4	3	2	1
25	I can access computer training modules on HealthNet.	5	4	3	2	1
26	I can create a Word® document on the computer.	5	4	3	2	1
27	I can create a PowerPoint® presentation on the computer.	5	4	3	2	1
28	I can use computer spreadsheets such as Excel®.	5	4	3	2	1
29	I can use computer data bases such as Access®.	5	4	3	2	1
30	I can use search engines such as Google, Yahoo, etc.	5	4	3	2	1
31	I know how to use the Internet for research if I need information.	5	4	3	2	1
32	I can locate peer reviewed articles in professional journals on the Internet.	5	4	3	2	1

Motivation to Transfer Learning

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
33	When I complete training, I can't wait to get back to work and try what I learned	5	4	3	2	1
34	I believe training will help me to do my current job better	5	4	3	2	1
35	I get excited when I think about trying to use my new learning on the job.	5	4	3	2	1
36	I incorporate knowledge and skills I learn at training to my daily work.	5	4	3	2	1
37	I am motivated to use what I learn in training on the job.	5	4	3	2	1

Part 6 – Web-based training preference

Circle the number that best describes your agreement or disagreement with each statement. There is no right or wrong answer.

Employee Support for Web-Based Training

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
38	I prefer to have web based training modules over classroom training.	5	4	3	2	1
39	I like to work independently and at my own pace.	5	4	3	2	1
40	I expect it will take about the same amount of time to complete training on the computer that it does in the classroom.	5	4	3	2	1
41	Face-to-face interaction with the instructor is important to me.	5	4	3	2	1
42	I rely on the instructor to guide my learning.	5	4	3	2	1
43	I prefer to complete my annual system training on HealthNet instead of attending classroom or live training activities.	5	4	3	2	1

Supervisor Support for Web-based Training

	Question	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
44	My supervisor is supportive of my taking time for online training on a computer.	5	4	3	2	1
45	My supervisor would like me to take online courses or training	5	4	3	2	1
46	If it were up to my supervisor, I would do no online computer courses/training.	5	4	3	2	1

CLINIC WEB-BASED TRAINING NEEDS ASSESSMENT
Qualitative Section

Part 7 – SWOT Assessment (Strengths/Weaknesses/Opportunities/Threats)
Instructions: Give short answers to the following questions.

47. List one **strength** you see in receiving education through a Web Based Training program.

_____

48. List one **weakness** you see in receiving education through a Web Based Training program.

_____

49. List one **opportunity** you could benefit from by having Web Based Training program.

_____

50. List one **threat** you see as a challenge to a Web Based Training program.

_____

Thank you for taking this time out of your busy work schedule to complete the Clinic Web-Based Training Needs Assessment.

Please return completed needs assessment by either method below:

Method #1
Pam Hopkins, RN, MS
Staff Development Educator
Education Services
TMFHS Interdepartmental Mail

Or

Method #2
Mail in the postage-paid envelope provided to:
Pam Hopkins, RN, MS
P. O. Box 1498
Lindale, TX 75771

APPENDIX B

ASSESSING NURSES AND MEDICAL ASSISTANTS PERCEIVED NEEDS PRIOR TO IMPLEMENTATION OF EXPANDED WEB-BASED TRAINING IN PHYSICIAN CLINICS

From: Pam Hopkins, RN, MS
Staff Development Educator

Participant Name: _____

Instructions:

Step 1: Please detach this cover sheet and you will find an Information Sheet attached. Please read in its entirety.

Step 2: Please complete and return the attached needs assessment to me before month day, 2007.

Step 3: The average time required for completing the needs assessment is 5 -10 minutes. Once you complete the needs assessment return it to me by one of two methods:

Method 1. Place in the self-addressed postage-paid envelope, seal it, and return to me by the U. S. Postal Mail:

Pam Hopkins, RN, MS
P. O. Box 1498
Lindale, TX 75771

Or

Method 2. Place in the self-addressed postage-paid envelope, seal it, and place it in a TMFHS interdepartmental mailer and return to me in the interdepartmental mail:

Pam Hopkins, RN, MS
Staff Development Educator
Education Services

Once again, I want to thank each of you for taking time out of your busy work schedule to participate in this *Clinic Web-Based Training Needs Assessment*.

INFORMATION SHEET

ASSESSING NURSES AND MEDICAL ASSISTANTS PERCEIVED NEEDS PRIOR TO IMPLEMENTATION OF EXPANDED WEB-BASED TRAINING IN PHYSICIAN CLINICS

You are being asked to participate in this research study *Assessing Nurses And Medical Assistants Perceived Needs Prior To Implementation of Expanded Web-Based Training In Physician Clinics* by completing the attached *Clinic Web-Based Training Needs Assessment.* This study will provide data which will assist to understand your perception of computer access, computer usage, computer knowledge, and your preference to use computer based training as a method of learning in your clinic. This study is a part of fulfillment for my doctoral dissertation in Educational Human Resource Development at Texas A&M College Station and to fulfill the Education Services Clinic 2007 Formal Needs Assessment which will help to facilitate your future training and development. A total of approximately 230 nurses and medical assistants have been asked to participate in this study.

The *Clinic Web-Based Training Needs Assessment* paper packet will take about 5-10 minutes of your time. The risks associated with this study are minimal since your name will not be attached to the needs assessment upon return to my office. There is no monetary compensation for completion of the study other than that of your normal pay since the study will be completed during your regularly scheduled working hours.

Your responses will remain confidential. By use of a paperclip, a cover sheet with your name has been attached to this *Clinic Web-Based Training Needs Assessment* along with a postage-paid envelope addressed to me. Each needs assessment has been numbered starting with the Number 1 which will enable me to know whether all assessments have been returned. Please remove the cover sheet with your name before returning the *Clinic Web-Based Training Needs Assessment.* Your data will be entered into the database by the number on your assessment. Your name will not be utilized in the data entry or assessment. The records of this study will be kept private. No identifiers linking you to the study will be included in any sort of report that might be published.

Your decision whether or not to participate will not affect your current or future relations with Texas A&M University or Trinity Mother Frances Healthcare System. If you decide to participate, you are free to refuse to answer any of the questions that may make you uncomfortable. You can contact me with any questions regarding this study at:
Pam Hopkins, RN, MS
Education Services
903-531-4306
email: hopkinp@tmfhs.org

This research study has been reviewed and approved by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Melissa McIlhaney, IRB Program Coordinator, Office of Research Compliance, (979) 458-4067, mcilhaney@tamu.edu.

Please be sure you have read the above information, asked questions and received answers to your satisfaction. You may keep this Information Sheet for your records.

APPENDIX C

Correlations

		Q13	Q14	Q15	Q16	Q17	Q18
Q13	Pearson Correlation	1	.845**	.873**	-.116	.164*	.669**
	Sig. (2-tailed)	.	.000	.000	.077	.013	.000
	N	233	233	233	233	232	232
Q14	Pearson Correlation	.845**	1	.820**	-.130*	.126	.578**
	Sig. (2-tailed)	.000	.	.000	.046	.053	.000
	N	233	236	236	236	235	235
Q15	Pearson Correlation	.873**	.820**	1	-.151*	.195**	.638**
	Sig. (2-tailed)	.000	.000	.	.020	.003	.000
	N	233	236	236	236	235	235
Q16	Pearson Correlation	-.116	-.130*	-.151*	1	-.262**	-.145*
	Sig. (2-tailed)	.077	.046	.020	.	.000	.026
	N	233	236	236	236	235	235
Q17	Pearson Correlation	.164*	.126	.195**	-.262**	1	.134*
	Sig. (2-tailed)	.013	.053	.003	.000	.	.040
	N	232	235	235	235	235	234
Q18	Pearson Correlation	.669**	.578**	.638**	-.145*	.134*	1
	Sig. (2-tailed)	.000	.000	.000	.026	.040	.
	N	232	235	235	235	234	235
Q19	Pearson Correlation	.353**	.362**	.333**	-.175**	.092	.484**
	Sig. (2-tailed)	.000	.000	.000	.007	.161	.000
	N	232	235	235	235	234	234
Q20	Pearson Correlation	.489**	.446**	.436**	-.079	-.011	.537**
	Sig. (2-tailed)	.000	.000	.000	.226	.866	.000
	N	233	236	236	236	235	235
Q21	Pearson Correlation	.407**	.383**	.411**	-.163*	.122	.431**
	Sig. (2-tailed)	.000	.000	.000	.012	.061	.000
	N	232	235	235	235	234	234
Q22	Pearson Correlation	.466**	.381**	.405**	-.107	.028	.569**
	Sig. (2-tailed)	.000	.000	.000	.102	.668	.000
	N	232	235	235	235	235	234
Q23	Pearson Correlation	.454**	.415**	.398**	-.184**	.113	.566**
	Sig. (2-tailed)	.000	.000	.000	.005	.083	.000
	N	233	236	236	236	235	235
Q24	Pearson Correlation	.491**	.431**	.461**	-.185**	.087	.596**
	Sig. (2-tailed)	.000	.000	.000	.004	.183	.000
	N	232	235	235	235	234	234
Q25	Pearson Correlation	.312**	.311**	.282**	-.016	.222**	.437**
	Sig. (2-tailed)	.000	.000	.000	.805	.001	.000
	N	232	235	235	235	234	234
Q26	Pearson Correlation	.386**	.345**	.407**	-.149*	.092	.551**
	Sig. (2-tailed)	.000	.000	.000	.023	.162	.000
	N	233	235	235	235	234	234
Q27	Pearson Correlation	.432**	.423**	.418**	-.182**	.049	.469**
	Sig. (2-tailed)	.000	.000	.000	.006	.458	.000
	N	227	229	229	229	228	228
Q28	Pearson Correlation	.423**	.414**	.416**	-.172**	.118	.502**
	Sig. (2-tailed)	.000	.000	.000	.008	.071	.000
	N	233	236	236	236	235	235
Q29	Pearson Correlation	.389**	.346**	.378**	-.075	.084	.464**
	Sig. (2-tailed)	.000	.000	.000	.253	.202	.000
	N	230	233	233	233	232	232

Correlations

		Q13	Q14	Q15	Q16	Q17	Q18
Q30	Pearson Correlation	.418**	.336**	.389**	-.151*	.099	.495**
	Sig. (2-tailed)	.000	.000	.000	.021	.132	.000
	N	232	235	235	235	234	234
Q31	Pearson Correlation	.533**	.482**	.518**	-.110	.092	.591**
	Sig. (2-tailed)	.000	.000	.000	.092	.159	.000
	N	233	236	236	236	235	235
Q32	Pearson Correlation	.400**	.360**	.408**	-.106	.082	.433**
	Sig. (2-tailed)	.000	.000	.000	.105	.211	.000
	N	233	236	236	236	235	235
Q33	Pearson Correlation	.090	.066	.076	-.055	.075	.177**
	Sig. (2-tailed)	.170	.316	.246	.404	.251	.007
	N	232	235	235	235	234	234
Q34	Pearson Correlation	.090	.092	.063	-.071	-.004	.122
	Sig. (2-tailed)	.170	.158	.334	.278	.956	.061
	N	232	235	235	235	234	234
Q35	Pearson Correlation	.167*	.133*	.146*	-.120	.039	.258**
	Sig. (2-tailed)	.011	.041	.025	.067	.556	.000
	N	232	235	235	235	234	234
Q36	Pearson Correlation	.232**	.254**	.193**	-.092	.001	.317**
	Sig. (2-tailed)	.000	.000	.003	.159	.992	.000
	N	232	235	235	235	234	234
Q37	Pearson Correlation	.214**	.235**	.192**	-.070	.022	.312**
	Sig. (2-tailed)	.001	.000	.003	.283	.739	.000
	N	232	235	235	235	234	234
Q38	Pearson Correlation	.207**	.217**	.181**	-.081	.059	.250**
	Sig. (2-tailed)	.001	.001	.005	.216	.369	.000
	N	232	235	235	235	234	234
Q39	Pearson Correlation	.232**	.249**	.258**	.108	.009	.238**
	Sig. (2-tailed)	.000	.000	.000	.098	.893	.000
	N	233	236	236	236	235	235
Q40	Pearson Correlation	.111	.133*	.092	.244**	.042	.046
	Sig. (2-tailed)	.094	.042	.161	.000	.524	.482
	N	230	233	233	233	232	232
Q41	Pearson Correlation	.050	.030	.031	-.052	.053	.103
	Sig. (2-tailed)	.445	.652	.633	.429	.420	.115
	N	233	236	236	236	235	235
Q42	Pearson Correlation	.082	.076	.064	-.124	.045	.149*
	Sig. (2-tailed)	.216	.249	.329	.059	.497	.023
	N	231	234	234	234	233	233
Q43	Pearson Correlation	.214**	.228**	.202**	-.044	.090	.249**
	Sig. (2-tailed)	.001	.000	.002	.502	.169	.000
	N	233	236	236	236	235	235
Q44	Pearson Correlation	.155*	.155*	.174**	-.039	.184**	.202**
	Sig. (2-tailed)	.019	.018	.008	.554	.005	.002
	N	229	232	232	232	231	231
Q45	Pearson Correlation	.177**	.148*	.178**	-.037	.140*	.224**
	Sig. (2-tailed)	.007	.024	.007	.582	.034	.001
	N	228	230	230	230	229	229
Q46	Pearson Correlation	-.011	-.019	-.018	-.209**	.060	.012
	Sig. (2-tailed)	.869	.771	.790	.001	.371	.863
	N	227	229	229	229	228	228

Correlations

		Q19	Q20	Q21	Q22	Q23	Q24
Q13	Pearson Correlation	.353**	.489**	.407**	.466**	.454**	.491**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	232	233	232	232	233	232
Q14	Pearson Correlation	.362**	.446**	.383**	.381**	.415**	.431**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q15	Pearson Correlation	.333**	.436**	.411**	.405**	.398**	.461**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q16	Pearson Correlation	-.175**	-.079	-.163*	-.107	-.184**	-.185**
	Sig. (2-tailed)	.007	.226	.012	.102	.005	.004
	N	235	236	235	235	236	235
Q17	Pearson Correlation	.092	-.011	.122	.028	.113	.087
	Sig. (2-tailed)	.161	.866	.061	.668	.083	.183
	N	234	235	234	235	235	234
Q18	Pearson Correlation	.484**	.537**	.431**	.569**	.566**	.596**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	235	234	234	235	234
Q19	Pearson Correlation	1	.590**	.409**	.478**	.404**	.437**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	235	235	234	234	235	234
Q20	Pearson Correlation	.590**	1	.454**	.590**	.501**	.466**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q21	Pearson Correlation	.409**	.454**	1	.477**	.382**	.429**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	234	235	235	234	235	234
Q22	Pearson Correlation	.478**	.590**	.477**	1	.599**	.587**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	234	235	234	235	235	234
Q23	Pearson Correlation	.404**	.501**	.382**	.599**	1	.597**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	235	236	235	235	236	235
Q24	Pearson Correlation	.437**	.466**	.429**	.587**	.597**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	234	235	234	234	235	235
Q25	Pearson Correlation	.394**	.459**	.318**	.440**	.427**	.456**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	235	234	234	235	234
Q26	Pearson Correlation	.450**	.470**	.430**	.503**	.660**	.612**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	235	234	234	235	234
Q27	Pearson Correlation	.350**	.401**	.245**	.365**	.569**	.403**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	228	229	228	228	229	228
Q28	Pearson Correlation	.415**	.429**	.342**	.393**	.594**	.450**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q29	Pearson Correlation	.328**	.328**	.238**	.270**	.433**	.348**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	232	233	232	232	233	232

Correlations

		Q19	Q20	Q21	Q22	Q23	Q24
Q30	Pearson Correlation	.450**	.548**	.402**	.596**	.445**	.586**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	234	234	235	234
Q31	Pearson Correlation	.440**	.508**	.401**	.484**	.479**	.572**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q32	Pearson Correlation	.404**	.365**	.260**	.339**	.457**	.418**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	236	235	235	236	235
Q33	Pearson Correlation	.400**	.342**	.183**	.159*	.229**	.166*
	Sig. (2-tailed)	.000	.000	.005	.015	.000	.011
	N	234	235	234	234	235	234
Q34	Pearson Correlation	.278**	.220**	.144*	.159*	.144*	.116
	Sig. (2-tailed)	.000	.001	.028	.015	.027	.077
	N	234	235	234	234	235	234
Q35	Pearson Correlation	.367**	.349**	.177**	.240**	.326**	.287**
	Sig. (2-tailed)	.000	.000	.007	.000	.000	.000
	N	234	235	234	234	235	234
Q36	Pearson Correlation	.448**	.389**	.202**	.343**	.300**	.348**
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.000
	N	234	235	234	234	235	234
Q37	Pearson Correlation	.534**	.414**	.220**	.346**	.231**	.283**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000
	N	234	235	234	234	235	234
Q38	Pearson Correlation	.252**	.255**	.160*	.290**	.316**	.206**
	Sig. (2-tailed)	.000	.000	.014	.000	.000	.002
	N	234	235	234	234	235	234
Q39	Pearson Correlation	.092	.192**	.163*	.254**	.276**	.241**
	Sig. (2-tailed)	.159	.003	.012	.000	.000	.000
	N	235	236	235	235	236	235
Q40	Pearson Correlation	-.061	.060	.025	-.026	.056	-.039
	Sig. (2-tailed)	.355	.364	.707	.689	.399	.556
	N	232	233	232	232	233	232
Q41	Pearson Correlation	.024	-.043	.052	.109	.124	.160*
	Sig. (2-tailed)	.710	.516	.429	.097	.058	.014
	N	235	236	235	235	236	235
Q42	Pearson Correlation	.033	.019	.072	.152*	.166*	.184**
	Sig. (2-tailed)	.616	.777	.273	.020	.011	.005
	N	233	234	233	233	234	233
Q43	Pearson Correlation	.189**	.235**	.182**	.247**	.216**	.247**
	Sig. (2-tailed)	.004	.000	.005	.000	.001	.000
	N	235	236	235	235	236	235
Q44	Pearson Correlation	.199**	.127	.178**	.228**	.138*	.124
	Sig. (2-tailed)	.002	.053	.007	.000	.036	.060
	N	231	232	231	231	232	231
Q45	Pearson Correlation	.178**	.177**	.216**	.200**	.182**	.181**
	Sig. (2-tailed)	.007	.007	.001	.002	.006	.006
	N	229	230	229	229	230	229
Q46	Pearson Correlation	.034	.021	.063	.088	.090	.058
	Sig. (2-tailed)	.614	.755	.340	.185	.175	.379
	N	228	229	228	228	229	228

Correlations

		Q25	Q26	Q27	Q28	Q29	Q30
Q13	Pearson Correlation	.312**	.386**	.432**	.423**	.389**	.418**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	232	233	227	233	230	232
Q14	Pearson Correlation	.311**	.345**	.423**	.414**	.346**	.336**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q15	Pearson Correlation	.282**	.407**	.418**	.416**	.378**	.389**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q16	Pearson Correlation	-.016	-.149*	-.182**	-.172**	-.075	-.151*
	Sig. (2-tailed)	.805	.023	.006	.008	.253	.021
	N	235	235	229	236	233	235
Q17	Pearson Correlation	.222**	.092	.049	.118	.084	.099
	Sig. (2-tailed)	.001	.162	.458	.071	.202	.132
	N	234	234	228	235	232	234
Q18	Pearson Correlation	.437**	.551**	.469**	.502**	.464**	.495**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	234	228	235	232	234
Q19	Pearson Correlation	.394**	.450**	.350**	.415**	.328**	.450**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	234	228	235	232	235
Q20	Pearson Correlation	.459**	.470**	.401**	.429**	.328**	.548**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q21	Pearson Correlation	.318**	.430**	.245**	.342**	.238**	.402**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	234	228	235	232	234
Q22	Pearson Correlation	.440**	.503**	.365**	.393**	.270**	.596**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	234	228	235	232	234
Q23	Pearson Correlation	.427**	.660**	.569**	.594**	.433**	.445**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q24	Pearson Correlation	.456**	.612**	.403**	.450**	.348**	.586**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	234	234	228	235	232	234
Q25	Pearson Correlation	1	.438**	.218**	.282**	.223**	.430**
	Sig. (2-tailed)	.	.000	.001	.000	.001	.000
	N	235	234	228	235	232	234
Q26	Pearson Correlation	.438**	1	.475**	.524**	.384**	.529**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	234	235	229	235	232	234
Q27	Pearson Correlation	.218**	.475**	1	.746**	.756**	.360**
	Sig. (2-tailed)	.001	.000	.	.000	.000	.000
	N	228	229	229	229	226	228
Q28	Pearson Correlation	.282**	.524**	.746**	1	.712**	.423**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	235	235	229	236	233	235
Q29	Pearson Correlation	.223**	.384**	.756**	.712**	1	.333**
	Sig. (2-tailed)	.001	.000	.000	.000	.	.000
	N	232	232	226	233	233	232

Correlations

		Q25	Q26	Q27	Q28	Q29	Q30
Q30	Pearson Correlation	.430**	.529**	.360**	.423**	.333**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	234	234	228	235	232	235
Q31	Pearson Correlation	.390**	.508**	.395**	.464**	.398**	.687**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q32	Pearson Correlation	.317**	.380**	.463**	.505**	.543**	.499**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	229	236	233	235
Q33	Pearson Correlation	.189**	.271**	.171**	.184**	.121	.148*
	Sig. (2-tailed)	.004	.000	.010	.005	.067	.024
	N	234	234	229	235	232	234
Q34	Pearson Correlation	.139*	.183**	.057	.111	-.003	.071
	Sig. (2-tailed)	.034	.005	.386	.091	.969	.280
	N	234	234	229	235	232	234
Q35	Pearson Correlation	.208**	.312**	.206**	.226**	.140*	.239**
	Sig. (2-tailed)	.001	.000	.002	.000	.034	.000
	N	234	234	229	235	232	234
Q36	Pearson Correlation	.274**	.297**	.224**	.248**	.142*	.354**
	Sig. (2-tailed)	.000	.000	.001	.000	.031	.000
	N	234	234	229	235	232	234
Q37	Pearson Correlation	.297**	.264**	.162*	.220**	.152*	.297**
	Sig. (2-tailed)	.000	.000	.014	.001	.021	.000
	N	234	234	229	235	232	234
Q38	Pearson Correlation	.265**	.251**	.229**	.327**	.131*	.304**
	Sig. (2-tailed)	.000	.000	.001	.000	.046	.000
	N	234	234	228	235	232	234
Q39	Pearson Correlation	.240**	.247**	.177**	.280**	.126	.264**
	Sig. (2-tailed)	.000	.000	.007	.000	.054	.000
	N	235	235	229	236	233	235
Q40	Pearson Correlation	.008	.033	.126	.114	.147*	.022
	Sig. (2-tailed)	.906	.620	.059	.083	.026	.737
	N	232	232	226	233	230	232
Q41	Pearson Correlation	.121	.115	-.005	.090	-.022	.184**
	Sig. (2-tailed)	.064	.078	.945	.169	.738	.005
	N	235	235	229	236	233	235
Q42	Pearson Correlation	.108	.141*	.049	.169**	.031	.195**
	Sig. (2-tailed)	.101	.031	.462	.010	.636	.003
	N	233	233	227	234	231	233
Q43	Pearson Correlation	.335**	.192**	.088	.175**	.064	.317**
	Sig. (2-tailed)	.000	.003	.185	.007	.328	.000
	N	235	235	229	236	233	235
Q44	Pearson Correlation	.208**	.201**	.142*	.201**	.094	.164*
	Sig. (2-tailed)	.001	.002	.033	.002	.157	.013
	N	231	231	225	232	229	231
Q45	Pearson Correlation	.249**	.217**	.065	.161*	.078	.139*
	Sig. (2-tailed)	.000	.001	.337	.015	.240	.035
	N	229	229	223	230	227	229
Q46	Pearson Correlation	.193**	.064	.008	-.090	-.183**	.012
	Sig. (2-tailed)	.003	.336	.904	.175	.006	.862
	N	228	228	222	229	226	228

Correlations

		Q31	Q32	Q33	Q34	Q35	Q36
Q13	Pearson Correlation	.533**	.400**	.090	.090	.167*	.232**
	Sig. (2-tailed)	.000	.000	.170	.170	.011	.000
	N	233	233	232	232	232	232
Q14	Pearson Correlation	.482**	.360**	.066	.092	.133*	.254**
	Sig. (2-tailed)	.000	.000	.316	.158	.041	.000
	N	236	236	235	235	235	235
Q15	Pearson Correlation	.518**	.408**	.076	.063	.146*	.193**
	Sig. (2-tailed)	.000	.000	.246	.334	.025	.003
	N	236	236	235	235	235	235
Q16	Pearson Correlation	-.110	-.106	-.055	-.071	-.120	-.092
	Sig. (2-tailed)	.092	.105	.404	.278	.067	.159
	N	236	236	235	235	235	235
Q17	Pearson Correlation	.092	.082	.075	-.004	.039	.001
	Sig. (2-tailed)	.159	.211	.251	.956	.556	.992
	N	235	235	234	234	234	234
Q18	Pearson Correlation	.591**	.433**	.177**	.122	.258**	.317**
	Sig. (2-tailed)	.000	.000	.007	.061	.000	.000
	N	235	235	234	234	234	234
Q19	Pearson Correlation	.440**	.404**	.400**	.278**	.367**	.448**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	234	234	234	234
Q20	Pearson Correlation	.508**	.365**	.342**	.220**	.349**	.389**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	236	236	235	235	235	235
Q21	Pearson Correlation	.401**	.260**	.183**	.144*	.177**	.202**
	Sig. (2-tailed)	.000	.000	.005	.028	.007	.002
	N	235	235	234	234	234	234
Q22	Pearson Correlation	.484**	.339**	.159*	.159*	.240**	.343**
	Sig. (2-tailed)	.000	.000	.015	.015	.000	.000
	N	235	235	234	234	234	234
Q23	Pearson Correlation	.479**	.457**	.229**	.144*	.326**	.300**
	Sig. (2-tailed)	.000	.000	.000	.027	.000	.000
	N	236	236	235	235	235	235
Q24	Pearson Correlation	.572**	.418**	.166*	.116	.287**	.348**
	Sig. (2-tailed)	.000	.000	.011	.077	.000	.000
	N	235	235	234	234	234	234
Q25	Pearson Correlation	.390**	.317**	.189**	.139*	.208**	.274**
	Sig. (2-tailed)	.000	.000	.004	.034	.001	.000
	N	235	235	234	234	234	234
Q26	Pearson Correlation	.508**	.380**	.271**	.183**	.312**	.297**
	Sig. (2-tailed)	.000	.000	.000	.005	.000	.000
	N	235	235	234	234	234	234
Q27	Pearson Correlation	.395**	.463**	.171**	.057	.206**	.224**
	Sig. (2-tailed)	.000	.000	.010	.386	.002	.001
	N	229	229	229	229	229	229
Q28	Pearson Correlation	.464**	.505**	.184**	.111	.226**	.248**
	Sig. (2-tailed)	.000	.000	.005	.091	.000	.000
	N	236	236	235	235	235	235
Q29	Pearson Correlation	.398**	.543**	.121	-.003	.140*	.142*
	Sig. (2-tailed)	.000	.000	.067	.969	.034	.031
	N	233	233	232	232	232	232

Correlations

		Q31	Q32	Q33	Q34	Q35	Q36
Q30	Pearson Correlation	.687**	.499**	.148*	.071	.239**	.354**
	Sig. (2-tailed)	.000	.000	.024	.280	.000	.000
	N	235	235	234	234	234	234
Q31	Pearson Correlation	1	.547**	.148*	.143*	.244**	.339**
	Sig. (2-tailed)	.	.000	.023	.029	.000	.000
	N	236	236	235	235	235	235
Q32	Pearson Correlation	.547**	1	.211**	.057	.216**	.280**
	Sig. (2-tailed)	.000	.	.001	.382	.001	.000
	N	236	236	235	235	235	235
Q33	Pearson Correlation	.148*	.211**	1	.394**	.647**	.528**
	Sig. (2-tailed)	.023	.001	.	.000	.000	.000
	N	235	235	237	237	237	237
Q34	Pearson Correlation	.143*	.057	.394**	1	.595**	.513**
	Sig. (2-tailed)	.029	.382	.000	.	.000	.000
	N	235	235	237	237	237	237
Q35	Pearson Correlation	.244**	.216**	.647**	.595**	1	.691**
	Sig. (2-tailed)	.000	.001	.000	.000	.	.000
	N	235	235	237	237	237	237
Q36	Pearson Correlation	.339**	.280**	.528**	.513**	.691**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	235	235	237	237	237	237
Q37	Pearson Correlation	.301**	.277**	.579**	.461**	.610**	.807**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	235	235	237	237	237	237
Q38	Pearson Correlation	.328**	.247**	.092	.103	.136*	.157*
	Sig. (2-tailed)	.000	.000	.160	.116	.037	.016
	N	235	235	236	236	236	236
Q39	Pearson Correlation	.334**	.251**	.026	.050	.072	.186**
	Sig. (2-tailed)	.000	.000	.696	.443	.267	.004
	N	236	236	237	237	237	237
Q40	Pearson Correlation	.061	-.036	-.027	.073	.044	.054
	Sig. (2-tailed)	.357	.580	.682	.265	.503	.413
	N	233	233	234	234	234	234
Q41	Pearson Correlation	.140*	.085	-.229**	-.318**	-.197**	-.161*
	Sig. (2-tailed)	.032	.192	.000	.000	.002	.013
	N	236	236	237	237	237	237
Q42	Pearson Correlation	.133*	.124	-.152*	-.267**	-.144*	-.151*
	Sig. (2-tailed)	.042	.058	.020	.000	.027	.021
	N	234	234	235	235	235	235
Q43	Pearson Correlation	.230**	.183**	.099	.053	.056	.149*
	Sig. (2-tailed)	.000	.005	.128	.417	.394	.022
	N	236	236	237	237	237	237
Q44	Pearson Correlation	.189**	.148*	.140*	.084	.127	.257**
	Sig. (2-tailed)	.004	.024	.032	.201	.053	.000
	N	232	232	233	233	233	233
Q45	Pearson Correlation	.179**	.155*	.129	.160*	.202**	.283**
	Sig. (2-tailed)	.006	.019	.050	.015	.002	.000
	N	230	230	231	231	231	231
Q46	Pearson Correlation	-.016	-.016	.040	-.050	.008	-.006
	Sig. (2-tailed)	.807	.812	.547	.452	.902	.933
	N	229	229	230	230	230	230

Correlations

		Q37	Q38	Q39	Q40	Q41	Q42
Q13	Pearson Correlation	.214**	.207**	.232**	.111	.050	.082
	Sig. (2-tailed)	.001	.001	.000	.094	.445	.216
	N	232	232	233	230	233	231
Q14	Pearson Correlation	.235**	.217**	.249**	.133*	.030	.076
	Sig. (2-tailed)	.000	.001	.000	.042	.652	.249
	N	235	235	236	233	236	234
Q15	Pearson Correlation	.192**	.181**	.258**	.092	.031	.064
	Sig. (2-tailed)	.003	.005	.000	.161	.633	.329
	N	235	235	236	233	236	234
Q16	Pearson Correlation	-.070	-.081	.108	.244**	-.052	-.124
	Sig. (2-tailed)	.283	.216	.098	.000	.429	.059
	N	235	235	236	233	236	234
Q17	Pearson Correlation	.022	.059	.009	.042	.053	.045
	Sig. (2-tailed)	.739	.369	.893	.524	.420	.497
	N	234	234	235	232	235	233
Q18	Pearson Correlation	.312**	.250**	.238**	.046	.103	.149*
	Sig. (2-tailed)	.000	.000	.000	.482	.115	.023
	N	234	234	235	232	235	233
Q19	Pearson Correlation	.534**	.252**	.092	-.061	.024	.033
	Sig. (2-tailed)	.000	.000	.159	.355	.710	.616
	N	234	234	235	232	235	233
Q20	Pearson Correlation	.414**	.255**	.192**	.060	-.043	.019
	Sig. (2-tailed)	.000	.000	.003	.364	.516	.777
	N	235	235	236	233	236	234
Q21	Pearson Correlation	.220**	.160*	.163*	.025	.052	.072
	Sig. (2-tailed)	.001	.014	.012	.707	.429	.273
	N	234	234	235	232	235	233
Q22	Pearson Correlation	.346**	.290**	.254**	-.026	.109	.152*
	Sig. (2-tailed)	.000	.000	.000	.689	.097	.020
	N	234	234	235	232	235	233
Q23	Pearson Correlation	.231**	.316**	.276**	.056	.124	.166*
	Sig. (2-tailed)	.000	.000	.000	.399	.058	.011
	N	235	235	236	233	236	234
Q24	Pearson Correlation	.283**	.206**	.241**	-.039	.160*	.184**
	Sig. (2-tailed)	.000	.002	.000	.556	.014	.005
	N	234	234	235	232	235	233
Q25	Pearson Correlation	.297**	.265**	.240**	.008	.121	.108
	Sig. (2-tailed)	.000	.000	.000	.906	.064	.101
	N	234	234	235	232	235	233
Q26	Pearson Correlation	.264**	.251**	.247**	.033	.115	.141*
	Sig. (2-tailed)	.000	.000	.000	.620	.078	.031
	N	234	234	235	232	235	233
Q27	Pearson Correlation	.162*	.229**	.177**	.126	-.005	.049
	Sig. (2-tailed)	.014	.001	.007	.059	.945	.462
	N	229	228	229	226	229	227
Q28	Pearson Correlation	.220**	.327**	.280**	.114	.090	.169**
	Sig. (2-tailed)	.001	.000	.000	.083	.169	.010
	N	235	235	236	233	236	234
Q29	Pearson Correlation	.152*	.131*	.126	.147*	-.022	.031
	Sig. (2-tailed)	.021	.046	.054	.026	.738	.636
	N	232	232	233	230	233	231

Correlations

		Q37	Q38	Q39	Q40	Q41	Q42
Q30	Pearson Correlation	.297**	.304**	.264**	.022	.184**	.195**
	Sig. (2-tailed)	.000	.000	.000	.737	.005	.003
	N	234	234	235	232	235	233
Q31	Pearson Correlation	.301**	.328**	.334**	.061	.140*	.133*
	Sig. (2-tailed)	.000	.000	.000	.357	.032	.042
	N	235	235	236	233	236	234
Q32	Pearson Correlation	.277**	.247**	.251**	-.036	.085	.124
	Sig. (2-tailed)	.000	.000	.000	.580	.192	.058
	N	235	235	236	233	236	234
Q33	Pearson Correlation	.579**	.092	.026	-.027	-.229**	-.152*
	Sig. (2-tailed)	.000	.160	.696	.682	.000	.020
	N	237	236	237	234	237	235
Q34	Pearson Correlation	.461**	.103	.050	.073	-.318**	-.267**
	Sig. (2-tailed)	.000	.116	.443	.265	.000	.000
	N	237	236	237	234	237	235
Q35	Pearson Correlation	.610**	.136*	.072	.044	-.197**	-.144*
	Sig. (2-tailed)	.000	.037	.267	.503	.002	.027
	N	237	236	237	234	237	235
Q36	Pearson Correlation	.807**	.157*	.186**	.054	-.161*	-.151*
	Sig. (2-tailed)	.000	.016	.004	.413	.013	.021
	N	237	236	237	234	237	235
Q37	Pearson Correlation	1	.157*	.150*	.051	-.186**	-.155*
	Sig. (2-tailed)	.	.016	.021	.434	.004	.018
	N	237	236	237	234	237	235
Q38	Pearson Correlation	.157*	1	.492**	.169**	.371**	.318**
	Sig. (2-tailed)	.016	.	.000	.010	.000	.000
	N	236	237	237	234	237	235
Q39	Pearson Correlation	.150*	.492**	1	.254**	.268**	.233**
	Sig. (2-tailed)	.021	.000	.	.000	.000	.000
	N	237	237	238	235	238	236
Q40	Pearson Correlation	.051	.169**	.254**	1	-.166*	-.186**
	Sig. (2-tailed)	.434	.010	.000	.	.011	.004
	N	234	234	235	235	235	234
Q41	Pearson Correlation	-.186**	.371**	.268**	-.166*	1	.783**
	Sig. (2-tailed)	.004	.000	.000	.011	.	.000
	N	237	237	238	235	238	236
Q42	Pearson Correlation	-.155*	.318**	.233**	-.186**	.783**	1
	Sig. (2-tailed)	.018	.000	.000	.004	.000	.
	N	235	235	236	234	236	236
Q43	Pearson Correlation	.073	.509**	.376**	.093	.311**	.182**
	Sig. (2-tailed)	.266	.000	.000	.156	.000	.005
	N	237	237	238	235	238	236
Q44	Pearson Correlation	.205**	.316**	.244**	.080	.051	.080
	Sig. (2-tailed)	.002	.000	.000	.223	.440	.228
	N	233	233	234	231	234	232
Q45	Pearson Correlation	.211**	.339**	.257**	.076	.067	.007
	Sig. (2-tailed)	.001	.000	.000	.249	.310	.914
	N	231	231	232	229	232	230
Q46	Pearson Correlation	.011	.123	.071	-.117	.173**	.165*
	Sig. (2-tailed)	.868	.063	.285	.077	.008	.012
	N	230	230	231	228	231	229

Correlations

		Q43	Q44	Q45	Q46
Q13	Pearson Correlation	.214**	.155*	.177**	-.011
	Sig. (2-tailed)	.001	.019	.007	.869
	N	233	229	228	227
Q14	Pearson Correlation	.228**	.155*	.148*	-.019
	Sig. (2-tailed)	.000	.018	.024	.771
	N	236	232	230	229
Q15	Pearson Correlation	.202**	.174**	.178**	-.018
	Sig. (2-tailed)	.002	.008	.007	.790
	N	236	232	230	229
Q16	Pearson Correlation	-.044	-.039	-.037	-.209**
	Sig. (2-tailed)	.502	.554	.582	.001
	N	236	232	230	229
Q17	Pearson Correlation	.090	.184**	.140*	.060
	Sig. (2-tailed)	.169	.005	.034	.371
	N	235	231	229	228
Q18	Pearson Correlation	.249**	.202**	.224**	.012
	Sig. (2-tailed)	.000	.002	.001	.863
	N	235	231	229	228
Q19	Pearson Correlation	.189**	.199**	.178**	.034
	Sig. (2-tailed)	.004	.002	.007	.614
	N	235	231	229	228
Q20	Pearson Correlation	.235**	.127	.177**	.021
	Sig. (2-tailed)	.000	.053	.007	.755
	N	236	232	230	229
Q21	Pearson Correlation	.182**	.178**	.216**	.063
	Sig. (2-tailed)	.005	.007	.001	.340
	N	235	231	229	228
Q22	Pearson Correlation	.247**	.228**	.200**	.088
	Sig. (2-tailed)	.000	.000	.002	.185
	N	235	231	229	228
Q23	Pearson Correlation	.216**	.138*	.182**	.090
	Sig. (2-tailed)	.001	.036	.006	.175
	N	236	232	230	229
Q24	Pearson Correlation	.247**	.124	.181**	.058
	Sig. (2-tailed)	.000	.060	.006	.379
	N	235	231	229	228
Q25	Pearson Correlation	.335**	.208**	.249**	.193**
	Sig. (2-tailed)	.000	.001	.000	.003
	N	235	231	229	228
Q26	Pearson Correlation	.192**	.201**	.217**	.064
	Sig. (2-tailed)	.003	.002	.001	.336
	N	235	231	229	228
Q27	Pearson Correlation	.088	.142*	.065	.008
	Sig. (2-tailed)	.185	.033	.337	.904
	N	229	225	223	222
Q28	Pearson Correlation	.175**	.201**	.161*	-.090
	Sig. (2-tailed)	.007	.002	.015	.175
	N	236	232	230	229
Q29	Pearson Correlation	.064	.094	.078	-.183**
	Sig. (2-tailed)	.328	.157	.240	.006
	N	233	229	227	226

Correlations

		Q43	Q44	Q45	Q46
Q30	Pearson Correlation	.317**	.164*	.139*	.012
	Sig. (2-tailed)	.000	.013	.035	.862
	N	235	231	229	228
Q31	Pearson Correlation	.230**	.189**	.179**	-.016
	Sig. (2-tailed)	.000	.004	.006	.807
	N	236	232	230	229
Q32	Pearson Correlation	.183**	.148*	.155*	-.016
	Sig. (2-tailed)	.005	.024	.019	.812
	N	236	232	230	229
Q33	Pearson Correlation	.099	.140*	.129	.040
	Sig. (2-tailed)	.128	.032	.050	.547
	N	237	233	231	230
Q34	Pearson Correlation	.053	.084	.160*	-.050
	Sig. (2-tailed)	.417	.201	.015	.452
	N	237	233	231	230
Q35	Pearson Correlation	.056	.127	.202**	.008
	Sig. (2-tailed)	.394	.053	.002	.902
	N	237	233	231	230
Q36	Pearson Correlation	.149*	.257**	.283**	-.006
	Sig. (2-tailed)	.022	.000	.000	.933
	N	237	233	231	230
Q37	Pearson Correlation	.073	.205**	.211**	.011
	Sig. (2-tailed)	.266	.002	.001	.868
	N	237	233	231	230
Q38	Pearson Correlation	.509**	.316**	.339**	.123
	Sig. (2-tailed)	.000	.000	.000	.063
	N	237	233	231	230
Q39	Pearson Correlation	.376**	.244**	.257**	.071
	Sig. (2-tailed)	.000	.000	.000	.285
	N	238	234	232	231
Q40	Pearson Correlation	.093	.080	.076	-.117
	Sig. (2-tailed)	.156	.223	.249	.077
	N	235	231	229	228
Q41	Pearson Correlation	.311**	.051	.067	.173**
	Sig. (2-tailed)	.000	.440	.310	.008
	N	238	234	232	231
Q42	Pearson Correlation	.182**	.080	.007	.165*
	Sig. (2-tailed)	.005	.228	.914	.012
	N	236	232	230	229
Q43	Pearson Correlation	1	.364**	.288**	.216**
	Sig. (2-tailed)	.	.000	.000	.001
	N	238	234	232	231
Q44	Pearson Correlation	.364**	1	.692**	.322**
	Sig. (2-tailed)	.000	.	.000	.000
	N	234	234	232	231
Q45	Pearson Correlation	.288**	.692**	1	.316**
	Sig. (2-tailed)	.000	.000	.	.000
	N	232	232	232	230
Q46	Pearson Correlation	.216**	.322**	.316**	1
	Sig. (2-tailed)	.001	.000	.000	.
	N	231	231	230	231

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX D

SWOT ANALYSIS – STRENGTHS

Item No. 47: List one strength you see in receiving education through a Web-based Training Program.

CWBTNA Part 3: Access

- Portability – easy to do nearly anywhere.
- Easy access to remote clinics.
- Easy access.
- You can do it at work on the computer.
- Easy to access/to use.
- The convenience of completing the education at my work station.
- Access – coverage.
- Always available.
- I love being able to access CEUs on the HealthNet.
- It's accessible or available at any time.
- Available at anytime.
- Access at anytime – what's most convenient for your schedule at work.

CWBTNA Part 5: Knowledge (Motivation to Transfer Learning)

- Reading the information on the computer makes me retain more than listening to an instructor.
- Opportunity for advancement.
- More advanced at the job site.
- Learning new information.
- To do my job better.
- Strengthening my computer skills.
- It feels like on the job training as opposed to just being told how to do it.
- You do learn about how to move about on the web site.
- Ability to challenge myself.
- I have learned how to use the computer even better.
- Mind growth.
- Increased knowledge.
- Further my knowledge in using the computer and learning to work without guidance.
- Keep up with all new education.
- Availability of new information at work station.
- Increase knowledge to perform my job better.
- For visual learners, it is a good thing.
- The more knowledge one has, the better equipped you are a doing your job.

CWBTNA Part 6: WBT Preference (WBT over classroom)

- Don't have to sit in class.

- You don't have to worry about being in a classroom setting.
- Able to track your success in completion.
- Allows one not to miss work.
- You don't have to miss work.

CWBTNA Part 6: WBT Preference (Work independently and at my own pace)

- Choose my own pace and time.
- Convenience.
- Time allotted to complete is more flexible.
- Can receive training on own schedule.
- Able to work at own pace.
- Time to work at your own speed.
- Working at my own pace.
- Work at your own pace.
- Time saving – do at your own pace.
- Take your time.
- At your own pace, does not interfere with patient care (rescheduling appointments & blocking schedules).
- Able to complete at my pace. Not taking time away from my family.
- Do it at your down time.
- It could be done at a set pace made by myself.
- Can be done when time permits.
- I can work at my own pace.
- At own pace.
- You can go at your own pace.
- Learning at your own pace.
- Can work at your own pace.
- You can do it at your own pace and time.
- Flexibility.
- Easier to find time for versus classroom training.
- Can do it on own timing.
- Flexibility.
- Convenience.
- At your own pace.
- Able to take at my convenience without taking me away from job.
- I can work at my own pace.
- Convenient for busy clinics.
- Ability to coordinate with my schedule.
- It lets you work at your own pace.
- Do it at your own pace.
- It can be done at my convenience when my doctor is out of office.

- I am able to do training on my schedule. I have a few minutes downtime at the end of the day I can use it for education.
- You can do it when you have downtime.
- Can be done when convenient for employee.
- Self-paced, reasonable, self-motivational.
- Fits into daily work schedule.
- Individualize time.
- Education at self-paced learning.
- Self-paced.
- Convenience.
- Flexibility in schedule.
- The ability to work at your own pace, go through it step by step.
- Performing at your own pace.
- Work own pace.
- Able to receive education at time that is convenient.
- Can be done at my own pace.
- You can work at your own pace.
- Self-paced.
- I can do it when it is convenient time wise.
- Own pace.
- Work at my own pace, at my choice of setting and time. Can review later if needed.
- It's convenient and at your own pace.
- Work at own pace.
- Can take it when time is available.
- Convenience.
- Convenience.
- I can do it at my own time without it interrupting my work schedule. Also, I can self-pace myself.
- Convenience, done at my speed and time.
- I can do it at my own pace.
- Own time, pace.
- Do at my pace.
- Can go at own pace.
- At my own pace.
- Convenience!
- Can do on your own time.
- Being able to work at my own pace.
- Can do it at my pace.
- Work at your own pace.
- Convenience!
- Learn at own pace.

- Learning at my own pace.
- Do at your convenience and increase knowledge.
- I can go at my own pace and I learn better that way.
- Train at your own pace.
- Training times are more convenient.
- Do at own pace.
- You learn at your own pace.
- Convenience.
- Ability to go at your own pace.
- More personal.
- You can work at your own pace.
- Work at my own pace.
- Flexible time and location of training.
- Independence.
- Self-paced.
- Able to complete at own pace.
- More convenient.
- Self-paced.
- Can do on my time.
- It can be done at more convenient time.
- Can be used at a time of convenience.
- More convenient.
- Work at own pace.
- Work at your own pace.
- Can be done at one's convenience.
- Can do training at my own time.
- Be able to take it at my own time and pace.
- Convenience.
- Work at your own pace.
- Individual paced learning.
- Individual pace.
- Reading and concentrating on subject on an individual basis.
- At times materials can be printed. Can do at own pace.

CWBTNA Part 6: WBT Preference (Takes more time than classroom)

- More time.

CWBTNA Part 6: WBT Preference (Saves time)

- Less time away from patients.
- Less time.
- Faster to complete.
- Time saving, can do at convenient time for me.

- I feel it is a low faster and accurate.
- Less time (maybe).
- Time.
- Faster.
- Fast??
- Less time away from work.
- Being able to work faster.
- Faster paced training.
- Less time away from work.
- Saves time away from work.
- Sometime it is faster.
- Time management.
- Easier and faster.
- Less time away from my clinic.
- Allows me to better utilize my time.
- Timeliness.
- Time.
- Not much time away from work.
- Saves time.
- Information is quick and you do not have to miss work.
- Less time away from office/job.
- No wasted class time.
- Time management, you can receive an education while still at home or with your family or job.
- Less time consuming.
- Time saving.
- If given time to do this, it would be great time saving way to train.
- Less time away from job duties.
- Less time away from work.
- Time saving.
- Less time than if it were classroom based.
- Time saving.
- Faster. No expense for classroom.
- Less time and not taken away from job.
- Save time.
- Less time asking someone to help.
- Should be quicker.
- Less time away from your department.

CWBTNA Part 6: WBT Preference (No travel from home office)

- Not having to drive to Tyler from Athens.
- No travel plus costs.
- Less time consuming be able to do it at our site and not having to leave and go to another site.
- You don't have to leave your work area.
- Can do it at work and not drive to Tyler.
- Not having to drive to Tyler.
- Less travel.
- I can do it at my work and not have to take time to go to class.
- Don't have to drive.
- No parking issues.
- Do not waste time traveling.
- You can do it at work without having to take time off for a class.
- I don't have to drive to Tyler.

CWBTNA Part 6: WBT Preference (Able to review work)

- You can return to Web training for follow up problems.
- To be able to go back and review. If training was not "live".
- I can always go back if I miss something and review.
- You may have access to repetition w/o disrupting a class if the program is set up for that.
- You can go back over your training (work).

CWBTNA Other/Miscellaneous

- Cost effective.
- It would be more cost effective; by cutting down on time and gas dollars used to get to where a live classroom would be at and back.
- I don't know.
- Large training base w/lots of programs available.
- Get the knowledge of both courses on-line.

CWBTNA Strengths Response of 'None' = 3

CWBTNA Strengths Response 'Left question blank' = 27

SWOT ANALYSIS –WEAKNESSES

No. 48: List one weakness you see in receiving education through a Web-based Training Program.

CWBTNA Part 3: Computer Access (Individual, Shared, Location)

- You have to have computer access. I work in a satellite clinic one day a week that has not computer access.
- Computer availability.
- Our computer is located in a busy work station.
- Access to web after work.
- Not having access.

CWBTNA Part 3: Computer Access (Technology challenges)

- System crashes a lot.
- If the web is down.
- Computer down. No time to do it.
- Technology, if you have a slow computer or power outage you are unable to complete/start training via computer.
- Computer freeze, unsaved or deleting by mistake.

CWBTNA Part 5: Computer Knowledge (Satisfaction)

- Increase my knowledge of the web.

CWBTNA Part 5: Computer Knowledge (Frustration)

- For those not computer savvy you get bogged down and frustrated, also finding the time to do it.
- Everybody can't work computers and sometimes w/that being said people might delay work.
- Computer skills not great.

CWBTNA Part 6: WBT Preference (Face-to-face interaction with the instructor)

- Not getting to ask questions if needed.
- Not being able to have one on one contact with instructor.
- Unable to ask specific questions.
- What if questions arise? Lacks person to person net working and sharing.
- Limited opportunity to ask questions, etc.
- No one to ask questions to.
- Face to face interaction with instructor.
- Not having someone there for questions.
- If you don't understand, no one to talk to.
- Sometimes people learn better by visual and hearing people speak.

- Possible questions regarding material. Who to ask and when is the best time to contact.
- Not able to ask another when you have a question.
- No questions will be asked by group.
- Not getting immediate answers to questions.
- If you need additional help or answers.
- Can't ask questions.
- Possibly inability to get any answers right then and there.
- Interaction and question/answer sessions
- I have no instructor present for questions.
- Nobody to ask questions.
- Any errors or problem there is not instructor.
- Questions cannot be addressed.
- If you need something clarified by educator.
- No face to face with person.
- No opportunity for questions.
- I like learning with an educator because they can answer all questions you may have.
- Personal interaction with peers and easier to understand with classroom training.
- Lack of face to face with instructor.
- No face to face immediate interaction for comments, questions, etc.
- Who will be able to answer questions?
- Not being face to face with a person regarding questions.
- Possible limitation for asking questions.
- Not being able to ask questions about a subject or discuss a subject.
- No instructor.
- Miss out on interaction with an instructor, some people learn better when in a classroom setting.
- Face to face instructor.
- No one "live" to answer questions.
- Loose one on one interaction.
- Unable to ask questions for clarification.
- Can't ask questions.
- No face to face interaction.
- No one to ask questions.
- No opportunity to ask questions.
- No opportunity for peer input.
- No extra help if you need it.
- If you have a question about something finding who and where to get answer can pose a problem.
- Not having a person there to ask questions.
- Not able to answer a question if any.

- Inability to ask questions.
- Can't ask questions.
- Less opportunity to ask questions.
- Unable to ask questions.
- Not everyone would complete educational programs/not able to ask questions.
- What if I have question about the material?
- Lost opportunity for face to face interaction with other nurses at TMF and clinics.
- No face to face to seek clarification.
- Inability to clarify questions.
- If there is something I don't understand, no one to discuss it with.
- No one there if you don't understand.
- Not able to ask questions. Unable to ask questions if needed.
- No one to ask questions if you don't understand.
- Can't ask questions. Inability to ask questions if needed.
- No one to ask questions.
- Person to person guidance when stuck on something.
- Cannot ask questions.
- Unable to ask questions.
- There's no one on one contact with teacher.
- Lack of personal reinforcement.
- The possibility of an actual human instructor not being there to talk to.
- Any questions.
- Can't ask questions.
- Delay with any questions or help needed to understand.
- Cannot interact with instructor.
- One on one.
- No one on one.
- I can't ask questions.
- No instructor if you have questions.
- Not able to ask questions to an instructor if needed.
- Cannot ask questions.
- I can't ask questions.
- Not having the instructor to help me face to face.
- If doesn't understand or have questions.
- No one to ask questions.
- Not always able to find answers to questions.
- Many learn better through the contact with a person!
- No live instructor.
- No one to answer questions if they arise.
- No one to ask questions.
- No interaction with instructor.
- Can't get immediate answer to questions.

- Will miss teacher/student relationship.
- If you require face to face interaction to learn web-based can make it difficult.
- No instructor to ask questions.
- Person to person interaction.
- Can't ask questions.
- Questions are hard to get answered.
- Quick answers to questions.
- Questions, no one to direct them to.
- Interaction is low with teacher and others.
- No discussion about what we learned.
- There is no one there to ask questions if need be.
- No questions and answers if needed.
- No face to face interaction with teacher.
- Won't have teachers input and guidance.
- Questions to be answered, are they answered?
- I learn better face to face.
- If there's questions and answers not found in information given.
- Inability to ask questions immediately with feedback.
- Face to face interaction.
- Less personal, questions with educational staff.
- Not as thorough.
- No one on one.
- Not able to ask questions.
- Can't clarify information or ask questions.
- Can't ask questions.
- When not understanding and needing an instructor.
- Help if needed.
- Weak support group.
- Not as instructive.
- No personal education.
- No one on one contact with instructor.
- No ability to ask questions.

CWBTNA Part 6: WBT Preference (Rely on the instructor)

- Harder to understand.
- I do not always understand some of the things.
- Some people do not learn well that way.
- It can be boring.
- All learners learn through different means.
- I'm a very slow reader.
- My weakness is that I am a visual learner.
- Getting lost.

- May not understand information provided.
- Not understanding the material clear enough.

CWBTNA Part 6: WBT Preference (Hands on)

- No personal hands on interaction.
- No hands on training.
- It's not hands on learning.
- There would be no hands on training.
- I see no weakness. Maybe the hands on experience that we would have in a classroom.
- No hands on.
- I like more hands on and interaction.
- Sometimes hands-on training is much better.

CWBTNA Part 6: WBT Preference (Finding unscheduled time)

- Finding time that is unscheduled to do training.
- At work there is no time.
- No time to stop and read some things that are already being used in my work place.
- Finding time to do it.
- Finding the time out of the work day to complete the training.
- Finding the time.
- Time.
- Finding the time in your work day to do the training.
- Taking time out of the regular work day.
- Finding time to do it during your busy day.
- Having time to do education.
- Being able to get off work to go.
- Having time.
- Distractions at work, no time if done at work site.
- No time during work day to do this.
- It is very hard here to take quite time to do Web-Training. We are expected to do this on work lunch hour or take time away from patients.
- Don't have much time to do it.
- Sometimes it is hard to find the time.
- Taking time out of work day.
- Finding time when it is busy, especially when there is a deadline.
- Not able to use computer for training at work, too busy training care of patients.
- Hard to find any time to get on for extra.
- Having time to access/do training.
- Not enough time during work day to complete.
- Time away from work.

CWBTNA Part 6: WBT Preference (Procrastination)

- May need reminders to do it.
- Procrastination.
- Procrastination.
- Increase put off time
- I would probably tend to procrastinate.
- Have to take it at own pace, procrastination.

CWBTNA Other/Miscellaneous Comments

- Having to stop and do other things.
- Interruptions.
- May leave something out.
- Training is a problem and we don't receive it properly.
- Needs to be done during daily hours.
- One might learn it wrong and still have to go through a class.
- Having to miss work.
- Reading smaller print.
- I don't know.

CWBTNA Weaknesses Response of 'None' = 13

CWBTNA Weaknesses Response 'Left question blank' = 30

SWOT ANALYSIS – OPPORTUNITIES

No. 49: List one opportunity you could benefit by having a Web-based Training program.

CWBTNA Part 3: Computer Access at work for training.

- Always available when it is needed.
- Could be done at work.
- Education right there on a computer you have in your hand all day, do it as you have time.
- You can do it at work.
- Do it at work.
- Access when needed, continuing education to perform job duties.
- Access anytime.
- Can do the training from desk.
- It can be done at home.
- Train at home.
- If could access from home.

CWBTNA Part 5: Computer Knowledge (Computer frustration)

- Step by step training and learning with computer programs, classes seem to go too fast sometimes.

CWBTNA Part 5: Computer Knowledge (Motivation to transfer continuing education)

- CEU being kept current.
- Completing my CEUs.
- CEUs free for our license.
- Contact hours.
- Collecting my 20 hours credit for CEUs for license renewal/rather than go to seminars for credit.
- Continuing my education.
- More opportunity for CE.

CWBTNA Part 5: Computer Knowledge (Motivation to transfer general learning)

- Doing my job.
- Knowledge at my fingertips.
- Learn more to help me with my job.
- More opportunities to increase knowledge and/or skills.
- Learning more.
- Extra knowledge and assistance.
- Further my skills/training knowledge.
- Learn more/more opportunities.
- One on one, ability to demonstrate skills.

- Updating skills.
- Just learn more.
- Excel-PowerPoint training.
- Allows ability to get more education.
- Access more training.
- Learn more.
- Further education.
- Learning a new skill or refreshing a skill.
- Learn more.
- It very informational.
- More education and updates on new information.
- Furthering experience/education.
- Learning.
- I could learn more!!
- Increasing knowledge and ability at current duties.
- Better learning of concepts; have to pay attention to what you read.
- Increased knowledge to provide better patient care.
- More available educational subjects.
- More skills learned for better on the job performance.

CWBTNA Part 5: Computer Knowledge (Motivation to transfer computer knowledge)

- Learn the computer better.
- More comp experience.
- Learning new skills on computer.
- Learning better computer skills.
- More internet training.
- More computer experience.
- Better understanding of computers.
- Computer use in a new area.
- A broader knowledge of the perks of Intranet.
- Learn more computer skills.
- Increase computer use knowledge.
- Increase computer knowledge.
- Possibly improving computer skills.
- I would save time and dollars; and hopefully be able to learn more about computers.
- Learning to expand knowledge of computer usage.
- Increase computer knowledge.
- Computer skills.
- Increase computer skills.
-

CWBTNA Part 6: WBT Preference (WBT over classroom)

- Not having to leave my job and someone has to cover.
- No extra time to go to class.
- You can do it when you get a chance where as you have to make plans to go to classroom.
- Never leave your work area.
- Not having to leave work facility.
- Being able to go back and look at previous lessons.
- Go back and review when needed.
- Miss less work if training done on line.
- Would allow for more training than if you had to go to a meeting.
- To attend training. It is difficult to schedule time away from clinic for classes in classroom setting.
- Stay at work site.
- Not having to go to class!
- Not having to miss work.
- Not going to a classroom.
- Don't have to leave work.
- Not having to leave work to go to a classroom.
- Same as above, less time away from office.
- Not missing work.
- Not having to leave the work station.
- Do not have to leave office under staffed or go before/after hours when child care may be difficult.
- Easier to schedule to attend than leaving work.
- When your schedule is too busy to get away for an in-service.
- Not having to leave clinic.
- Easier to get everyone's turned in and do not have to arrange for coverage to get people to class.

CWBTNA Part6: WBT Preference (Prefer to work independently and/or at my own pace)

- Fits in well with schedule.
- Time to work at your own speed.
- Something new at my own pace.
- More freedom to complete at a time that is convenient to schedule, doctor and patients.
- You can work around your schedule.
- Could do training when I have the time.
- Allow us to be at work station more.
- Convenience of doing anytime, not just scheduled time.
- Work at own pace.
- Hands on, working through the steps.

- Being able to do on own time.
- Work at your own pace.
- You could complete it at anytime, in between projects at work.
- More convenient.
- Being able to access at my convenience when I don't have patients.
- Short ones could be completed prior to workday getting busy.
- Could use during downtime.
- Do it at a time when it doesn't interfere with other necessary work.
- Do training on your own time.
- Finding time to do while seeing patients.
- Convenience of time.
- Flexibility.
- Fit into my schedule (staffing).
- Could be taken at my leisure.
- Setting my own pace.
- Working at my own pace and not being rushed.
- Learning at your own pace.
- I would be able to work on my own pace.
- Learn at one pace.
- I can do it when I get time.
- Work at our own schedule.
- Has a slide show where you can read/learn at your own pace.
- Self-pacing.
- Convenience.
- Could work it into my schedule.
- Chose my own time and training.
- Able to move at my own pace. No pressure to complete by an allotted time.
- Getting to it instead of waiting for class.
- Working at your own pace.

CWBTNA Part 6: WBT Preference (Time saving)

- Less time consuming.
- I seem to learn quicker than others finish learning and get back to patient care.
- More time for other things.
- Less time.
- Non-time consuming.
- Easier, quicker, less time consuming.
- My timely completion of my work.
- It seems faster and expedient.
- Less time off from my job.
- Get it done quickly, on job, without having to leave site.
- Learning more at a faster pace.

- Learning opportunities achieved quicker.
- Less time spent.
- More time.
- Saving time.

CWBTNA Part 6: WBT Preference (Face to face important)

- If you require face to face interaction to learn web-based can make it difficult.

CWBTNA Part 6: WBT Preference (No travel from home office)

- Not having to drive 2 hours to Tyler.
- Could be done in clinic without traveling to a classroom.
- Able to set training without having to drive to Tyler.
- Being better able to assist others when they have computer problems. Not having to travel long distance to take a class.
- Not having to drive to Tyler.
- Less traveling time to and from places.
- No travel from home office.
- Not having to travel.
- Easy access without drive time.

CWBTNA Part 6: WBT Preference (Miscellaneous)

- Frequency of training.
- Keep up with courses taken.
- I could do more research for the committees I serve on.
- Computer upgrades more readily available.
- More courses.
- Further my education.
- Keep up to date on things easier.
- Medication update.
- Annual MA update.
- More experience with learning.
- More varieties of courses offered.
- The opportunity for more training and options.
- Not missing a class.
- Large selection of programs.

CWBTNA Other/Miscellaneous

- Don’t know.
- I don’t know.
- Not Sure.
- ?
- We can eliminate paper chars which helps us also.

- ?

CWBTNA Opportunity Response of ‘None’ = 8

CWBTNA Opportunity Response ‘Left question blank’ = 58

SWOT ANALYSIS –THREATS

No. 50: List one threat you see in receiving education through a Web-based Training Program.

CWBTNA Part 3: Computer Access at work for training

- Network instability
- Access to equipment.
- Computer problems.
- Having to find help if unable to access.
- When the system is down and unable to access.
- Computer glitches may delete my information?
- Computer or system delays.
- Computer malfunctions, occasional inaccessibility.
- Computer crashing, viruses.
- Trying to find an unoccupied computer in a quiet area.
- Computer malfunction.
- Taking time to access material.
- IT Support.
- Programs failing.

CWBTNA Part 5: Computer Knowledge (Frustration)

- Difficult to learn.
- Apprehension of learning something new.
- Frustration, isolation.
- It could be a challenge for those who don't have good computer skills.
- Not been able to have all the skills needed to navigate web computer programs.
- Anxiety over new training.
- Difficult working through training program. I have limited computer skills.
- Misunderstanding programs or misinterpreting something vital.
- Computer skill.
- For others, lack of computer knowledge.
- Negative talk from others who cannot type or know computer.
- Employee willingness/confidence in the ability to do or learn how to use the program.
- New technology.
- Employees who hate computers to trust in doing training on the computer.
- My lack of computer literacy.
- Time consuming or difficult to follow.
- Not learning as much.

CWBTNA Part 6: WBT Preference (Face to face or hands training)

- Sometimes I need to get extra help in an unrushed environment
- There is no one to explain if you don't understand.
- Asking questions if needed.
- Not getting extra help if needed.
- Don't see any unless it is something that has to be demonstrated back.
- Hard to contact someone when we have questions.
- Having questions.
- Questions that may have a need to be addressed but no one to address them with.
- The classroom will be cut off. Individual training from a person will be no longer used.
- No personal interaction, just a number.
- Who will assist with questions?
- Face to face hands on training.
- No one to ask questions.
- It wouldn't be one on one.
- Non compliance for non computer users or those not comfortable with computer.
- Difficult comprehension of modules.
- Not understanding.
- Less interaction with coworkers.
- You may not understand and need clarification.
- Not having an instructor to assist the student.
- I don't comprehend information that I read, as well as "hands-on" instruction.
- Less interaction with instructors.
- Getting only what is programmed in the system and not receiving the personal touch of short cuts, etc.
- Unable to ask questions.
- Not fully understanding the concept from web-based training.
- Not getting full learning of information.
- No hands on or chance to practice. Being able to practice boosts your confidence in your ability to perform the task.
- Again the one on on contact with teachers and being able to ask questions.
- Lack of personal touch.
- No opportunity to ask questions.
- Incomplete or incorrect training.
- Not having the help and interaction of peers.
- Loss of one on one teaching, human element gone.
- Can't ask questions as you could in classroom.
- If you require face to face interaction to learn web-based can make it difficult.
- No one to ask questions.
- No one there to question if you are confused on something.
- Computer limited, can't ask teacher questions.

- Not being able to ask questions.
- When an actual hands on performance may be needed.
- Classroom interaction (important).
- Possibly not being trained properly thru the computer.
- If need help.
- Not having anyone to ask questions.
- Not completely understanding program.
- Not having physical one on one.
- No interaction stimulation.
- Not everyone is going to learn the same way.
- Some people may not be able to do it.
- Did they really understand and will not be able to ask questions.

CWBTNA Part 6: WBT Preference (Finding unscheduled time)

- Finding the time with such a heavy work schedule.
- Time during clinic available to complete training, mandated times.
- Is all about time.
- I don't have any coverage while I do the training.
- Won't take the time to do it properly, spread too thin at work.
- Making the time.
- The time if it's on your own time.
- No time to do it.
- Possibly cause overtime.
- Time consuming while at work. Would be good if education time was allotted to work on the training education.
- Not having the time at work during a regular work day to complete a session. Too many interruptions.
- No time at work to do. Could it be accessed remotely from home?
- No time.
- Finding time to do it at work.
- Takes me away from my duties on the job and my patients.
- I would be expected to do this w/o taking extra time from patients.
- I may never get the time to do it.
- Finding the time.
- People taking too much time to complete.
- Scheduling time at work away from patient care to do web-based training.
- Would be hard to do at work.
- Making time in work hours to do this.
- Designated time to do it.
- Not being able to get to it by dead line.
- Time.

CWBTNA Part 6: WBT Preference (Procrastination)

- Procrastination.
- May not do it on time.
- Making sure employees get training done.
- Procrastination.
- Remember to do it.
- Being self disciplined to do it.
- Forget to do it.
- People forgetting to do it.

CWBTNA Part 6: WBT Preference (Cheating)

- Easy to get help from someone else rather than actually complete program on your own.
- One person in a group reads the training and all share in her/his answers without reading themselves.
- Someone else could do your work for you.
- Cheating.

CWBTNA Other/Miscellaneous

- Financial.
- Money and time needed to invest in set up programs.
- No need for humans who currently hold those training positions.
- Less human contact/sterile studying.
- Unsure!
- Interruptions.
- I don't know.
- The misuse of the web by some that may cause loss of privileges for others.
- Don't know.
- It could interfere with work purposes.
- Less interest and seriousness.
- Employees learning too much and moving on to bigger and better things?
- Maybe not paying close enough attention.
- Interruptions.
- Can't monitor people as well.
- May not get credit for training.

CWBTNA Threats Response of 'None' = 44

CWBTNA Threats Response 'Left question blank' = 61

VITA

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1993 Associate in Applied Science, Nursing, Trinity Valley Community College, Athens, TX
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Professional Experience

1993-Present **Trinity Mother Frances Hospitals & Clinics,** Tyler, TX.
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