

2010

Deterrents to participation in web-based graduate nursing programs

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DETERRENTS TO PARTICIPATION
IN WEB-BASED GRADUATE
NURSING PROGRAMS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The School of Human Resource
Education and Workforce Development

by

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May, 2010

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DEDICATION

This study is dedicated to Linda Markey, the godmother of my son Matthew. Linda called me on the phone and invited me to continue my doctoral studies with her in August 2007. I had already given up on achieving a doctorate in the summer of 2006. I was still grieving the disaster of Hurricane Katrina and my father's death, and had put my books away, saying: "forget about it!" With Linda's invitation, I decided to give it another shot. Come to think of it, as I recall, it was Linda who called and invited me to join her in studying for a master's degree way back in 1989. It looks like I end up owing both of my graduate degrees to Linda! Thanks for being a good buddy.

"What we do is less than a drop in the ocean. But if that drop were missing, the ocean would lack something" (Mother Teresa, 2001, November 12, para. 1).

ACKNOWLEDGEMENTS

I would like to thank my husband Ware for being there for me when I decided not to continue in my first summer of doctoral studies, and for supporting me when I said I would try it again a year later with my friend Linda in the department of Human Resource Education. In everything I have ever gone through in my life; you are always there, taking care of me. Thanks for being the best husband anyone could ever ask for.

I would like to thank my three children. Laura, your sweet smile always encourages me. I still have my little box of cotton that you gave when you were a small child, that I have opened many times while working on this dissertation that says “Smile God loves you.” Andrew, your sincere heart always gives me hope in the future. I still have my little heart shaped note from you when you were little, that you told me to save for times when I was really sad, that says: “I love you, I love you, I love you.” I still read it at those times, and it always brings a smile. Matthew, I owe the success of my doctoral general oral exams to you. I did just what you suggested, when you saw me looking panicked the night before: “Mom, just picture the committee members as your students. Talk to them like you are clarifying things for them, just like you do for your students every day.” I calmly did just that, and the rest is history. You are pretty wise for your 18 years.

To my mom I would like to say that you are my rock. You have been a wonderful mom to me. To Dad, I know you are with the Lord, but I still feel you with me, interceding on so many occasions. To Uncle Vernon, you were my role model for setting a goal and going for it. Although you too are with the Lord, you remain with me in so many ways. To my older brother John, from crabbing at the industrial canal in New Orleans when we were kids, to your taking such wonderful care of Dad when he was ill, we have come a long way. Thanks for being my brother. To my younger brother Michael, you made Dad proud at his funeral when you read to us, your heartfelt letter to him. To my sister Joann, without you I would not laugh and smile half as much. What a joy it is to have you for my

sister. George thanks for loving her so much. To Betty Carpenter, thanks for giving me your son to marry! To Joe, I know you are with the Lord, looking out for all of us with my dad, uncle Vernon, and your brother Earl. I look forward to seeing everyone again some day. To Lisa and Billy, thanks for sharing little Lucy with us. She is a true gift. To Gretchen Karl, Gwen Gernon, and Barbara Maher, thanks for being my Catholic retreat prayer warriors. Dr. Earl Johnson, Professor of HRE Philosophy, would most certainly remind me to say, thanks to “The Practice” as he used to call us, meaning all of the RNs that began this Ph.D. endeavor with me, including Wanda Hughes, Deb Charnley, Chris Gatlin, Carol Tingle, and Linda Markey of the Baton Rouge General Medical Center, where I spent my first 10 years of nursing as a critical care RN. I am the first to cross the Ph.D. finish line, but I know you will all be right behind me, and I will be praying hard for you! To Dr. Glynn Cavin, thanks for being my dissertation cheerleader. To Dr. Kenneth Kungu, thanks for your encouragement and prayers as we raced to our defense dates together! To Kim Hurst, thanks for always being such a solid, level headed, listener. I am so glad you will also graduate from this Ph.D. program in the near future! I will keep praying for you. To Dr. JoAnn Clark, thanks for your help with data collection, and for being a wonderful mentor to me, when you were my Dean at Our Lady of the Lake College many years ago. To Dr. Annette Knobloch, thanks for your SPSS wizardry and your wonderful, fun, support. We sure had some great, delirious midnight laughs over the phone, looking at data. To all of my colleagues at Our Lady of the Lake College, thanks for your support and for your prayers. To my students, I hope this dissertation gives you a desire to overcome deterrents and to return to school, perhaps participating in a web-based program, to get your graduate degree. To all of my neighbors, family, and friends who prayed for me during these years; I say thank you. To the “Jay’s Donuts” crowd, what can I say, except that you keep me smiling! The Ph.D. donut cake was quite impressive at my dissertation defense!

To my committee chair Dr. Krisanna Machtmes, thank you for being such a nurturing professor. You have a real gift for getting things done, while using practical wisdom, kindness, and

encouragement. Dr. Michael Burnett, without you, I would not know how to do research. Dr. Donna Redmann, you were the first professor that I timidly met when I was not so sure I wanted to try again for the Ph.D. You gave me the encouragement to continue to learn. Dr. Earl Johnson, you introduced me to the great thinkers of Socrates, Plato, Aristotle, Augustine and Aquinas; for that I will always be grateful. I was most fortunate to integrate those western philosophers with the study of Pope John Paul II, in an independent study guided by you. Of all my courses, these two, with you, stand out as highlights. Dr. Curtis Friedel, thank you for sharing your love of integrating technology in education. Dr. Rajgopal Kannan, thank you for serving as my Dean's representative, and Dr. Satish Verma, thank you for agreeing to serve as a replacement committee member at the very last minute.

To the Blessed Mother of the Lord Jesus, as Pope John Paul II would say: Totus Tuus! (Mary, I am totally yours).

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ABSTRACT

The purpose of this study was to describe what a sample of registered nurses in the state of Louisiana, who are members of the Louisiana State Nurses' Association (LSNA), identify as deterrents to participation in web-based graduate nursing programs. Two hundred and eighty one RNs participated in the study.

The 54 item four point Likert - type interval scale Deterrents to Participation in Web-Based Graduate Nursing Programs Survey Instrument was utilized to measure what LSNA member RNs identified as deterrents to participation in web-based graduate nursing programs. Eighteen items assessed demographic information about the respondents.

A factor analysis revealed a three factor solution that explained 55.436 % of the total variance in deterrents to participation in web-based graduate nursing programs. The factors were labeled "concerns about quality, cost, and time," "concerns about access to resources: technological and personal," and "concerns about electronic mediated communication." There were four significant findings when comparisons were made with the overall scale mean of the deterrents survey tool. A significant difference was found between computer literacy, current educational status, employment status, and annual household income and the overall scale mean. No significant differences were found between respondents' age, ethnicity, gender, years of being a registered nurse, marital status, number of children, or parents' educational status when compared to the overall scale mean of the deterrents survey tool. Multiple regression analysis revealed an overall model of three predictors of deterrents to participation in web-based graduate nursing programs: no computer literacy, annual household income between 20,000 and 50,000 dollars, and having the current educational status of graduating from a diploma RN program. This model accounted for 21% of the variance in the deterrents to participation scores.

CHAPTER 1

INTRODUCTION

Fang and Tracy (2009) conducted a national survey of nursing programs for the American Association of Colleges of Nursing on vacant faculty positions for the academic year 2009-2010. Respondent nursing schools identified that a limited pool of doctoral prepared faculty was one of the top five critical issues faced by nursing schools in America. Thirty one percent of the vacant faculty positions required a master's degree with a doctorate preferred, and fifty eight percent of these vacant faculty positions required an earned doctorate (Fang & Tracy).

A review of the March 2007 Louisiana State Board of Nursing (LSBN) Supply and Demand Commission Annual Report reveals that there are 42,186 individuals who hold registered nurse (RN) licenses in the state of Louisiana. There are 2,715 Louisiana RNs who hold master's degrees in nursing. A closer look at the report reveals that as of January 2007, there were only 616 master's prepared nurses that are currently working as nursing faculty in the state of Louisiana; 289 are doctoral prepared, and only 103 of those with doctoral degrees are currently employed as nursing faculty members (Louisiana State Board of Nursing, 2006; Louisiana State Board of Nursing, 2007, March).

"In this age of technology, the nursing profession is facing a shortage like it has never experienced in the past" (Mancuso-Murphy, 2007, p. 252). Nursing faculty are aging and retiring which is compounding the problem (Mancuso-Murphy). The minimal educational requirement to teach nursing is the Master's Degree in Nursing (Louisiana State Board of Nursing, 2006). In a letter to United States Senator Durbin in 2007, the Chief Executive Officer of the National League for Nursing, Beverly Malone wrote:

A report of the faculty census survey of RN and Graduate programs show that the nurse faculty vacancies in the United States continue to grow with a 7.9 percent vacancy rate of budgeted, unfilled, full-time positions in baccalaureate and higher degree programs - an increase of 32 percent since 2002; and a 5.6 percent vacancy rate in associate degree programs--which

translates to a 10 percent rise in the same period. Faculty are the engine of the nursing workforce pipeline, without whom the shortage cannot be resolved. (Malone, 2007, p. 1)

Louisiana is home to nine graduate programs that offer master's degrees in nursing in a face to face format, and two graduate programs that offer doctoral degrees in nursing in a face to face format (Louisiana State Board of Nursing, 2006). Only three Louisiana graduate nursing programs offer an RN-MSN program in a web-based distance learning format (Louisiana State Board of Nursing, 2008, April 22). An RN-MSN program is one that allows an RN who does not have a baccalaureate degree to enroll in graduate classes for approximately two years to earn the Master's Degree in Nursing (Zemaitis & Kosmach, 1991). Registered nurses who have earned an associate's degree and registered nurses who have earned a diploma RN are the nurses who are eligible to apply to an RN-MSN program.

It should be mentioned that the state of Louisiana was experiencing a nursing faculty shortage prior to the catastrophes of Hurricanes Katrina and Rita in 2005 (National League for Nursing, 2005, May 9; National League for Nursing, 2002, May 18), and that as a result of these hurricanes many of the affected schools of nursing were relocated to other parts of the state, and/or placed online for a part of that fall 2005 semester (Louisiana Higher Education Response Team, 2005, October 10).

The minutes of the Louisiana Higher Education Response Team's (LaHert) October 10, 2005 meeting on Higher Education Issues regarding Hurricanes Katrina and Rita, revealed that "the Southern Regional Education Board (SREB), inquired how SREB could assist Louisiana colleges and universities and its students. SREB worked quickly, secured funding and implemented the Sloan semester" (p. 1). This Sloan semester is one where SREB worked with the private Sloan Foundation and created "online courses at no cost to students" (p. 1). The minutes also reflected that some "nursing faculty's spouses had lost their jobs and faculty were leaving for higher paying jobs to fill the monetary void" (p. 5). It is interesting that even during this catastrophe, the minutes reflect that one

member of the committee responded to faculty shortage statement with the recognition that “this is an age old problem” (p. 5). At the time of this writing, all of the state’s nursing programs are currently open, yet the faculty shortage continues (Malone, 2007).

The American Association of Colleges of Nursing’s (1999) position statement on distance education suggests that “the use of technology in higher education may provide an opportunity to increase the number of faculty-qualified nurses to support education, research, and practice” (para. 9).

Statement of Purpose

The purpose of this study is to describe what registered nurses in the state of Louisiana, who are members of the Louisiana State Nurse’s Association, identify as deterrents to participation in web-based graduate nursing programs. The researcher hopes that the knowledge generated in this study will be useful to administrators and faculty in web-based graduate nursing programs, so that they might use the results of the study to work towards eliminating these identified deterrents that keep RNs from participating in their programs.

Significance of the Study

While deterrents to participation in adult general education, face to face continuing education and web-based continuing education have been studied in the business literature and in the nursing literature, deterrents to participation in web-based graduate nursing programs by Louisiana RNs have not. Louisiana is suffering from a nursing faculty shortage. Web-based graduate nursing programs are one way to provide innovative curriculums to encourage RNs to go to graduate school to earn a graduate degree; yet participation in these programs by Louisiana RNs is low. The MSN degree is the minimum requirement to teach nursing school, with the Doctorate being preferred in many nursing schools. If factors that deter Louisiana RNs from participating in these web-based graduate nursing programs can be identified, perhaps these programs can work toward alleviating the deterrents so that

enrollment might increase and more RNs might receive a nursing graduate degree in the state of Louisiana.

Objectives of the Study

Objective 1. To describe the personal demographics of a sample of registered nurses in the state of Louisiana, who are members of LSNA, with regards to age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.

Objective 2. To describe deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA, as measured by the deterrents to participation in web-based nursing graduate programs survey tool.

Objective 3. To describe latent constructs within the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, as identified by Louisiana RNs who are members of LSNA, that emerge statistically following factor analysis of the dataset.

Objective 4. To determine if differences in perceived deterrents to participation as measured by the deterrents to participation in web-based graduate nursing programs survey tool exist among the following demographic characteristics: age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.

Objective 5. To determine if a model exists which explains a significant portion of the variance of deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA as measured by the Deterrents to Participation in web-based graduate nursing programs survey, and the demographic characteristics of age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.

Limitations of the Study

The researcher electronically surveyed Louisiana registered nurses who have membership in the Louisiana State Nurses Association. Generalizability of the study is limited due to the use of non-probability census sampling of all RNs belonging to a professional nursing organization in one southern state. Another limitation is that the research is a descriptive study using a web-survey instrument that relies on self reporting of information. The researcher must make the assumption that the participants will answer the survey questions honestly and accurately (Dillman, Smyth & Christian, 2009). Using an electronic web survey presents its own set of limitations because “according to the Pew Internet & American Life Project, in September 2007, only about 71% of the U.S. population used the Internet at least occasionally, and only 67% had Internet service in their homes” (Dillman et al., 2009, p. 44). The researcher is also aware that those participants who are more likely to answer a web survey, might also be more likely to participate in a web-based graduate nursing program, thus skewing findings (Dillman et al.).

Definition of Terms

Deterrents - “a factor contributing to an adult’s decision not to engage in learning activities” (Perdue, 1999). In this study, deterrents are the items selected from the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument that describe what may deter RNs from participating in web-based graduate nursing programs.

Web-based Graduate Nursing Program - a distance learning program offered via the World Wide Web to registered nurses so that they can achieve a graduate degree in nursing. A web-based graduate nursing program is one that is offered through the Internet where students can log in to their classes from anywhere. Web-based instruction is a way for students and faculty to interact online without requiring participants to be physically together in the same place at the same time (Moore & Anderson, 2003). Web-based programs are a form of distance learning.

Distance Learning is defined as “any form of learning that does not involve the typical classroom setting where students and instructor must be at the same place at the same time” (Ko & Rossen, 2004, p. 2).

CHAPTER 2

REVIEW OF RELATED LITERATURE

A literature review of deterrents to participation in web-based graduate nursing programs by Louisiana RNs was conducted through a search of the EBESCO Host's ACADEMIC SEARCH COMPLETE, CINAHL Plus, ERIC, ProQuest, MEDLINE, SOC INDEX, HEALTH SOURCE: NURSING/ACADEMIC; and PROF DEVELOPMENT COLLECTIONS databases. The key words used in the literature search included searching of registered nurse, Louisiana RNs, Lifelong learning, master's degree, deterrents, continuing education, graduate school, distance education, online, accelerated nursing programs, online RN-BSN nursing programs, online RN-MSN nursing programs and nursing faculty shortage. A hand search of library shelves as well as communication with colleagues was included. A review of the references in selected articles was done for identification of additional empirical and non-empirical articles.

There were no articles that specifically addressed deterrents to participation in web-based graduate nursing programs by Louisiana RNs. In an effort to do an extensive search, the literature was selected in three stages. The first stage was a selection of *adult learning literature* to capture information on adult education theory. Information on deterrents to participation in adult education programs was also located in this first stage. The second stage was a selection of *nursing literature* that discussed the shortage of master's prepared (MSN) nursing faculty, as well as the deterrents to RN participation in continuing education and in obtaining a higher degree. The third stage was a selection of the *online distance education literature* that addressed deterrents to participation in online distance education both within and outside of the field of nursing.

The objectives of the literature review were to answer the following questions: (a) what research has been done on deterrents to participation in web-based graduate nursing programs by Louisiana RNs? (b) What does the literature tell us about deterrents to participation in adult education programs?

(c) What does the literature tell us about deterrents to RN participation in continuing education, and deterrents to RNs obtaining a higher degree? (d) What does the literature tell us about the current shortage of nursing faculty and the need for master's and doctoral prepared nurses? (e) What does the literature tell us about deterrents to participation in online distance learning programs?

The earliest dated item in the literature review was 1926 and the most recent was dated 2009. In the adult learning literature, seven were books on adult learning and participation (Cross, 1981; Darkenwald & Merriam, 1982; Houle, 1961; Johnstone & Rivera, 1965; Knowles, 1990; Lindeman, 1926; Selwyn, Gorard & Furlong, 2006). Ten were research studies on deterrents to participation in adult education (Beder, 1990; Boshier, 1977; Boshier & Collins, 1985; Clayton & Smith, 1987; Darkenwald & Gavin, 1987; Darkenwald & Merriam, 1982; Darkenwald & Valentine, 1985; Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984; Valentine & Darkenwald, 1990). One was a research study on deterrents to participation in parenting education (Johnson, Harrison, Burnett & Emerson, 2003); Six were non research articles that supported theory building in adult education participation (Brookfield, 1992a; Brookfield, 1992b; Cookson, 1986; Hurley, 1991; Mann, 1990; Merriam, 1988).

Items in the nursing literature included seven research articles about nurses' participation in continuing education programs (Atack & Rankin, 2002; Blais, Duquette & Painchaud, 1989; Dickinson & Clark, 1975; Dowswell, Bradshaw, & Hewison, 2000; Joyce & Cowman, 2007; Kubsch, Henniges, Lorenzoni, Eckardt, & Oleniczak 2003; Thompson, 1992), five research studies on RN participation in obtaining a higher degree such as a BSN or MSN (Cooper, 2005; Frick, Speed, & Pollock, 1996; Peters, 2003; Reilly, 2003; Speziale, 2002), and five non-research articles that addressed the national nursing faculty shortage and the tremendous need for MSN and PhD prepared faculty (Allan & McClellan, 2007; Berlin & Sechrist, 2002; Curl, Smith, Chisholm, Hamilton, & McGee, 2007; Fontaine & Dracup, 2007; National League for Nursing, 2005, December 9). There

were also four non-research articles that discussed the concept of RN-MSN programs (Clark, 1997; Hagemaster, 1990; Streubert & Derstine, 1992; Zemaitis & Kosmach, 1991)

Items in the distance education literature included seventeen research studies selected on online delivery of courses, nine of which were within the field of nursing (Cohen & Dacanay, 1994; DeBourgh, 2003; Hodson-Carlton, Kiktborg, Flowers & Scheibel, 2003; Hostetter & Busch, 2006; Leski, 2009, Mancuso-Murphy, 2007; Ryan, Hodson-Carlton & Ali, 2004; Ryan et al., 2005; Tse, Pun & Chan, 2006). It should be noted that Mancuso-Murphy (2007) was a review of the literature of 14 research studies on nursing distance online education, and Cohen and Dacanay (1994) was a meta-analysis of computer-based instruction in nursing education. Eight of the research articles in the distance learning literature that were selected were outside the field of nursing (Jennings & Bayless, 2003; Kember, Lai, Murphy, Siaw & Yuen, 1994; Laszlo & Kupritz, 2003; Newell, 2007; O'Neil & Fisher, 2008; Purdue & Valentine, 2000; Zelinski, 2000; Zirkle, Norris, Winegardner, & Frustaci, 2006). Six were evaluation articles where authors shared interesting experiences and course evaluations by students in online nursing courses (Bourke & Ihrke, 2009; Diekelmann & Mendias, 2005; Gruendemann, 2007; Halstead & Billings, 2009; Leners, Wilson & Sitzman, 2007; Lewis & Price, 2007), and eight were non-research articles selected because the authors shared interesting experiences in online college courses that were outside of the field of nursing (Balkon & Backus, 2007; Billings, 2007; Bradford, Porciello, Balkan & Backus, 2007; Bray, Harris & Major, 2007; Coates, 2007; LaPrairie & Hinson, 2007; Nworie, 2006; Schwartzman & Tuttle, 2002; Smith, 2005).

This review provided a large literature base selected from multiple disciplines. The literature review drove the direction of my study, illustrating the need for my dissertation research question: What are deterrents to participation in web-based graduate nursing programs for RNs who are members of the Louisiana State Nurses' Association?

Scope of the Problem

This literature review has exposed a gap in the literature with regards to finding deterrents to RN participation in web-based graduate nursing programs by Louisiana RNs. No empirical studies were found that addressed deterrents to participation in web-based graduate nursing programs by Louisiana RNs. Hodson-Carlton et al. (2003) surveyed 162 National League of Nursing (NLN) accredited nursing programs in an attempt to study online enrollment. Online RN-BSN programs accounted for about 90% of students enrolled in online nursing courses. There were still only 3.65% of nursing students who were participating in online master's courses, 2.29% participating in online associate degree courses, 2.14% in online basic baccalaureate courses, and 0.78% were participating in online continuing education. Participation in online LPN-RN programs was at 0.36%, whereas participation in online doctorate programs was equal to about .06% (Hodson-Carlton et al., 2003).

This review of the literature on deterrents to participation in adult learning, RN continuing education, and web-based education, will help to formulate a beginning foundation for this dissertation study. Brookfield (1992a) stated that

much theoretical work in adult education (especially that on the facilitation of self-directed learning and on the use of andragogical methods) is informed by assumptions about human behavior drawn from humanistic psychology as represented in the ideas of Maslow, Allport and Rogers. (p. 87)

Brookfield also reminded us that “as facilitators, if we accept the myth that adult learning is wholly joyful, we may shy away from asking learners to undertake the perilous and painful journey into new areas of intellectual and psychomotor activity” (p. 12).

Why are there so few MSN prepared nursing faculty in the state of Louisiana? Do RNs believe the journey of adult learning would be too painful? What are the deterrents to participation in online RN-MSN programs by Louisiana RNs? Do students that are now attending the online RN-BSN

programs in Louisiana simply not know that the online bridge programs to the MSN exist? This would be consistent with Beder (1990) who reminded us that

there are at least three reasons why adults who are eligible for adult basic education (ABE) fail to participate: they lack sufficient motivation to attend; they are motivated, but are in some way deterred; or they are simply unaware that ABE exists. (p. 207)

Are RNs afraid of technology involved with a web-based course? Is there a general lack of interest in studying to become teachers of nursing? Are RN's concerned about web-based program quality? No published research studies on deterrents to RN participation in web-based graduate nursing programs were found in a thorough review of the literature.

Theoretical Framework

Mann (1990) stated "by understanding the theoretical foundations of research and practice we provide a framework for our activities in both areas. We are then able to plan, implement and evaluate interventions which are consistent and which increase our opportunities for success" (p. 185). As one reads the literature it becomes very apparent that there is no one unifying theory of adult learning (Mann, 1990; Merriam, 1988; Merriam, Cafarella, & Baumgartner, 2007).

Brookfield (1992b) discusses the myth that many people believe about adult learners: all are self-directed learners. Web-based learning historically has attracted self-directed learners (Merriam et al., 2007). Are RN's not self-directed learners (Gopee, 2005)? Is this a possible reason for non-participation in web-based graduate nursing programs? Gopee was interested in the self-direction capability and lifelong learning motivations of registered nurses. Gopee created a conceptual framework of lifelong learning components based on three themes that emerged as a result of 26 RN interviews and two focus groups. The three themes that enabled lifelong learning were *organizational factors*, such as workforce development opportunities, *sociopolitical factors*, such as social and government policies, and *individual/personal factors*, such as one's view of nursing as a profession (Gopee).

Do web-based graduate nursing programs encourage a variety of teaching styles or are they succumbing to the myth that Brookfield (1992b) calls “the myth that there is a uniquely adult teaching style” (p. 14)? Does web-based graduate nursing program philosophy mesh with the concepts of “andragogy developed by Malcolm Knowles, small group discussion (advocated by Eduard Lindeman) and conscientization or problem-posing education (proposed by Paolo Freire)” (Brookfield, 1992b, p. 14)?

Lindeman’s (1926) book entitled *The Meaning of Adult Education* was written 82 years ago and still informs and educates readers on adult education today. He, like John Dewey, believed that learning was grounded in experience. His pioneering spirit was a great inspiration to the development of a systematic adult learning theory (Knowles, 1990). According to Lindeman, “education is life” (p.204).

Hurley (1991) suggests that “the expectations for adult basic education programs today include a growing emphasis on increasing the adult’s ability to learn—learning to learn. This emphasis requires a broader curriculum and additional training from managers and staff” (p. 20). Hurley also discusses Mezirow’s theory of transformational learning. “Through critical reflection, adults become aware of the meaning they attach to their roles and relationships” (Hurley, p. 23).

Darkenwald and Merriam (1982) described their theoretical model of participation which took into account how the two time periods in life, pre-adulthood and adulthood interplay with socioeconomic status. In pre adult life, the model depicts how “family characteristics particularly I.Q. and socioeconomic status (SES), strongly influence subsequent experiences in school” (p. 142), which in turn can affect one’s decision to participate in adult education. The model “depicts the major variables that, during adulthood, are presumed to influence participation in adult education” (p. 142). Terms such as *learning press* are introduced into the model and defined as “the extent to which one’s

total current environment requires or encourages further learning. High learning press is related to high SES (and low to low)” (p. 142).

Another model of adult participation is the Cross (1981) *chain of response model*. Cross assumes that participation in a learning activity, whether in organized classes or self-directed, is not a single act but the result of a chain of responses, each based on an evaluation of the position of the individual in his or her environment. (p. 125)

Cross illustrated in her model, that the decision to participate in adult learning activities must first begin with an evaluation of one’s self and one’s attitudes about education. Events and transitions that take place in one’s life along with the one’s goals and past experiences that affect how one expects to meet those goals will also contribute to motivation to participate. Having the correct information about what one is to learn along with increasing opportunities and recognizing the presence of barriers will also affect one’s ability to choose to participate (Cross). “For the weakly motivated, modest barriers may preclude participation, while the awareness of special new opportunities for adults may enhance the motivational force for participation” (Cross, p. 127). Newell (2007) wrote that Cross’ model is one

which sought to identify all relevant variables and form hypotheses regarding their relationships. In addition to the situational and dispositional barriers identified by others, Cross includes a third category, institutional barriers. Cross’ model was the first to include life events and transitions. (p. 33)

“None of the existing theories of participation and motivation focus specifically or exclusively on adult education activities involving distance education, but no reasons were proposed or found which conclude that they cannot be applied in the distance education environment” (Newell, 2007, p. 33).

McClusky’s theory of margin helps to explain the relationship between learning and an adult’s changing roles in life. If load exceeds power then students will have very little margin with which to participate (Merriam et al., 2007). Thompson (1992) did a qualitative study of what motivates RN’s to participate in baccalaureate nursing programs. Thompson reported that “the nurses in this study were willing to proceed with little or no margin” (p.102). She stated that

the multiple roles (nurse, wife, mother, student) carried out by the nurses in this study made up their external load. In addition, many of them talked about their internal loads—their own expectation of doing well academically and/or continuing to be successful wives and mothers. Sources of power included more than the nurses’ abilities and learned skills. Support from husbands, families, colleagues, educators, and educational institutions facilitated juggling. (p. 102)

Lindeman (1926) wrote:

Apologists for the status quo in education frequently assert that the great majority of adults are not interested in learning, are not motivated in the direction of continuing education; if they possessed these incentives, they would, naturally, take advantage of the numerous free educational opportunities provided by public agencies. This argument begs the question and misconceives the problem. We shall never know how many adults desire intelligence regarding themselves and the world in which they live until education once more escapes the patterns of conformity. Adult education is an attempt to discover a new method and create a new incentive for learning; its implications are qualitative, not quantitative. Adult learners are precisely those whose intellectual aspirations are least likely to be aroused by the rigid, uncompromising requirements of authoritative, conventionalized institutions of learning. (p. 28)

Deterrents to Participation in Adult Education

“The notion of barriers, or deterrents, is central to most theoretical formulations of participation in adult education” (Valentine & Darkenwald, 1990, p. 30). Merriam (1988) states

there are probably more studies of who participates in adult learning activities than any other single topic in adult education. Since the first scale study of participation by Johnstone and Rivera (1965), the characteristics of adult learners or the “typical” participant profile has remained fairly constant. Adult learners are more than likely to be white, middle-class, well-educated, young, and have at least a moderate income. (p. 6)

Clayton and Smith (1987) studied motives of women re-entering college and found that “for over one-fourth (28.3%) of the women *role change* was a motivating factor for return to college” (p. 102). “The only other positive motivating factor found was *social*, which represented just over one-fifth of the sample” (Clayton & Smith, p. 102). These results beg the question: is the idea of a web-based course thought of by RNs as one with a lack of social interaction? Diekelmann and Mendias (2005) identified the importance of social presence in an online course. Could this fear of isolation be a factor that is a deterrent to RN participation in web-based graduate nursing programs? The literature

at this time, does not tell us. The researcher hopes that this dissertation will bring new knowledge to fill this gap.

One theme that has emerged in the literature on deterrents to participation in adult education is that researchers have not identified any one comprehensive theory of deterrents to participation, nor have they identified a consistent finding of deterrents that might predict participation levels in adult education activities, and be generalized to a wider population (Cookson, 1986; Darkenwald & Merriam, 1982; Darkenwald & Valentine, 1985; Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984; Thompson, 1992).

Johnstone and Rivera (1965) surveyed 12,000 households as a part of a national study to find out about the educational activities of adults. Personal interviews of 1800 adults and case studies of 550 cases, along with additional interviews with 700 young people were all a part of the four - phase study (Johnstone & Rivera). “The barriers to participation most frequently cited by persons classified as members of the ‘potential audience’ were financial (43 percent), busy schedules (39 percent) and a lack of sufficient physical energy at the end of the day (37 percent)” (Johnstone & Rivera, 1965, p. 17). Even these deterrents or barriers have been questioned in the literature because “adults tend to give socially acceptable responses to questions concerned with reasons for nonparticipation” (Darkenwald & Merriam, 1982, p. 136).

Theory building with regards to deterrents to participation was enhanced when Scanlan and Darkenwald (1984) created the Deterrents to Participation scale (DPS) and “demonstrated that deterrent factors can be identified, that the construct is multidimensional, and that the factors contribute substantially to explaining variance in participation behavior” (p. 165). It is interesting that Scanlan and Darkenwald’s survey among health professionals identified “*Disengagement, Lack of Quality, Family Constraints, Cost, Lack of Benefit, and Work Constraints*” (Scanlan & Darkenwald, p. 155) as deterrents to participation in adult education. Four of the six factors are institutional barriers

(Cross, 1981). Perhaps once these barriers are known by employers who plan adult education programs, efforts might be promoted that could break the barriers down (Scanlan & Darkenwald).

In 1985 Darkenwald and Valentine wrote the following quote concerning the Scanlan & Darkenwald (1984) study: “The major limitation was severely constricted external validity: results could not be generalized to all health professionals, much less the general adult public” (Darkenwald & Valentine, 1985, p. 177). As a result of this limitation, Darkenwald & Valentine (1985) created a new instrument, the Deterrents to Participation Scale General (DPS-G), and they surveyed 2000 adults in the general public to seek deterrents to participation in adult education. Data was analyzed from 215 returned surveys. “Only one factor, *Lack of Course Relevance*” (p.187) was identified as an institutional barrier to participation (Darkenwald & Valentine). Three factors, “*Time Constraints, Cost, and Personal Problems,*” (p.187) were identified as situational barriers (Darkenwald & Valentine). Two factors, “*Lack of Confidence, and Low Personal Priority*” (p.187) were identified as dispositional barriers (Darkenwald & Valentine). A theme has also emerged that that there is a need for more studies that are quasi-experimental, longitudinal, and qualitative, as opposed to the descriptive, cross-sectional studies that have been done (Blais et al., 1989; Boshier, 1977; Cookson, 1986; Darkenwald & Gavin, 1987; Darkenwald & Merriam, 1982; Merriam et al., 2007; Scanlan & Darkenwald, 1984; Thompson, 1992).

Additional themes that have emerged from the research on adult education participation (AEP) include (a) deterrents to AEP can be situational, dispositional, or institutional (Cross, 1981), (b) older people generally seem to participate less in adult education programs (Merriam et al., 2007), (c) there are multiple deterrents to participation in adult learning programs (Darkenwald & Valentine, 1985; Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984), (d) some adults have identified cost, lack of time, lack of relevance of the course content, disengagement, lack of quality, family problems, lack of confidence, low personal priority, and work constraints as deterrents (Darkenwald & Valentine,

1985; Johnston & Rivera, 1965; Scanlan & Darkenwald, 1984, (e) informal learning is difficult to measure, and as a result of this difficulty, most adult education participation research has been on formal education (Lindeman, 1926; Merriam et al., 2007; Selwyn et al., 2006), (f) women seem to participate less in work related adult education than men do (Blais et al., 1989; Johnstone & Rivera, 1965), (g) the amount of formal education that a person has seems to enhance a person's AEP (Beder, 1990; Darkenwald & Merriam, 1982; Merriam et al., 2007), (h) a high formal educational level of one's parents may contribute in a positive way toward one's AEP (Darkenwald & Merriam, 1982; Johnstone & Rivera, 1965), (i) some reasons for AEP are psychological and social (Boshier, 1977; Boshier & Collins, 1985), (j) adults who tend to drop out of AEP tend to socialize less with others and adults who are persisters tend to desire an environment of clear rules and expectations (Darkenwald & Gaven, 1987), and (k) researchers need to be very cautious about generalizing any of these themes due to lack of enough longitudinal and experimental studies to verify the findings (Darkenwald & Valentine, 1985; Merriam et al., 2007; Scanlan & Darkenwald, 1984; Valentine & Darkenwald, 1990).

Cookson (1986) questioned whether the consistent findings of an "inverse relationship between age and AEP" (p. 134) as reported in the literature is "a truism" (p. 134) or "artifact of the predominantly cross sectional method of sampling" (p. 134). Cookson also wrote that "external context variables have been largely ignored in the adult education literature" (p. 133). According to Cookson, who described components of a beginning theoretical framework of adult education participation, the "effects of culture, social structure or macro-societal factors have also yet to be reported in the literature" (p. 133). He lamented the fact that "social background and social role factors" (p. 134) with regards to AEP have not been studied (Cookson). Twenty one years later, Merriam et al. (2007) still wrote of this problem and suggested that

there are other reasons why certain adults have more access to learning opportunities than other adults. Where one happens to live, what one's primary language is, what color, age, or sex one

happens to be, what one does for a living all contribute to the participation pattern in adult education. (p. 76)

Johnson et al. (2003) surveyed 112 parents whose children were enrolled in federally funded day care, to study deterrents to participation in parenting education. In this study one objective was “to determine if the relationships existed between the factors identified as deterring participation in parenting education and the sociodemographic variables” (p. 417). “*Lack of confidence, lack of course relevance, personal problems, situational barriers, and time* deter parents from participation in parenting education programs” (p. 422). This study also identified that “black respondents perceived significantly greater influence on the *lack of confidence* than did white respondents. Similarly, those respondents who are currently unemployed attributed a greater influence to *confidence* factors than respondents who were employed full-time” (p. 422). They also found that “lower levels of family income tended to be associated with higher perceived importance of the items in the personal problem factor as a deterrent to participation in parenting education programs” (Johnson et al., 2003, p. 422).

Houle (1961) interviewed 22 people who were involved in learning activities, hoping “that these people and their activities could somehow be fitted together into patterns that would throw light on the meaning of continuing education” (p. 14). Houle wrote:

As I pondered the cases, considering each one as a whole, it gradually became clear (after many an earlier effort at analysis had led nowhere) that within the group there were in essence three subgroups. The first, or, as they will be called, the goal oriented, are those who use education as a means of accomplishing fairly clear cut objectives. The second, the activity-oriented, are those who take part because they find in the circumstances of the learning a meaning which has no necessary connection, and often no connection at all, with the content or the announced purposes of the activity. The third, the learning oriented, seek knowledge for its own sake. These are not pure types; the best way to represent them pictorially would be by three circles which overlap at their edges. (p. 15)

Boshier (1977) described his own model of participation in comparison to Houle’s when he wrote “whereas Houle’s typology was an attempt to classify people according to their central reasons for

participation, this model is more concerned with social and psychological underpinnings of reasons for participation” (p. 94).

Boshier and Collins (1985) tested Houle’s theory using their 40 item Education Participation Scale (EPS) using two cluster analyses. “The first made use of a matrix calculated from data on all 13,442 respondents” (p. 123).

Tests for the best fit between the 40 EPS items and Houles’ three orientations were reasonably clear as Houle had described them, but the *activity orientation* was much more complex than he had envisaged; a force aggregate of social stimulation, social contact, external expectations and community service items. (p. 128)

Valentine & Darkenwald (1990) used cluster analysis of deterrents learned from their previous study to come up with five types of adults that are deterred from participating in AED. Type one adults were deterred “primarily by ‘personal problems’, which as a factor, is chiefly defined by ‘trouble arranging childcare’ and ‘family problems’ ” (p. 40). This type one adult is consistent with the findings of Dowswell et al. (2000) whose qualitative study of registered nurses revealed that nurses who had children tended to have a less favorable attitude toward participating in continuing education. Type two adults were “deterred primarily by lack of confidence” (p. 40). Type three adults were “deterred primarily by cost considerations” (p. 40). Type four adults were “those for whom adult education is not a priority” (p. 41). Type five adults were “deterred primarily by the lack of relevant educational offerings” (p. 41). Valentine & Darkenwald also wrote

on the broadest possible level, adult educators need to recognize that time constraints represent a serious and nearly universal deterrent to participation in adult education. We know from the results of our factor analytic work that items related to time were reported as substantially more important than any other items. Moreover, because time constraints failed to differentiate among subgroups of learners in our cluster analyses, we know that the power of these deterrents is undiminished by the psychosocial and sociodemographic variables measured in this study. Consequently, it would seem imperative that program planners pay careful attention to time considerations when scheduling educational activities. Clearly, such proven strategies as varied and flexible scheduling distance learning, and provisions for self-pacing will make education more accessible to adult learners. (p. 40)

The researcher hopes that this study of deterrents to participation in web-based graduate nursing programs by Louisiana RNs will contribute to the body of knowledge on deterrents to participation in web-based distance learning in an effort to do just what Valentine and Darkenwald (1990) suggested “to make education more accessible to adult learners” (p. 40).

Merriam et al. (2007) believed that

if individual interests and motivation account for participation, then recruitment efforts would center on responding to an adult’s perceived learning needs and stimulating motivation. If, in contrast, participation or nonparticipation is seen as a function of the social structure, then one would work toward changing aspects of this structure in ways that would facilitate participation. The most robust explanation of participation is likely to be found in considering both the psychological and sociological perspectives. (p. 70)

A theme that emerged while reading the works on adult learning theory by Knowles (1990), Lindeman (1926), and Merriam et al. (2007) was that formal education is grounded in experience and the andragogical model “is not an ideology; it is a system of alternative sets of assumptions” (Knowles, 1990, p. 64). Lindeman wrote “orthodox education may be a preparation for life but adult education is an agitating instrumentality for changing life” (p. 165).

Nursing Faculty Shortage and RN-MSN Programs

The American Association of Colleges of Nursing (2006) reported that 41,638 qualified applicants were turned away from baccalaureate and graduate nursing programs in 2005 due to insufficient numbers of faculty, clinical sites, and/or clinical preceptors, lack of classroom space and budget constraints. (Curl et al., 2007, p. 193)

It is important to understand that there are several different paths that a student can take to earn the opportunity to take the National Council Licensing Examination (NCLEX) to become a registered nurse (RN). The traditional ways to become an RN include either graduating from a diploma program, an associate (ASN) degree program or a baccalaureate (BSN) degree program in nursing. In response to the nursing shortage a number of accelerated programs of nursing have been created in an effort to streamline the path that a student can take to become a registered nurse (Speziale, 2002). These RN programs include ASN degree programs that can be completed in eighteen months if the student

already has a bachelor's degree in another discipline (Wink, 2005). There are also licensed practical nurse (LPN) to RN programs that shorten the length of time that it takes for an LPN to earn the RN credential (Louisiana State Board of Nursing, 2006). There are also programs to encourage ASN degree students to continue lifelong learning toward earning the BSN credential by participating in RN-BSN programs, many of which are offered online (Louisiana State Board of Nursing, 2006). In graduate nursing education, there are also RN-MSN programs.

Just as its name implies, the RN-MSN option lets associate degree and diploma nurses earn both a bachelor's and a master's degree as part of one educational program. This innovative approach recognizes that RN students have valuable practical knowledge and experience that can form a solid base for advanced study. Features of such programs include: granting the BSN and MSN through one program, decreasing the length of full time study needed to earn two degrees, offering credit for previous learning, substituting graduate-level courses for undergrad requirements so students can begin graduate course work earlier, and enabling RNs to move directly to graduate-level work. (Zemaitis & Kosmach, 1991, p. 133)

These are all creative educational initiatives that have a common goal, that of reducing obstacles or deterrents to students who wish to become Registered Nurses or who wish to advance their education to obtain a higher degree in nursing. The RN-MSN programs are geared especially for RNs who graduated from diploma or associate degree nursing programs. "Associate Degree RNs educated at two year colleges, are the largest contingent in the nations' pipeline of RN professionals, accounting for 60 percent of all new registered nurses" (Malone, 2007, p. 1).

According to the National League for Nursing (NLN) Board of Governors' position statement on transforming nursing education, "nurse educators are expected to more effectively integrate technology into their teaching through the use of distance learning, simulation, and PDAs..." (National League for Nursing, 2005, May 9, p. 2). "These challenges, however, are confounded by increasing class size, decreasing resources for education, faculty shortages, and limited available sites for clinical learning" (National League for Nursing, p. 2).

In order to work as a faculty member in a nursing curriculum, a master's degree is required (National League for Nursing, 2005, May 9; Louisiana State Board of Nursing, 2006; Louisiana State Nurses' Association, 2001). It is well documented that there is a shortage of nursing faculty nationally (National League for Nursing, 2005, Dec 9; National League for Nursing, 2002, May 18). This is also the case in the state of Louisiana (Louisiana State Board of Nursing, 2006; Louisiana State Nurses' Association, 2001; Louisiana Workforce Commission, 2008).

Themes that emerged from the research (Lupien & Rosenkoetter, 2006; and Louisiana State Nurses Association, 2001) and from the non research articles that addressed the national nursing shortage and the tremendous need for MSN and PhD prepared faculty (Allan & McClellan, 2007; Berlin & Sechrist, 2002; Curl et al., 2007; Fontaine & Dracup, 2007; National League for Nursing, 2005, December 9) included that there is a graying of nurse faculty who have graduate degrees of either the master's or the doctorate. "The average age for graduates of nursing doctoral programs is 46 years with fewer than 7% of graduates younger than 35 years" (Lupien & Rosenkoetter, 2006, p. 371). "Barriers for current faculty earning doctoral degrees included lack of time, finances, interest, and access to doctoral programs" (Lupien & Rosenkoetter, p. 371), which is somewhat consistent with previous studies of deterrents to the general adult population's participation in education (Beder, 1990; Clayton & Smith, 1987; Darkenwald & Merriam, 1982; Darkenwald & Valentine, 1985; Johnstone & Rivera, 1965), as well as deterrents to health care professionals' participation in educational offerings (Blais et al., 1989; Scanlan & Darkenwald, 1984).

In a May 18, 2002 National League for Nursing Board of Governors' position statement on the preparation of nurse educators on a national level, it was stated that:

There is an urgent concern, however, about the number of faculty available to teach in our nursing programs and the extent to which those individuals have been adequately prepared for the role. At present, there are approximately 3,500 nursing programs (practical nurse, associate degree, diploma, baccalaureate, master's and doctoral), "housed" in nearly 2,500 schools of nursing. These schools enroll a total of approximately 300,000 students. With the projected

“shortfall” of nurses to meet the health care needs of our increasingly diverse and aging population, schools may need to increase their enrollments by as much as one third to “fill the gap” bringing the ideal number of enrolled students close to 400,000. Using a ratio of 10:1 (students: full time faculty), the number of full time faculty required to teach those 400,000 students enrolled in today’s 3,500 programs may be as high as 40,000. Current data suggest we now have less than 50% of that number, and the supply of individuals available to meet this demand is shrinking rapidly as the result of three phenomena: the retirement of large numbers of faculty (many of whom were prepared as educators) the limited number of graduate programs that offer options to specialize in nursing education, and the declining enrollments in graduate programs that are designed to prepare nurse educators. Between 1993 and 1999 the number of students enrolled in master’s programs designed to prepare them for a faculty role fell from 3,026 (9.9% of the total of those enrolled) to 1,229 (4% of all those enrolled). During that same period, the number of individuals who were graduated with a master’s specialization in nursing education fell from 755 (9.5% of all graduates) to 247, a mere 2.5% of all those being graduated. (National League for Nursing, 2002, May 18, p. 2)

It is the researcher’s hope that this study of deterrents to participation in web-based graduate nursing programs by Louisiana RNs will not only add to the body of knowledge about what deters RNs from going back to school to obtain a web-based master’s degree, but will stimulate studies of deterrents to participation in web-based doctoral nursing degree programs. It is important to realize that it is the pool of master’s prepared nurses that fuels participation in nursing doctoral programs (Berlin & Sechrist, 2002).

The one research article found on RN-MSN program admissions and curriculum by Speziale (2002) was a descriptive exploratory study that “was conducted to examine admission and curricular requirements for RN-MSN nursing programs in the mid-Atlantic region” (p. 295). The author surveyed 49 accredited RN-MSN programs and found many inconsistencies with regards to admission criteria with some using the GRE, some using the MAT, some requiring letters of recommendation while others do not, and some requiring work experience while others did not, some allowing 10 years to complete a graduate degree while others dictating that the degree be completed in five years (Speziale).

Peters (2003) conducted a qualitative study that interviewed 15 RN students who were participating in an RN program that led to both the BSN and the MSN degree. Peters wanted to understand the stressors and the coping mechanisms of RNs returning to school. The themes that

emerged from her study included the identification of three stressors: *time*, *money*, and *unmet expectations*. RNs in Peters study identified *social* and *spiritual support* as coping mechanisms. The two constructs of *resiliency* and *hardiness* emerged as a description of the RNs who persevered. It was unfortunate that in this study, Peters did not differentiate between the students that were pursuing the MSN and the students that were only pursuing the BSN (Peters, 2003).

Cooper (2005) conducted a quantitative study, and surveyed 180 RNs using a tool adapted from the Scanlan Deterrents to Participation Scale in an effort to determine barriers to participation in an RN-BSN program in the state of Virginia. Only 54 surveys were returned, for a return rate of 30% (Cooper). “The top three reasons listed as barriers to participation were (a) times classes are offered, (b) cost of registration and fees, and (c) location of classes offered” (Cooper, p. 62). These findings were similar to two of the stressors that were identified in Peters’ (2003) qualitative study, and were consistent with the findings of Scanlan and Darkenwald (1984). Frik et al. (1996) evaluated an innovative master of nursing degree program that accepted students with bachelor’s degrees in a discipline other than nursing, as well as those who had the traditional BSN. Their “evaluation did not reveal any differences in retention and successful completion of the masters program in nursing between the two groups” (p. 156). Reilley (2003) surveyed 215 RN-BSN students in an effort to determine the motivation, barriers, and persistence to complete the degree. The item “*personal satisfaction* was a driving force behind most RNs who pursued the BSN degree” (p. 81). Barriers identified were *family constraints*, such as role strain associated with parenting and *work constraints*, such as scheduling conflicts (Reilley). This is consistent with Cross (1981) who described institutional barriers, and Johnstone & Rivera (1965), and Scanlan & Darkenwald (1984), who described dispositional, as well as situational barriers.

The five non- research articles that discussed RN-MSN programs in general (Baker, 2007; Clark, 1997; Hagemaster, 1990; Streubert & Derstine, 1992; Zemaitis & Kosmach, 1991) are in agreement

that many times RNs have to jump over hurdles, trying to avoid many barriers to furthering their education when going to graduate school. This is most unfortunate when one realizes that

the rapidly changing world of health care - with a steady flow of technologic advances, patient acuity, and the often overwhelming needs of patients and families during and after hospitalizations has created a need for nurses who have specialized education. Because such education is best acquired at the master's level, nurse - educators believe that the RN-MSN programs offer today's nurses the best chance for being well-prepared for the years ahead. (Zemaitis & Kosmach, 1991, p. 137)

Deterrents to RN Participation in Continuing Education

Cullen's (1998) study was a descriptive one that used the Deterrents to Participation Scale (DPS) to "determine the reasons for nonparticipation in continuing education (CE) for RNs living in Delaware" (p. 228). The sample was 94 registered nurses in the state of Delaware.

Findings revealed that

the highest ranked or primary reason for nonparticipation in CE for the sample (n-94) was 'because other things happen to have a higher priority in my life.' The second highest ranked reason was 'because of all my other commitments, I don't have the time.' (Cullen, p. 230)

These findings supported those of Scanlan and Darkenwald (1984) and Cross (1981). When factor analysis was done "to determine which of the six factors identified by Scanlon's study were most influential as reasons for predicting nonparticipation in CE" (p. 230), *disengagement* was first, followed by *cost* (Cullen, 1998). These factors are consistent with the themes that have been presented throughout the literature review (Beder, 1990; Blais et al., 1989; Boshier, 1977; Clayton & Smith, 1987; Darkenwald & Merriam, 1982; Darkenwald & Valentine, 1985; Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984).

Dickinson and Clark (1975) used Houle's theory of adult learning "to identify learning orientations" (p. 5). They surveyed 220 women registered nurses in an attempt to "determine the relationships between learning orientations and participation in two types of learning activities, self

education and continuing education” (p. 5). Learning oriented nurses were “associated with various levels of participation in self education as well as continuing education” (p. 3).

Kubsch et al. (2003) studied 282 registered nurses to find out what factors influenced participation in continuing education programs. Nurses reported that two reasons they were not motivated to attend were *their lifestyle, and work hours did not allow for it and the cost of the programs were prohibitive*. This is consistent with Johnstone and Rivera (1965) who factored out *lack of time* and *cost* as deterrents to participation in adult education programs. Other deterrents that were identified in the Kubsch et al. study included *self consciousness* and *role conflict*. This finding was “consistent with those of Scanlan and Darkenwald (1984), who found *disengagement* among older adults to be a deterrent to CE participation” (Kubsch et al., 2003, p. 211).

Thompson’s (1992) qualitative study of 18 nurses revealed a new factor with regards to why nurses participate in continuing education. The factor that was identified was *commitment* (Thompson). This finding was consistent with Kubsch et al. (2003) whose findings suggested that “certification, higher level of nursing education, and full-time rather than part-time work status, had an effect on contact hour accrurement in an average year” (p. 211).

An excellent example of how far the field of adult education has come and has changed is exemplified by Joyce & Cowman’s (2007) study of 243 registered nurses in Ireland in an attempt to determine why they participated in continuing education. Their findings did not support the premise discussed by Blais et al. (1989) and proposed by older adult education studies (Johnstone & Rivera, 1965) that women tend to participate less in work related continuing education. “The major reasons for participating in post registration education were “to obtain promotion to a higher grade/position and to enable me to extend my clinical role” (Joyce & Cowman, 2007, p. 626). The changing status of women over the last two decades with more women in the workplace may account for this change (Merriam et al., 2007).

Deterrents to Participation in Web-based Distance Education

“The potential for pedagogical promise or peril lies not in the technological tools, but in the hands of those who wield them” (Schwartzman & Tuttle, 2002, p. 188). The infusion of technology into all aspects of life has encouraged the expansion of distance learning in education programs (Copley, 2007; Hostetter & Busch, 2006; Mancuso-Murphy, 2007). The nursing shortage has created a demand for nursing programs to graduate greater numbers of students without increasing numbers of faculty members (Mancuso-Murphy, 2007). Mancuso-Murphy suggests that “distance education is one proposed solution to educating more nurses to decrease and eventually eliminate the nursing shortage” (p. 252). Lewis and Price (2007) shared their experiences creating a blended face to face and online nursing course. They suggested that “e-learning has become a more flexible and accessible option in post graduate studies that is embraced by students and faculty alike” (p. 143). Self reported deterrents to participation in their course included that “28% of students found the number of postings for each tutorial overwhelming and found some course content daunting” (p. 142). “Some students were overwhelmed with content, whereas others were left feeling isolated” (p. 142). Weakness of this study was that it was strictly a self report evaluation of a single course by students.

Gruendemann (2007) suggested that “distance learning is a largely unplanned revolution, and it is here to stay. Today, making extensive use of computer technology to deliver nursing curricula is the norm” (p. 584). Many authors in the literature (Bradford et al., 2007; Diekelmann & Mendias, 2005; Lewis & Price, 2007; Mancuso-Murphy, 2007; O’Neil & Fisher, 2008; Ryan et al., 2004; Ryan et al., 2005) shared similar themes concerning the importance of distance learning faculty to become good, supportive, flexible course facilitators. Halstead and Billings (2009) suggested that “students learn when actively engaged, interact in a social and applied context, and reflect on their practice” (p. 377). There was some conflict in the literature with regards to the presence of critical thinking being used in distance learning. Maurino (2006) said that she was not able to find consistency in critical thinking

ability in distance learning in the 37 studies that she synthesized, yet Wang and Reeves (2006) not only found an increase in motivation, but suggested principles of design strategy that could be incorporated into distance learning classes in an effort to increase critical thinking skills (Wang & Reeves).

Mancuso-Murphy (2007) synthesized 12 research articles and two doctoral dissertations that studied online learning in the discipline of Nursing. Findings from this research review were consistent with other research studies (Bradford et al., 2007; Bray et al., 2007; Smith, 2005; Wang & Reeves, 2006) with regards to what is important in an effective online learning course: clear instructions, socialization, motivation, communication, active learning, supportive faculty and prompt feedback.

A model for nursing faculty teaching online was developed by Ryan et al. (2004) as a result of interviews with 20 online nursing faculty members. The model illustrated (a) *antecedent conditions* such as support systems, technology availability, and policy development, (b) *context*, such as curriculum issues, online environment and time frames, (c), *strategies* such as rethinking faculty roles, collaborating in online communication techniques, and (d) *consequences of teaching online*, such as increased workload for faculty, getting to know students better, and changing roles of faculty and students (Ryan et al., 2004). They validated this model in a national follow-up study in 2005, surveying “68 faculty from 28 schools all who taught online in Masters Degree or RN-BSN programs” (Ryan et al., 2005, p. 359). This model adds to the theory building that was developed by Hostetter and Busch (2006), which integrated social constructivist theory into distance learning. Constructivist theorists believe that “meaning is made by the individual and is dependent on the individual’s previous and current knowledge structure. Learning is thus an internal cognitive activity” (Merriam et al., 2007, p. 291). Billings (2007) lends support to this constructivist idea when she reported that “optimized distance education requires educators to create learning environments that empower students to learn content and apply it in a real-world context” (p. 248).

When looking at who participates in online distance learning, Kember et al. (1994) suggested that “distance education students are usually adults studying part-time while maintaining work, family and social commitments. Some choose to study by distance education because no suitable courses are available where they live” (p. 287). Faison (2003) is in agreement as she suggested that “the students in a distance learning environment are generally mature, married with children, self directed and employed more than half time” (p. 85). Kember et al. surveyed 1,087 online students and had a 50% response rate ($n = 555$). The study tested the Tinto model of “student persistence in distance education” (p. 286). “The model, therefore, could be used as a framework to guide discussions on many aspects of distance education” (Kember et al., p.298). “The findings offer support to open entry policies practiced now by many distance education courses” (p. 298). Two constructs of *collective affiliation* and *interstudent affiliation* were identified. Collective affiliation provides “increased communication between students and faculty” (p. 300). Interstudent affiliation “provides online opportunities for students to interact with each other” (p. 300).

Many students in Louisiana after Hurricanes Katrina and Rita in 2005, experienced first hand how online distance technology can positively impact educational programs during times of disaster (LaPrairie & Hinson, 2007). LaPrairie and Hinson shared their experiences of moving courses online in times of catastrophe.

Selwyn et al. (2006) “two and a half year study of adult learning and technology” (p. xi) in England and Wales used both qualitative and quantitative data from surveys, interviews and case studies of 1001 adults in an effort to find out who were learning how to use computers, and what were they doing with their computer knowledge. Selwyn et al. stated “a recurrent theme in our data, the majority of learning to use computers was informal rather than formal” (p. 170). Research findings of Selwyn et al. revealed that women tended to use computers slightly more than men for formal learning and men tended to use computers more for informal learning. They also reported that and access

played a major role of how and for what purposes computers were used in learning. Families with home computers reported using them more than those who had to rely on libraries or public computer sources. One interesting finding reported by Selwyn et al. was that

transitional learners (those who reported at least one episode of immediate post—compulsory education or training but nothing subsequently) were more likely than any other group to have used the world wide web to participate in formal online courses and/or lessons. (p.91)

Newell (2007) suggested that “a common thread among those who express a reluctance to engage in online distance education is the lack of interaction, both with the instructor and with other learners” (p. 34). Attack and Rankin (2002) did a descriptive study of registered nurses who participated in a web-based continuing education course and found that *insufficient time* and *access to computers* were deterrents. “One surprising finding was that of the 57 RNs who enrolled, 25% did not start the course” (p. 463). Another interesting finding in this study was that 16% of the participants did not complete the course, and “thirty-three percent (n=3) of those who dropped the course were work only users” (p. 462), meaning that they only logged on to the web continuing education course while at work. Other reasons for dropping out of the continuing education web course were “technical problems, difficulty accessing a computer, missing classroom learning, and web course workload” (p. 462). “Many nurses reported wanting more feedback from the teacher; they missed talking to the teacher and their peers” (p. 462). This supports the findings of Clayton and Smith (1987) with regards to reasons for participation in adult education programs, in that a “positive motivating factor found was *social*” (p. 102).

In trying to understand “methods employed by organizations to improve online abandonment rates” (Zielinski, 2000, p. 64), Zielinski reviewed corporate web course training evaluations, and shared that when employees at one company chose to participate in a face to face training class, 90% completed the training, whereas only 50% of those who chose to do the same training online actually completed the training (Zielinski). This is consistent with the online nursing course experiences shared

by Atack and Rankin (2002). These common threads also lend support to the barrier of isolation that is sometimes experienced in online courses as discussed by Zirkle et al. (2006) as well as by Ryan et al. (2005). Hostetter and Busch (2006) are also in agreement with this, as they identified the construct *social presence* as a needed phenomenon in online classes that was indeed possible to create by a skilled course facilitator. Diekelmann and Mendias (2005) introduced using a *narrative pedagogy* as another way to be a supportive presence to online students.

In a study of deterrents to certified public accountants' (CPAs) participation in Web-based continuing education by Perdue and Valentine (2000), they defined a deterrent as "a force working in combination with other forces to reduce the chance that an individual will elect to participate in a particular Web-based educational opportunity" (p. 8). A random sample of 800 Georgia CPAs were surveyed with a 55% response rate obtained ($n = 444$). Through factor analysis they were able to reduce the individual items to four factors which deter participation in online continuing education. The most influential deterrent factor was "*concerns about electronically mediated communication*" (p.20). The CPAs enjoyed face to face communication with teachers and other students instead of electronic (Perdue & Valentine). The second most influential deterrent factor was "*concerns about the quality of course offerings*" (p. 19). CPAs were worried about what others might think of the quality of a web based course, as well as the accuracy of the content (Perdue & Valentine). CPAs in this study, had sufficient access to resources to aid in the use of technology because the deterrent factor that was the least influential to the CPAs was "*concerns about access to technology-associated resources*" (p. 21). The CPAs reported having both patience and confidence in their personal ability to use the web, because the second least influential deterrent factor was "*concerns about the availability of necessary personal resources*" (p. 21). These CPAs usually chose not to participate in the online continuing education programs. It is interesting to note that these CPAs did not identify *cost* or *lack of time* as a deterrent. This, of course, does not support the themes that have been presented with regards to

deterrents to participation in general adult education (Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984).

Some themes that emerged from this review of the literature are (a) online distance technology is creating access to education for many students who might not otherwise have been able to participate (Copley, 2007; Gruendemann, 2007; Hostetter & Busch, 2006; Lewis & Price, 2007; Mancuso-Murphy, 2007), (b) because the field of distance learning is ripe with new technological changes occurring on a daily basis, technology support services are imperative (Nworie, 2006), and (c) *social presence* is an important concept in distance learning in order to build a sense of community (Diekelman & Mendias, 2005; Hostetter & Busch, 2006). Opportunities for research are endless and exciting, yet,

colleges and universities continue to struggle with reconciling the promise of distance education to its actual practice and researchers have not kept pace with the changing and increasing complexity of distance education leaving a literature base that is somewhat weak. (Bray et al., 2007, p. 906)

Sandars and Langlois' (2006) findings would seem to agree with the above quote by Bray et al. (2007). Sandars and Langlois reviewed sixteen research studies on online collaborative learning and shared "there is increasing interest in online collaborative learning for health-care continuing professional development but usually there is low participation. There have been few studies to guide further development and implementation in the healthcare context" (p. 584). The major theme of the Sandars and Langlois review was that "there has been a lack of appreciation of the needs of users" (p. 584). Sandars and Langlois also lamented the poor quality of much of the research on online learning with many being simple "evaluations of the use of discussion boards but sparse details of the number of participants, data collection methods and results" (p. 587). "Overall, most studies did not present the full data and the research methods were often insufficiently described" (p. 587). One has to be careful about generalizing the findings of Sandars and Langlois' literature search because they limited their

review to 16 articles from 1,252 possible references that resulted from their database search (Sandar & Langlois).

In contrast, Smith's (2005) qualitative study of 25 graduate students in an online course drew strength from the experience of the researcher who had a "strong background in group dynamics and experience-based learning" (p. 187), and the use of the method of triangulation in data collection. "The data collection sources included a background questionnaire, learner interviews, instructor interviews, debriefing papers, reflection journals, and the archived transcripts" (p. 187). The study's weakness was that it was "focused on eight groups in a single online course. The findings from this study, therefore, have limited generalizability" (p. 188). The findings indicated that the paradigm shift to online learning many times increases anxiety and conflicted feelings in collaborative groups. Facilitators of online courses can use this information to provide enough structure and clear instruction to alleviate this destructive aspect (Smith).

Cohen and Dacanay's (1994) findings concur with Sandars and Langlois (2006) in their description of the poor quality of research in online and computer learning. Cohen and Dacanay did a meta-analysis of 29 studies looking at computer based instruction in nursing education. They stated that their meta-analysis brought to light that "the quality of research reports leaves a lot to be desired" (p. 95). "The results from our meta-analysis show that, on average, computer based instruction has made a moderate contribution to the effectiveness of teaching in nursing education settings" (p. 930). It should be noted that the computer based instruction in this analysis included interactive video and simulation studies that were not web-based. The authors also limited their studies to those in a "diploma, baccalaureate, or continuing education program" (Cohen & Decanay, p. 90). It is a limitation that associate degree nursing programs were not included in this study.

Buxton (2004) conducted a qualitative study of RN-BSN lived experiences with online learning. She interviewed four online RN-BSN students and two online nursing faculty members in an effort to

understand their experiences with online learning. The themes that emerged from this study included “(a) pitfalls of technology, (b) differences in learning experiences (c) collaboration and the group process, (d) support, feedback and facilitation” (p. 124). These findings are consistent with Smith (2005) and Newell (2007).

Newell (2007) studied data from “89,473 students enrolled in online technical college courses offered through the Georgia Virtual Technical College” (p. 1). “The study found that age, ethnicity, and financial aid eligibility were significant predictors of online course completion. Older students, white students, and students not eligible for Pell grants were more likely to successfully complete online courses” (p. 1).

Jennings and Bayless’ (2003) study of 47 face to face students and 39 online students “revealed no significant difference in academic standing based on G.P. A. of those who selected online format over traditional on-campus format. Likewise, no significant difference was revealed in the ages of the students who made online course selection” (p. 188).

Debough (2003) did a correlational research design study surveying 43 graduate nursing students who were enrolled in a web-based course to determine predictors of satisfaction. After performing multiple regression analysis, the only one of the survey items that was a significant predictor of satisfaction with the web-based course was the quality of the instruction provided by the instructor.

Lerners et al. (2007) shared a summative and formative online PhD program evaluation. She suggested “daily online contact with professors and student peers is frequent, more than superficial, and allows for a deeper sharing of the personal self” (p. 335).

Andrusyszyn, Ledwell and Iwasew (2006) studied empowerment in distance education. They reported that “for a learning environment to be empowering, it must permit flexibility on their use of time” (p. 84). This finding relates back to the concepts identified by Johnston and Rivera (1965) and

Scanlan and Darkenwald (1984) where not having enough time consistently factored out in factor analysis.

Additional themes that have emerged in the literature with regards to deterrents to distance online learning include institutional barriers; such as no technology support for distance learning faculty and students, lack of available funds, and lack of consistent Internet access among students and faculty. (Bray et al., 2007; Eittington, 2002; Schwartzman & Tuttle, 2002; Zirkle et al., 2006).

Summary

In reviewing the related literature on the nursing faculty shortage and RN-MSN programs, deterrents to participation in adult education, deterrents to participation in web-based distance education, and deterrents to participation in RN continuing education; no published articles either empirical or otherwise were found that discussed what factors might contribute to an RN's choice to enroll in a web-based graduate nursing program, and there were no articles that discussed deterrents to RN's enrollment in web-based graduate nursing programs. This is a gap in the literature on web-based distance education in nursing. This research hopes to fill this gap. Web-based graduate nursing programs, such as the RN-MSN option, have the potential to graduate master's prepared RNs in a shorter amount of time (Baker, 2007; Beal, 2007). Since the master's degree is the minimal degree that a nurse can have to become a nursing faculty member (Louisiana State Board of Nursing, 2006) perhaps through these types of web-based programs, more nurses might choose to return to school to earn the master's and doctoral degrees and as a result there would be more master's and doctoral prepared nurses available to choose the faculty role.

CHAPTER 3

METHODOLOGY

Research Design

This chapter provides information regarding this study's research design, survey instrument description, population and sampling methods, and data collection procedures. A descriptive research design was employed for this study. In this type of design, the researcher's purpose is "to provide an accurate description or picture of the status or characteristics of a situation or phenomenon" (Johnson & Christensen, 2004, p. 347).

This study was a modified operational replication of the original research conducted by Perdue and Valentine (2000). "Replication by other researchers, that is, research examining the same variables with different people and in different ways, should make you more confident about a research finding because the resulting evidence is much stronger" (Johnson & Christensen, 2004, p. 21). Originally, the tool was created by Perdue (1999), under the supervision of Dr. Tom Valentine, for determining deterrents to participation in web-based continuing education by certified public accountants (CPAs) in the state of Georgia who were members of the Georgia Society of CPAs. Permission was obtained from Dr. Perdue and Dr. Valentine to adapt the Deterrents to Participation instrument for use with this new population of Louisiana RNs (see Appendix A).

A cross-sectional survey design utilizing the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument was employed (see Appendix B). This is a type of quantitative design where data are collected at one point in time for the purpose of measuring current attitudes or practices (Johnson & Christensen, 2004).

The primary purpose of this study was to determine what factors were identified as deterrents to participation in web-based graduate nursing programs by Louisiana registered nurses who were members of the Louisiana State Nurses Association (LSNA). Additionally, the study tested to see if

statistical differences in perceived deterrents to participation, as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool, exist among the following demographic characteristics: age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income. Approval to conduct this study was obtained from Louisiana State University Institutional Review Board (IRB). E4598 is the IRB approval number for the study (see Appendix C).

Population and Sample

This is what was defined as the target population: the target population included registered nurses in the state of Louisiana who were members of the Louisiana State Nurses' Association (LSNA). This is what was defined as the accessible population: the accessible population was registered nurses who are members of the Louisiana State Nurses' Association (LSNA). There are approximately 1100 nurse members in LSNA. A limitation is the fact that the 1100 nurses that are members of LSNA make up only 2% of the entire population of nurses in the state.

This is what was used to design the frame to determine the accessible population: an email list of LSNA members ($n = 1100$) as of April 1, 2009. The Executive Director of the LSNA was contacted and told the purpose of the study. Because of the confidentiality of the LSNA membership emails, the Executive Director of the LSNA could not give the researcher all of the members' email addresses. Instead, the researcher composed an introductory letter to members explaining the purpose of the research, with an invitation to participate by clicking on the survey monkey link embedded in the email. The sampling plan included having the Executive Director of the LSNA send this email to all of the registered nurse members of LSNA. Four follow up emails were sent to all members of the sample thanking those who participated and asking for the help of those who had not yet participated. This email was sent to the LSNA membership by the Executive Director of the Nursing Professional Organization.

Because Internet service providers are private rather than public providers, surveyors do not have the assumed right to contact people as was the case with telephone, nor do professional associations of surveyors support sending e-mails to populations with which the surveyor has no preexisting relationship (Dillman et al., 2009).

According to Dillman et al. (2009), multiple contacts are essential for increasing response to surveys. Instead of a pre-notice letter, Dillman et al. recommend starting the web survey with a survey invitation that includes the link to the survey. The first invitation was followed up with four follow up reminder emails. The following data collection procedure was followed:

1. An email with an electronic cover letter was sent requesting participant help in providing information for this important nursing education study. Instructions for completing the survey were sent, including the url link leading to the survey (see Appendix D).
2. Since this was an anonymous survey, non-respondents could not be identified, therefore one week after sending the email with the link, all members in the sample were sent an email reminder thanking those who already participated and asking those who did not yet participate to please help the researcher with the study. The email was embedded with a link to the survey (see Appendix E).
3. Two weeks following the first email reminder, all members in the sample were sent another email, containing a letter thanking those who have already participated and asking for those who have not participated to please help in providing important information for nursing education, and a link to complete the survey (see Appendix F).
4. One week after the second email reminder, a third email reminder to all members in the sample was sent thanking those who have already participated, with a note stressing the importance of those who have not yet participated to please help to provide important information for this study in nursing education, along with a link leading to the survey (see Appendix G).

5. One week after the third email reminder, a fourth and final email reminder to all members in the sample was sent thanking those who have already participated, with a note stressing the importance of those who have not yet participated to please help to provide important information for this study in nursing education, along with a link leading to the survey (see Appendix H).
6. The subject line in the email should tell that the e-mail is about a survey, who the sponsor is, and what the topic is. Dillman et al. (2009) state that

Trouteaud (2004) found that the subject line “Please help (name of company) with your advice and opinions” resulted in a 5% increase in response rates compared to the subject line “Share your advice and opinions now with name of company).” (p. 286)

Data collection took place over a period of eight weeks beginning May 29, 2009 and ending July 31, 2009. The web survey tool, *Deterrents to Participation in Web-based Graduate Nursing Programs*, was sent to participants using SurveyMonkey.com, an Internet survey company. SurveyMonkey allows links to be embedded in an email message and has the benefit of custom redirecting the page after completing the survey (SurveyMonkey.com, 2008). A total of four subsequent follow-up invitation reminders were sent via email (see Appendices E, F, G, and H). A total of 281 responses were obtained, making this a response rate of 26%. After completion of the survey, since non-respondents were not able to be identified, a comparison was made to determine if late respondents were statistically significantly different from early respondents. No significant differences were found between these two groups. The responses by response wave are presented in Table 1.

Findings and analysis of the deterrents to participation in web based graduate nursing programs survey data are presented in chapter four. Results are arranged and presented by research objective and include objectives one through five.

Table 1

Response Rates by Wave

Wave	<i>n</i>	Percentage
First invitation	171	60.9
Second invitation	9	3.2
Third invitation	3	1
Fourth invitation	63	22.4
Final invitation	35	12.5
Total	281	100.0

Methodologies Used for Each Objective**Objective 1**

To describe the personal demographics of a sample of registered nurses in the state of Louisiana, who are members of LSNA, with regards to age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income. Nominal variables of gender, race, computer literacy, marital status, and employment status were summarized using frequencies and percentages (Hinkle, Wiersma, & Jurs, 2003). Ordinal variables of age, years of being an RN, number of children, current educational status, parent's educational level, and household income were described using calculations of frequencies and percentages in each category (Hinkle et al.).

Objective 2

To describe deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA, as measured by the Deterrents to Participation in Web-based Nursing

Graduate Programs Survey Tool. Subjects were asked to indicate their agreement or disagreement to each of 54 interval-level statements regarding deterrents to participation in web-based graduate nursing programs. Analysis of this research objective was done measuring the mean and standard deviation of each statement (Mertler & Vannatta, 2005).

Objective 3

To describe latent constructs within the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, as identified by Louisiana RNs who are members of LSNA, that emerge statistically following factor analysis of the dataset. Factor analysis is a statistical procedure based on correlation among a large set of measures (Johnson & Christensen, 2004). The goal of exploratory factor analysis “is to describe and summarize data by grouping together variables that are correlated” (Mertler & Vannatta, 2005, p. 257). Exploratory factor analysis is the appropriate test to use for this objective. The researcher used principal axis factor analysis to reduce the number of independent variables or items (Hair, Black, Babin, & Anderson, 2010).

Objective 4

To determine if differences in perceived deterrents to participation as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool exist among the following demographic characteristics: age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent’s educational level, and household income. The statistical test for this objective was either a simple *t* test for comparisons, or a one way ANOVA depending on whether the dependent variable was quantitative and the independent variable had more than two categories (Mertler & Vannatta, 2005).

Objective 5

To determine if a model exists which explains a significant portion of the variance of deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA

as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool, and the demographic characteristics of age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income. This objective was addressed by using multiple regression analysis. Multiple regression is a statistical procedure that involves predicting criterion values from examining the relationships between the predictor values (Hinkle et al., 2003).

Multiple regression identifies the best combination of predictors (independent variables) of the dependent variable. Consequently, it is used when there are several independent quantitative variables and one dependent quantitative variable. To produce the best combination of predictors of the dependent variable, a sequential multiple regression selects independent variables, one at a time, by their ability to account for the most variance in the dependent variable. As a variable is selected and entered into the group of predictors, the relationship between the group of predictors and the dependent variable is reassessed. When no more variables are left that explain a significant amount of variance in the dependent variable, then the regression model is complete. (Mertler & Vannatta, 2005, p. 14)

Collinearity tests were done to assess degree of redundancy among the independent variables. Variance inflation factor values (VIF) and tolerance levels (TOL) were computed. These two measurements are reciprocals of each other. Smaller tolerance levels, especially levels less than .01 indicate high collinearity (Hinkle et al., 2003). SPSS eliminates predictor variables in a model that have a tolerance of less than .0001. A researcher can choose to set his/her own criteria for tolerance higher such as eliminating "any variable that has a tolerance level of less than .01" (Brace, Kelp, & Snelgar, 2003, p. 221). The researcher can also examine the VIF which is the reciprocal of tolerance. A large VIF value "indicates a strong relationship between predictor variables" (Brace et al., 2003, p. 221). The researcher of this study chose to use the tolerance and VIF criteria set by Hair et al. (2010) which suggests that collinearity is usually not a problem as long as tolerance values are greater than 0.1 and variance inflation factors are less than 10.

Instrumentation

The instrument used in this study was the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool. This tool was adapted from a survey tool created by Perdue (1999) under supervision of Dr. Tom Valentine. Permission to use and to adapt the original Deterrents to Participation in Web-based Continuing Education Survey Tool for Georgia CPAs to the population of nursing was obtained from Dr. Kathy Perdue and Dr. Tom Valentine (see Appendix A) who originally created the tool to be used on a sample of Certified Public Accountants. Perdue (1999) employed a rigorous process for development of the Deterrents to Participation in Web-based Continuing Education Survey Tool used in the study of CPAs in Georgia. This process involved querying CPAs with email interviews, telephone interviews of continuing professional education administrators, and email interviews with providers of continuing professional education in an effort to obtain a list of potential deterrents to participation in web-based continuing education.

Content validity is the degree to which items on the instrument actually measure the subject under study (Johnson & Christensen, 2004). Perdue (1999) used the literature review, interviews by telephone, and emails to different CPA sources to create an initial pool of 242 potential deterrent items. She analyzed each one for semantic equivalents and eliminated redundant items to reach a pool of 65 items (Perdue, 1999). She added 10 personal demographic items. A panel of experts reviewed the instrument and it was pilot tested and a factor analysis was run. The final instrument was changed after the initial pilot test to contain 57 deterrent items and demographic items (Perdue). The final study was done with the revised instrument on a simple random sample of 800 potential respondents, with a return rate of 55.6%. The CPAs identified four groupings of deterrents to participation in web-based education through factor analysis: concerns about electronically-mediated communication, concerns about the quality of course offerings, concerns about access to technology and concerns about the availability of necessary personal resources (Perdue, 1999; Perdue & Valentine, 2000).

Pilot Test of the Instrument Adapted for a Nursing Population

The adapted nursing survey tool was pilot tested as a part of a class assignment for Dr. Eugene Kennedy's statistics course in the fall of 2008 on 35 second semester nursing students. Approval to conduct the pilot study was obtained from Louisiana State University Institutional Review Board, approval #E4226, and the Our Lady of the Lake College Institutional Review Board, approval #0812 (see Appendix C).

The purpose of the pilot was to test the tool on nursing students so that the researcher might obtain information about ways to improve the tool for use in the dissertation study of RNs. "It is a cardinal rule in research that you must try out, or pilot test, your questionnaire to find out whether it operates properly" (Johnson & Christensen, 2004, p. 177).

The tool was pilot tested as a web survey using SurveyMonkey.com, an Internet survey company. SurveyMonkey allows links to be embedded in an email message, and has the benefit of custom redirecting the page after completing the survey (SurveyMonkey.com, 2008). The selected sample members received an e-mail invitation to participate in the study and a link to a closed web-based questionnaire. Only invited participants had access to the questionnaire. The pilot study used a convenience sample of 35 second semester associate degree nursing students at one southern college in Louisiana in an effort to examine what second semester associate degree nursing students identified as deterrents to participation in web-based graduate nursing programs. A reliability analysis was run on the data gathered from the instrument, and a space at the end of the survey tool was left blank for participant comments about how to improve the tool.

Prior to administering the survey, the pilot instrument was reviewed by a Ph.D. distance learning expert, K. Machtmes, who gave input into the appropriateness of the items. The tool was also reviewed by a Ph.D. statistics research expert, E. Kennedy, who also gave input into the overall readability and understandability of the instrument. Suggestions for allowing free comments at the end of the survey

so participants could comment on how the survey could be improved was suggested by Dr. Kennedy, and this suggestion was included as a change in the tool prior to the survey pilot test. A suggestion to make the directions sound a little less pro-web-based learning was used, for the dissertation survey. Since this was not an experimental study, there was no hypothesis.

The respondents were asked to indicate their agreement with each statement by using a four point Likert-type interval scale: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. At the end of the electronic survey, the respondents were asked to select the most appropriate response to demographic questions.

Findings of the Pilot Test

The researcher sent out 162 electronic surveys in survey monkey to second semester nursing students and received 35 responses, making this a 22% return rate. First the researcher imported the Excel spreadsheet data that survey monkey had downloaded from the electronic survey software program into SPSS 17. After inspecting the data, looking for missing cases and errors, the researcher made sure that the labels were clear and that the Likert- type scale variables were treated as interval scale data. Brace et al. (2003) state that we can assume that the intervals in the 4 point Likert - type interval scale are evenly spaced so that the data is considered interval.

The categorical demographic data that was collected included age, gender, socioeconomic status, educational level of parents, and computer literacy. A limitation of this pilot test of the survey tool was that the sample size of 35 participants is not an acceptable sample size. “For a correlation to be acceptable one should normally test around 100 participants; otherwise a small number of participants with extreme scores could skew the data and either prevent a correlation from being revealed when it does exist or cause an apparent correlation that does not really exist. The scattergram is a useful tool for checking such eventualities” (Brace et al., 2003, p. 80). The six lowest mean scores of nursing students in the pilot study indicated the items that were identified as least likely to be deterrents to

participation in online graduate nursing programs. The identified items were: (a) not having computer hardware ($M = 1.33$), (b) not having technical knowledge ($M = 1.38$), (c) not having skill to download ($M = 1.42$), (d) not having reliable access to the Internet ($M = 1.46$), (e) not having reliable access to email ($M = 1.33$), and (f) not having enough patience ($M = 1.54$).

All of these low deterrent items, except for lack of patience, involved technical aspects of participating in online nursing graduate programs. So it seems that these nursing students felt like they had the patience and the technical access to participate. This finding was similar to the findings of Perdue and Valentine (2000) who used the original form of this instrument to study deterrents to participation in online continuing education by certified public accountants. They found that the bottom ten items fell “conceptually into the category of access to resources” (p. 84).

The six highest mean scores of the nursing students in this pilot study indicated the items that were identified as most likely to be deterrents to participation in web-based graduate nursing programs. The identified deterrent items were: (a) preferring face to face interaction with peers ($M = 2.88$), (b) preferring face to face interaction with instructors ($M = 2.88$), (c) concerned that the instructor might not be available when needed ($M = 3.00$), (d) concerned about not being able to evaluate quality of web-based courses before I enroll ($M = 3.21$), (e) concerned that others might not value web-based graduate nursing programs ($M = 3.13$), (f) and concerned about submitting financial information over the Internet ($M = 2.88$).

These six high deterrents involved teaching methodology preferences and concerns about the value of web-based programs, and about security of submitting financial information over the Internet while participating in a web-based graduate nursing program. This is similar to the findings of Perdue and Valentine (2000) whose top ten deterrent mean scores “involved educational methodology preferences, with six of these dealing with interaction preferences. The other three items in the top 10 encompass evaluation concerns, time constraint concerns and security concerns” (p. 84).

The data gathered from the instrument was assessed for reliability. The Cronbach's alpha for the instrument of 54 items for this pilot study was .935. Two improvements in the instruments were made as a result of suggestions by the pilot study participants: item 41 and item 30 were both missing the answer choice *agree*. This was corrected.

CHAPTER 4

RESULTS

The primary purpose of this study was to determine what factors were identified as deterrents to participation in web-based graduate nursing programs by Louisiana registered nurses who were members of the Louisiana State Nurses Association (LSNA). Because emails of the LSNA are considered private, the LSNA executive director was unable to give the researcher access to a membership email list that could serve as a frame. The executive director instead, agreed to send a group invitation to the entire LSNA membership of 1100 members, inviting them to participate in the study (see Appendix D). Data collection took place over a period of eight weeks beginning May 29, 2009 and ending July 31, 2009. The web survey tool, Deterrents to Participation in Web-based Graduate Nursing Programs, was sent to participants using SurveyMonkey.com, an Internet survey company. SurveyMonkey allows links to be embedded in an email message and has the benefit of custom redirecting the page after completing the survey (SurveyMonkey.com, 2008). A total of four subsequent follow-up invitation reminders were sent via email (see Appendices E, F, G, and H). A total of 281 responses were obtained, making this a response rate of 26%. Findings and analysis of the deterrents to participation in web based graduate nursing programs survey data are presented in this chapter. Results are arranged and presented by research objective and include objectives one through five.

Objective One

Objective one of the study was to describe the personal demographics of a sample of registered nurses in the state of Louisiana, who are members of LSNA, with regards to age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.

Age

The sample was initially described on the variable “Age.” Respondents were asked to choose from the most appropriate category “18-25,” “26-35,” “36-45,” “46-55,” “56-65,” and “over 65.” The largest number of respondents indicated their age as between 46-55 years ($n = 96$, 34.3%). The second largest group was the 56-65 age group, with 66 (23.6%) of the respondents indicating their age in this group. The smallest number of respondents indicated their age as between 18-25 years ($n = 7$, 2.5%). One respondent did not indicate his/her age. Table 2 illustrates data regarding the sample’s age distribution.

Table 2
Age Distribution of Louisiana State Nurses’ Association RN Respondents to the Survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Age in Years	n^a	Percentage
18-25	7	2.5
26-35	31	11.1
36-45	63	22.5
46-55	96	34.3
56-65	66	23.6
Over 65	17	6.0
Total	280	100.0

^aOne respondent failed to respond to the age item on the questionnaire.

Ethnicity

Regarding ethnicity, the majority of the respondents reported their ethnicity as Caucasian/White ($n = 238$, 85.6%). Thirty-one respondents indicated their race as “African-American” ($n = 31$, 11.2%).

One respondent indicated his/her ethnicity as “Asian” ($n = 1, 0.3\%$). Three respondents indicated their ethnicity as “Hispanic, Latino/a” ($n = 3, 1.1\%$) and five respondents indicated their ethnicity as “other” ($n = 5, 1.8\%$). Three respondents did not indicate their ethnicity. Table 3 illustrates data regarding ethnicity of the respondents.

Table 3

Ethnicity as reported by Louisiana State Nurses’ Association RN Respondents to the Survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Ethnicity	n^a	Percentage
African American	31	11.2
Asian	1	0.3
Caucasian/White	238	85.6
Hispanic/Latino-a	3	1.1
Other	5	1.8
Total	278	100.0

^a Three respondents failed to respond to the ethnicity question

Gender

Respondents were asked to describe themselves in relation to gender. The majority of the respondents identified themselves as female ($n = 262, 94.6\%$). Only fifteen respondents ($n = 15, 5.4\%$) identified themselves as male. Table 4 illustrates data regarding gender of the respondents.

Table 4

Gender as reported by Louisiana State Nurses’ Association RN Respondents to the Survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Gender	n	Percentage
Female	262	94.6

(Table Continued)

Male	15	5.4
Total	277	100.0

^aFour respondents failed to respond to the gender question

Computer Literacy

Respondents were asked to describe themselves on their level of computer literacy. They were asked to select from the following choices: “not computer literate,” “somewhat computer literate,” “computer literate,” or “very computer literate.” The group with the largest number of responses was the “computer literate” group ($n = 125$, 45.1%). The second largest group was the “very computer literate” group ($n = 86$, 31%). Only four respondents identified themselves as “not computer literate” ($n = 4$, 1.4%) and 62 respondents described themselves as “somewhat computer literate (22.4%). Four respondents did not answer the question. Table 5 illustrates the data regarding computer literacy of the respondents.

Table 5
Computer Literacy as reported by Louisiana State Nurses’ Association RN Respondents to the Survey
Deterrents to Participation in Web-Based Graduate Nursing Programs

Computer literacy	n^a	Percentage
Not computer literate	4	1.4
Somewhat computer literate	62	22.4
Computer literate	125	45.1
Very computer literate	86	31.0
Total	277	100.0

Note. Total percent rounded from 99.9

^aFour respondents did not respond to the question concerning computer literacy.

Years as a Registered Nurse

The respondents were asked to identify how many years they have been a registered nurse (RN), “1 - 5 years,” “6 - 10 years,” “11 - 15 years,” “16 - 20 years,” and “over 20 years.” The majority of the respondents identified themselves as being an RN for over twenty years ($n = 149$, 53%). The second largest group of respondents was the “1 - 5 years” group ($n = 42$, 14.9%). The smallest group of respondents identified themselves as being an RN for 6-10 years ($n = 25$, 8.9%). Table 6 illustrates the survey data with regards to years of being a registered nurse.

Table 6

Description of the Number of Years worked as a Registered Nurse as reported by Louisiana State Nurses' Association RN respondents

Years as an RN	<i>n</i>	Percentage
1 - 5 years	42	14.9
6 - 10 years	25	8.9
11 - 15 years	32	11.4
16-20 years	33	11.7
Over 20 years	149	53.0
Total	280	100.0

Note. Total percent has been rounded from 99.9

Current Educational Status

The respondents were asked to identify their current educational status. The largest group (42%) of respondents reported that they held master's degrees ($n = 118$). Of these master's prepared respondents, forty six identified themselves as being faculty members with master's degrees (16.4%), twenty five identified themselves as nurse practitioners (8.9%), eighteen reported that they were

clinical nurse specialists (6.4%), twenty nine identified themselves as administrators (10.4%). Thirty respondents (9.3%) reported that they were faculty members with earned doctorates; eighteen (1.1%) of which were Doctors of Philosophy (PhD), ten (0.4%) were Doctors of Nursing Science (DNS), and two (1.4%) were Doctors of Nursing Practice (DNP). Ten respondents reported that they were diploma graduates (3.6%) and thirty five identified themselves as associate degree graduates (12.5%). Seventy respondents reported that they were baccalaureate degree graduates (25%). Seventeen respondents identified themselves as graduate students. Of the graduate students, nine identified themselves as being in a master's program and eight identified themselves as being in a doctoral program. Table 7 illustrates the survey data with regards to the respondents' current educational status.

Table 7
Description of Current Educational Status as reported by Louisiana State Nurses' Association RN Respondents

Status	<i>n</i> ^a	Percentage
BSN	70	25.0
ASN	35	12.5
Diploma	10	3.6
Master's NP	25	8.9
Master's Nurse Administrator	29	10.4
Master's CNS	18	6.4
Master's Faculty	46	16.4
PhD faculty	18	6.4
DNS faculty	10	3.6
DNP faculty	2	0.7
Master's grad student	9	3.2 (Table Continued)

PhD grad student	3	1.1
DNS grad student	1	0.4
DNP grad student	4	1.4
<hr/>		
Total	280	100.0

^aOne respondent did not indicate their current educational status.

Marital Status

The respondents were asked to identify their marital status. The largest group identified themselves as married ($n = 191$, 69%). The second largest group identified themselves as single ($n = 45$, 16.2%). Ten identified themselves as widowed (3.6%) and thirty one identified themselves as divorced (11.2%). Table 8 illustrates the marital status of the survey respondents.

Table 8
Description of Marital Status as reported by Louisiana State Nurses' Association RN Respondents

Marital Status	n^a	Percentage
Married	191	69.0
Widowed	10	3.6
Divorced	31	11.2
Single	45	16.2
<hr/>		
Total	277	100.0

^aFour study participants did not respond to this item.

Number of Children

Respondents were asked to identify themselves with regards to the number of children that they have. The largest group of respondents said they had "1 - 2 children" ($n = 145$, 52.5%). The second

largest group was almost evenly split between “3 - 4 children” ($n = 62$, 22.3%), and “none” ($n = 61$, 21.9%). Only three respondents identified that they had “more than five children” (1.1%). Three respondents did not answer the question concerning number of children. Table 9 illustrates the survey data with regards to respondent number of children.

Table 9
Description of Number of Children as reported by Louisiana State Nurses’ Association RN Respondents

Number of children	n^a	Percentage
None	61	21.9
1 - 2	146	52.5
3 - 4	62	22.3
4 - 5	6	2.2
More than 5	3	1.1
Total	278	100.0

^aThree respondents did not respond to the question about number of children.

Employment Status

Respondents were asked to identify their employment status by identifying their current area of nursing practice. The majority of the respondents identified “other” ($n = 116$, 41.4%) as their current area of nursing practice. The researcher did not ask the respondents who chose “other” to identify what area was meant by this choice; however, from inspecting the table labeled educational status, the researcher can see that many of the respondents were nursing faculty members, and the choice of “educator” was not placed on the survey. This might account for the majority of respondents choosing the “other” category, if indeed, they were educators. The second largest group of respondents identified “medical - surgical” ($n = 50$, 17.9%) as their area of practice. Twenty seven respondents

(9.6%) chose “critical care” as their area of practice. The smallest group of respondents chose the “operating room” ($n = 8$, 2.9%). Table 10 illustrates the survey data with regards to employment status.

Table 10
Description of Area where Employed as reported by Louisiana State Nurses’ Association RN Respondents

Area of practice	n^a	Percentage
Medical - surgical	50	17.9
Psychiatric	12	4.3
Pediatric	13	4.6
Ob/Gyn	13	4.6
Critical care	27	9.6
Operating room	8	2.9
Community health	15	5.4
Family practice	12	4.3
Other	116	41.4
Not practicing	14	5.0
Total	280	100.0

^aOne respondent did not answer the question concerning area of current practice

Parents’ Educational Level

Respondents were asked to identify the level of education of their mothers and their fathers. The largest group of respondents identified that their mother completed high school or GED ($n = 95$, 34.3%). The second largest group of respondents identified their mothers’ educational level as “has some college education, but no degree” ($n = 65$, 23.5%). Only seventeen respondents reported that

their mothers had earned a graduate degree in college (6.1%). Thirty eight respondents (13.7%) identified that their mothers did not complete high school. Four respondents did not answer this question about their mothers' educational status. Table 11 illustrates the survey data with regards to their mothers' educational status.

Table 11
Description of Mothers' Educational Level as reported by Louisiana State Nurses' Association RN Respondents

Mothers' educational level	<i>n</i> ^a	Percentage
Did not complete high school	38	13.7
Completed high school or GED	95	34.3
Has some college but no degree	65	23.5
Earned an associates degree	20	7.2
Earned a bachelor's degree	42	15.2
<u>Earned a graduate degree</u>	<u>17</u>	<u>6.1</u>
Total	277	100.0

^a Four respondents did not answer the question about mothers' educational level.

With regards to identifying their fathers' educational level, the largest group of respondents identified that their fathers completed high school or GED ($n = 96$, 34.4%). The second largest group chose "has some college but no degree" ($n = 60$, 21.5%). Thirty nine respondents identified that their fathers did not complete high school ($n = 39$, 14%). Two respondents did not answer this question. Table 12 illustrates the survey data with regards to fathers' educational level.

Table 12
Description of Fathers' Educational Level as reported by Louisiana State Nurses' Association RN Respondents

Fathers' educational level	<i>n</i> ^a	Percentage
Did not complete high school	39	14
Completed high school or GED	96	34.4 (Table Continued)

Has some college but no degree	60	21.5
Earned an associate's degree	9	3.2
Earned a bachelor's degree	47	16.8
Earned a graduate degree	28	10.0
Total	279	100.0

Note. Total percent rounded from 99.9

^aTwo respondents did not answer the question about fathers' educational status.

Household Income

Respondents were asked to identify their household income. The largest group of respondents identified their household income as "over 100,000 dollars per year" ($n = 129$, 48.1%). The second largest group of respondents identified their salary as "76,000 - 100,000 dollars per year" ($n = 66$, 24.6%). Table 13 illustrates the survey data with regards to household income.

Table 13

Description of Annual Household Income as reported by Louisiana State Nurses' Association RN respondents

Income Range in United States Dollars	n^a	Percentage
Less than 20,000	3	1.1
20,000-50,000	16	6.0
50,001-75,000	54	20.1
75,001-100,000	66	24.6
Greater than 100,000	129	48.1
Total	268	100.0

Note. Total percent rounded from 99.9

^aA total of 13 participants failed to respond to this item on the survey instrument.

Objective Two

Research objective two was to describe deterrents to participation in web-based graduate nursing programs by RNs who are members of the Louisiana State Nurses' Association (LSNA), as measured by the Deterrents to Participation in Web-Based Nursing Graduate Programs Survey Tool. Participants in the study responded to 54 items regarding their level of agreement or disagreement, with 1 = "strongly disagree"; 2 = "disagree"; 3 = "agree"; and 4 = "strongly agree". To aid in the interpretation of these responses, the researcher established a scale of interpretation as follows: 1.0 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent and 3.50 - 4.0 = a strong deterrent. Analysis of this research objective was done measuring the mean and standard deviation of each statement. Item means ranged from 1.45 to 2.67. No item was identified as a strong deterrent with a mean at or above 3.50. Only seven items were identified as "a moderate deterrent" with a mean of 2.5 - 3.49. Theoretically, these items would provide a moderate deterrent to a respondent's participation in a web based graduate nursing program. Forty seven items were identified as "a mild deterrent" with a mean of 1.5 - 2.49. Two items were identified as "not a deterrent" with a mean of 1.0 - 1.49. The top ten highest deterrent means are illustrated in Table 14.

Table 14

Highest Means of Identified Deterrents to Participation in Web-Based Graduate Nursing Programs as reported by Registered Nurses in the Louisiana State Nurses' Association

Deterrent	<i>M</i> ^a	<i>SD</i>	Classification
No authority in my work environment to download software	2.67	1.16	Moderate deterrent
Others might not place as high a value on web-based programs	2.63	.905	Moderate deterrent
Prefer face to face interaction with the instructor	2.63	.909	Moderate deterrent
Prefer face to face interaction with my peers	2.58	.878	Moderate deterrent
Can't evaluate the quality of a web program before enrolling	2.55	.962	Moderate deterrent (Table Continued)

Prefer traditional classroom instruction	2.51	.922	Moderate deterrent
Too many interruptions in my office or home to participate	2.51	.940	Moderate deterrent
Prefer hearing lectures in person	2.48	.926	Mild deterrent
Not enough quality courses	2.43	.836	Mild deterrent
Prefer using printed materials	2.43	.878	Mild deterrent

^aMean values based on the 4 point Likert-type response scale 1= Strongly Disagree, 2= Disagree, 3=Agree, 4= Strongly Agree that these items are deterrents to participation in web-based graduate nursing programs.

^bInterpretive scale: 1.00 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent, 3.50 - 4.0 = a strong deterrent

Of the top ten deterrents identified, the majority involve *educational methodology preferences* such as “a preference for face to face interaction with peers” ($M = 2.58$, $SD = .878$) and “face to face interaction with instructors” ($M = 2.63$, $SD = .909$), “a preference for traditional classroom instruction” ($M = 2.51$, $SD = .909$), “hearing lectures in person” ($M = 2.48$, $SD = 2.48$) and “prefer the using of printed materials” ($M = 2.43$, $SD = .878$), *work related concerns* such as “too many interruptions in the office or home” ($M = 2.51$, $SD = .940$), “no authority in the work environment to download needed software” ($M = 2.67$, $SD = 1.16$); and *evaluation concerns* such as “can’t evaluate the quality of a web program before enrolling” ($M = 2.55$, $SD = .962$), “concern that others might not place as high a value on a web-based program” ($M = 2.63$, $SD = .905$), “not enough quality courses” ($M = 2.43$, $SD = .836$).

The number one deterrent was that respondents were “concerned that they did not have authority in their work environment to download software needed in a web-based graduate nursing program” ($M = 2.67$, $SD = 1.16$). The second highest mean deterrent was a “concern that others might not place as high a value on web-based programs” ($M = 2.63$, $SD = .905$).

The deterrents that scored a low mean would theoretically be the items that were identified as providing the least deterrence to participation in a web-based graduate nursing program. There were 45

items that were considered lower mean scores. The bottom ten items with the lowest means included only two items that were identified as “not a deterrent” with a mean of 1.49 or below. These two items included “a concern about not having the computer hardware to be able to participate” ($M = 1.45$, $SD = .702$), and “no email access” ($M = 1.46$, $SD = .635$). The remaining bottom ten lowest mean items identified as “a mild deterrent” with means at 1.50 - 2.49 included “concerns about not having the computer software to participate in a web-based graduate nursing program” ($M = 1.54$, $SD = .766$), “no Internet access” ($M = 1.60$, $SD = .729$), “no technical knowledge” ($M = 1.60$, $SD = .768$), “no patience to learn how to use the web” ($M = 1.61$, $SD = .675$), “cost of connecting to the Internet too high” ($M = 1.67$, $SD = .668$), “no skill to download the necessary computer software” ($M = 1.70$, $SD = .809$), “no confidence” ($M = 1.72$, $SD = .805$), and “websites may change appearance” ($M = 1.74$, $SD = .679$).

The remaining items with low means between 1.50 and 2.49 on the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey Tool were each classified as “a mild deterrent.” They included “no time to learn how to use the web” ($M = 1.74$, $SD = .741$), “reluctant to download software” ($M = 1.79$, $SD = .852$), “never occurred to me” ($M = 1.80$, $SD = .834$), “a concern about getting lost in web sites” ($M = 1.83$, $SD = .775$), “not cost effective” ($M = 1.86$, $SD = .764$), “no sufficient advantages” ($M = 1.89$, $SD = .751$), “graphics and streaming video might be too distracting” ($M = 1.89$, $SD = .713$), “downloading takes too long” ($M = 1.90$, $SD = .760$), “computer may take too long to bring up the screen” ($M = 1.91$, $SD = .787$), “cost of purchasing computer hardware too high” ($M = 1.93$, $SD = .826$), “concern about submitting written comments over the Internet” ($M = 1.94$, $SD = .783$), “no access to technology support” ($M = 1.97$, $SD = .917$), “nursing credits may not be properly documented by the provider” ($M = 1.97$, $SD = .823$), “accuracy of course content” ($M = 1.99$, $SD = .748$), “unable to combine vacation time with fulfilling my responsibilities in a web-based graduate nursing program” ($M = 1.99$, $SD = .706$), “cost of printing too high” ($M = 2.00$, $SD = .823$), “relevancy

of course content” ($M = 2.03$, $SD = .800$), “takes too long to complete” ($M = 2.04$, $SD = .780$), “might not provide printed reference materials” ($M = 2.05$, $SD = .779$), “major not available” ($M = 2.08$, $SD = .840$), “e - discussions could lack focus” ($M = 2.10$, $SD = .786$), “misinterpretation of e-communication” ($M = 2.12$, $SD = .810$), “State Board of Nursing will not recognize credits” ($M = 2.12$, $SD = .888$), “too frustrating” ($M = 2.15$, $SD = .867$), “less variety than in a traditional setting” ($M = 2.15$, $SD = .770$), “can’t get a recommendation from other nurses enrolled in one” ($M = 2.19$, $SD = .781$), “might not provide feedback” ($M = 2.22$, $SD = .805$), “too much time staring at a computer” ($M = 2.23$, $SD = .835$), “concerned about submitting financial information over the Internet” ($M = 2.25$, $SD = .888$), “concerned I might not participate enough in online discussions” ($M = 2.34$, $SD = .888$), “concerned that I might feel isolated” ($M = 2.36$, $SD = .894$), “not self motivated to complete” ($M = 2.37$, $SD = .984$), and “concerned about no availability of instructor” ($M = 2.41$, $SD = .842$). The means for these bottom deterrent items with low means are illustrated in Table 15.

Table 15
Lowest Means of Identified Deterrents to Participation in Web-Based Graduate Nursing Programs as reported by Registered Nurses in the Louisiana State Nurses’ Association.

Deterrent	M^a	SD	Classification ^b
Concern about not having the computer hardware	1.45	.702	Not a Deterrent
Concern about not having email access	1.46	.635	Not a Deterrent
Concern about not having the computer software	1.54	.766	Mild Deterrent
No Internet access	1.60	.729	Mild Deterrent
No technical knowledge	1.60	.768	Mild Deterrent
No patience to learn how to use the web	1.61	.675	Mild Deterrent
Cost of connecting to the Internet	1.67	.668	Mild Deterrent

(Table Continued)

No skill to download the necessary computer software	1.70	.809	Mild Deterrent
No confidence	1.72	.805	Mild Deterrent
Websites may change appearance	1.74	.679	Mild Deterrent
No time to learn how to use the web	1.74	.741	Mild Deterrent
Reluctant to download software	1.79	.852	Mild Deterrent
It never occurred to me to participate in a web-based graduate nursing program	1.80	.834	Mild Deterrent
Not cost effective	1.86	.764	Mild Deterrent
<hr/>			
A concern about getting lost in web sites	1.83	.775	Mild Deterrent
Graphics and streaming video might be too distracting	1.89	.713	Mild Deterrent
No sufficient advantages	1.89	.751	Mild Deterrent
Downloading takes too long	1.90	.760	Mild Deterrent
Computer may take too long to bring up the screen	1.91	.787	Mild Deterrent
Cost of purchasing computer hardware too high	1.93	.826	Mild Deterrent
Concern about submitting written comments over the Internet	1.94	.783	Mild Deterrent
No access to technology support	1.97	.917	Mild Deterrent
Nursing credits may not be properly documented by the provider	1.97	.823	Mild Deterrent
Accuracy of course content	1.99	.748	Mild Deterrent
Unable to combine vacation time with fulfilling my web-based graduate nursing program responsibilities	1.99	.706	Mild Deterrent
Cost of printing too high	2.00	.823	Mild Deterrent
Relevancy of course content	2.03	.800	Mild Deterrent
Takes too long to complete	2.04	.780	Mild Deterrent
Might not provide printed reference materials	2.05	.779	Mild Deterrent
		(Table Continued)	

Major not available	2.08	.840	Mild Deterrent
E-discussions could lack focus	2.10	.786	Mild Deterrent
Misinterpretation of e-communication	2.12	.810	Mild Deterrent
Concerned State Board of Nursing will not recognize Credits	2.12	.888	Mild Deterrent
Too frustrating	2.15	.867	Mild Deterrent
Less variety than traditional classroom	2.15	.770	Mild Deterrent
Can't get a recommendation from other nurses enrolled in a web-based graduate nursing program	2.19	.781	Mild Deterrent
Might not provide feedback	2.22	.805	Mild Deterrent
Too much time staring at a computer	2.23	.835	Mild Deterrent
Concerned about submitting financial information over the Internet	2.25	.888	Mild Deterrent
Concerned about submitting personal information over the Internet	2.28	.891	Mild Deterrent
Concerned I might not participate enough in online discussions	2.34	.888	Mild Deterrent
Might feel isolated	2.36	.894	Mild Deterrent
No self - motivation to complete	2.37	.984	Mild Deterrent
No availability of instructor	2.41	.842	Mild Deterrent

^aMean values based on the 4 point Likert - type response scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree that these items are deterrents to participation in web-based graduate nursing programs.

^b Interpretive scale: 1.0 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent, 3.5 - 4.0 = a strong deterrent

A majority of the items had means below 2.49 and were classified into the category of being a “mild deterrent” to participation in web - based graduate nursing programs. These items fall conceptually into three categories. The first category is *concerns about technology related problems* such as access, Internet costs, technology support, concerns about sending written comments over the Internet, concerns about sending financial information over the Internet, isolation fears, lack of

technical skill, change in website appearances, lack of software, technical knowledge, distracting graphics, reluctance to download software, concerns about getting lost in websites, concerns about availability of instructor, concerns about not providing printed reference material, concerns about e-discussions lacking focus, misinterpretation of e-communication, concerns about no feedback, concerns about not participating enough in online discussions, and concerns about lack of variety as compared to traditional programs.

The second category is *personal issues* such as cost, accuracy concerns, concerns about nursing credits, lack of confidence, lack of patience, isolation, never occurred to respondent to participate, lack of self - motivation to complete, too frustrating, concerns that there are no sufficient advantages, concerns about relevancy of content, major not available, concerns that the State Board of Nursing might not recognize credits, and concerns about being unable to get a recommendation from other nurses enrolled in web-based graduate nursing programs.

The third category is *time constraints* such as no time to download, no time to learn how to use the web, takes too much time to bring up screen, no time for vacations and web-based program participation, too much time staring at a computer, and concerns that it takes too long to complete. The only two items with a mean below 1.49 that were each classified as “not a deterrent” were concerns about lack of hardware, and concerns about lack of e-mail access.

Objective Three

Objective three was to describe latent constructs within the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, as identified by Louisiana RNs who are members of LSNA, that emerge statistically following factor analysis of the dataset. Factor analysis is a statistical procedure based on correlation among a large set of measures (Johnson & Christensen, 2004). The goal of exploratory factor analysis “is to describe and summarize data by

grouping together variables that are correlated” (Mertler & Vannatta, 2005, p. 257). Principal axis extraction was used to reduce the number of independent variables or items (Mertler & Vannatta).

According to Hair et al. (2010), when conducting factor analysis, the general rule is to have at least 5 times as many observations as there are variables to analyze. Since there are 54 items on the survey tool, 281 respondents met the 5 to 1 criteria of observations to variables. Factor analysis calculations revealed a Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy value of .957. Values equal to or greater than 0.5 are desired (Hair et al., 2010) so sampling adequacy was determined to be acceptable for the 281 respondents. Missing cases were handled using replace with mean, so that all respondents could be retained for analysis. The Bartlett’s Test of Sphericity was significant. This test is a “statistical test for the overall significance of all correlations within a correlation matrix” (Hair et al., 2010, p. 92). Approximate Chi Square value for the dataset was calculated to be acceptable at 12052.304 ($df = 1431$, $p < .001$). Measures of sampling adequacy (MSA’s) exceeded the 0.5 threshold, making the model acceptable for factor analysis. Most of the communalities were all above .3 confirming a shared variance among items (Hair et al., 2010). Four items had communalities less than .3. The first item with a low communality was “no authority in my work environment to download software” showing a value of .169. The second item “not cost effective” showed a communality of .268. The third item “not enough quality courses” showed a communality of .251, and the fourth item “major not available” showed a communality of .254.

If an item has a communality of less than .40, it may either a) not be related to the other items, or b) suggest an additional factor that should be explored. The researcher should consider why that item was included in the data and decide whether to drop it or add similar items for future research. Note that these numbers are essentially correlation coefficients, and therefore the magnitude of the loadings can be understood similarly. (Costello & Osborne, 2005, p. 4)

The researcher ran the factor analysis both ways, once excluding the four items, and once including the four items in the analysis with very little difference seen in the percent of variance explained or in the

factor loadings. The researcher noted that two of these items were among the top ten items with highest mean scores. The item “no authority in my work environment to download software,” had a mean score of 2.67 the item “not enough quality courses” had a mean score of 2.43. The other two items had mean scores of 1.86 and 2.08. The researcher then made the decision to keep all of the items in the analysis. With these overall indicators, factor analysis was an appropriate test conducted with all 54 items.

Exploratory factor analysis was performed using principal axis extraction, promax oblique rotation, keeping the eigenvalues that are greater than one. An eigenvalue is “the column sum of squared loadings for a factor; also referred to as the latent root. It represents the amount of variance accounted for by a factor” (Hair et al., 2010, p. 92). When one expects that perceptual dimensions of all items are correlated, “the application of nonorthogonal oblique rotation is justified” (Hair et al., p. 139). “The ultimate goal of any rotation is to obtain some theoretically meaningful factors and, if possible, the simplest factor structure” (Hair et al., p. 115). Principal axis analysis extracted a total of eight factors that accounted for 68.647 percent of the variance. Figure one illustrates the Catell scree plot. Visual examination of the scree plot revealed a three factor solution. The researcher ran both a four and a five factor solution to investigate the loadings on these possible solutions. The researcher rejected the four factor solution when only two items loaded on the fourth factor. The researcher also rejected a five factor solution when only one item loaded on the fourth factor and only two items loaded on the fifth factor.

The three factor solution was accepted as meeting the criteria of simple structure, loadings above .40, low incidence of crossloadings, and no factors with fewer than three items (Costello & Osborne, 2005). It yielded a solution with the highest three eigenvalues that were 24.430, 4.122 and 2.562 respectively. The first factor accounted for 44.449 percent of the variance. Table 16 illustrates variance distributions and eigenvalues for the three factor solution.

Table 16

Eigenvalues and Total Variance Explained for the Three Factor Extraction for Items representing the Deterrents to Participation in Web-based Graduate Nursing Programs Survey.

Factor	Three Factor Solution Eigenvalues	Percent of Variance	Rotated Sums of Squared Loadings
1	24.003	44.449	21.530
2	3.755	6.954	18.769
3	2.178	4.033	16.733

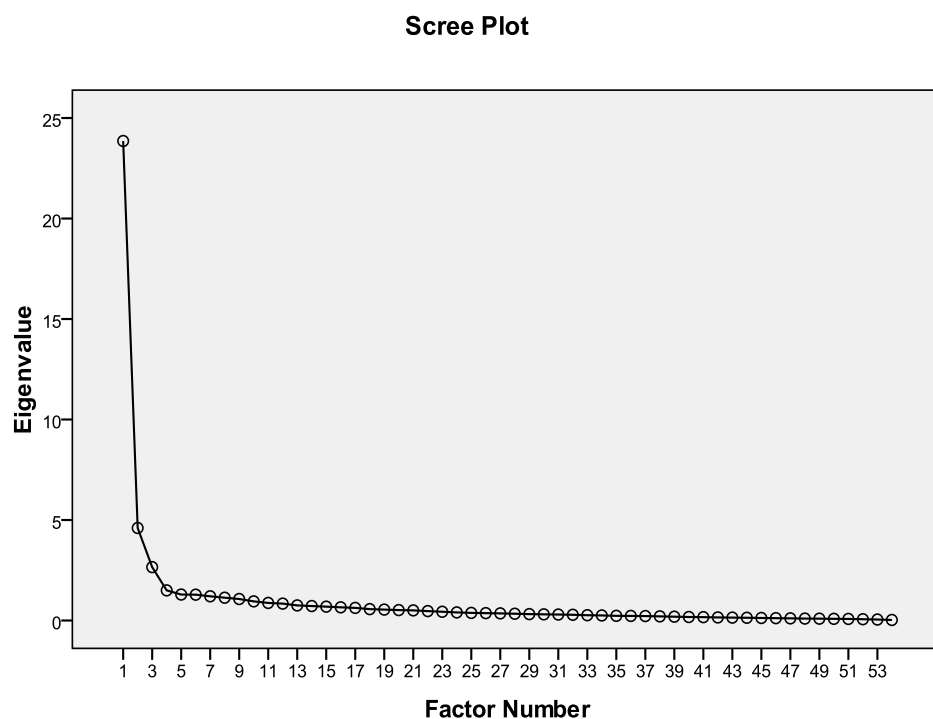


Figure 1

Scree Plot of a Three Factor Solution Principal Axis Extraction Factor Analysis of Deterrents to Participation in Web-Based Graduate Nursing Programs by Louisiana State Nurses' Association RNs

The second factor accounted for 6.954 percent of the variance and the third factor accounted for 4.033 percent of the variance. The total variance accounted for by the three factor solution was 55.436 percent. “No absolute threshold has been adopted for all applications” (Hair et al., 2010, p. 109). In the social sciences, “it is not uncommon to consider a solution that accounts for 60 percent of the total variance (and in some instances even less) as satisfactory” (Hair et al., p. 109).

According to Hair et al. (2010), one has to judge the significance of factor loadings. One can look at both practical significance as criteria and statistical significance. When looking at practical significance the assessment is as follows:

Because a factor loading is the correlation of the variable and the factor, the squared loading is the amount of the variable’s total variance accounted for by the factor. Thus, a .30 loading translates to approximately 10 percent explanation, and a .50 loading denotes that 25 percent of the variance is accounted for by the factor. The loading must exceed .70 for the factor to account for 50 percent of the variance of a variable. Thus the larger the absolute size of the factor loading, the more important the loading in interpreting the factor matrix. Using practical significance as the criteria, we can assess the loading as follows: factor loadings in the range of .30 to .40 are considered to meet the minimal level for interpretation of structure. Loadings .50 or greater are considered practically significant. Loadings exceeding 1.70 are considered indicative of well-defined structure and are the goal of any factor analysis. (p. 117)

When using the criteria for assessing statistical significance, one has to consider sample size and number of variables being studied. “In comparison with the prior rule of thumb, which denoted all loadings of .30 as having practical significance, this approach would consider loadings of .30 significant only for sample sizes of 350 or greater” (Hair et al., 2010, p. 117).

All of the factor loadings that were retained in this study were over .40. Negative loadings were deleted by the SPSS 17 program when the researcher specified retaining only those factor loadings whose absolute values were over .40. All negative loadings were less than .40. “A factor loading represents the correlation between an original variable and its factor” (Hair et al., 2010, p. 117). Hair et al. suggest that factor loadings of .30 to .40 (absolute values) are acceptable, but in order to be considered to have practical significance, the loadings should have an absolute value of greater than

.50. Sample size and the number of variables being studied are important. When a large sample size is used, or a large number of variables are being explored, a smaller factor loading is acceptable. When a small sample size is used, or a small number of variables are being explored, a larger factor loading is needed. Using Hair et al. guidelines for identifying significant factor loadings based on sample size, with a sample size of 281 in this study, factor loadings of .40 and above were acceptable.

Twenty two items loaded on the first factor. The factor was labeled *concerns about quality, time, and cost*. Loadings ranged from .406 to .853. The items that loaded on factor one had mean deterrent scores ranging from 1.86 to 2.63, indicating that three items were moderate deterrents and the other nineteen of the items were mild deterrents. Table 17 illustrates the item loading values and item means on the Deterrents to Participation in Web-based Graduate Nursing Program Survey.

Table 17

Item Loading Values on Factor One along with Item Means as identified by Louisiana State Nurses' Association RNs to the survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Factor I: Concerns about Quality, Time, and Cost

Deterrent	Loading Value ^a	Item mean ^b	Classification ^c
Accuracy of course content	.853	1.99	Mild
Can't get a recommendation from other nurses enrolled in a web-based graduate nursing program	.849	2.19	Mild
Relevancy of course content	.816	2.03	Mild
State Board of Nursing will not recognize credits	.804	2.12	Mild
Submitting financial information over the Internet	.793	2.25	Mild
Nursing credits may not be properly documented by the provider	.763	1.97	Mild
Takes too long to complete	.728	2.04	Mild
Not enough quality courses	.728	2.43	Mild

(Table Continued)

Submitting personal information over the Internet	.735	2.28	Mild
Others might not place as high a value on web programs	.690	2.63	Moderate
Unable to combine vacation time with fulfilling my graduate school responsibilities	.685	1.99	Mild
Submitting written comments over the Internet	.670	1.94	Mild
Might not provide printed reference materials	.669	2.05	Mild
Major not available	.611	2.08	Mild
Too many interruptions	.517	2.51	Moderate
Can't evaluate the quality of program before enrolling in it	.516	2.55	Moderate
Less variety than a traditional program	.475	2.15	Mild
Cost of printing too high	.472	2.00	Mild
Might not provide feedback	.467	2.22	Mild
Too much time staring at a computer	.465	2.23	Mild
Not cost effective	.450	1.86	Mild
Graphics and streaming video might be too distracting	.406	1.89	Mild

^aFactor one explains 44.449 percent of the variance

^b Mean values based on the 4 point Likert-type response scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree that these items are deterrents to participation in web-based graduate nursing programs.

^c Interpretive Scale: 1.0 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent, 3.5 - 4.0 = a strong deterrent

Seventeen items loaded on the second factor. The item loadings ranged from .433 to .940 and the factor was labeled *concerns about access to resources: technological and personal*. Two items “no computer hardware,” and “no email access” have mean scores that are under 1.46 indicating that they are not considered deterrents. Table 18 illustrates the item loading values and item means on the Deterrents to Participation in Web-based Graduate Nursing Program Survey for factor two.

Table 18

Item Loading Values on Factor Two along with Item Means as identified by Louisiana State Nurses' Association RNs to the survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Factor II: Concerns about Access to Resources: Technological and Personal

Deterrent	Loading Value ^a	Item Mean ^b	Classification ^c
No computer hardware	.940	1.45	Not a deterrent
No computer software	.930	1.54	Mild
No email access	.915	1.46	Not a deterrent
No technical knowledge	.913	2.48	Mild
No Internet access	.908	1.60	Mild
No skill to download the necessary computer software	.901	1.70	Mild
Reluctant to download software	.762	1.79	Mild
No time to learn how to use the web	.722	1.74	Mild
No patience to learn how to use the web	.722	1.61	Mild
Concern about getting lost in web-sites	.661	1.83	Mild
No confidence	.644	1.72	Mild
Cost of connecting to the Internet is too high	.582	1.67	Mild
No access to technology support	.563	1.97	Mild
Computer may take too long to bring up screen	.558	1.91	Mild
Websites may change appearance	.538	1.74	Mild
Cost of purchasing computer hardware too high	.522	1.93	Mild
Downloading course materials will take too long	.433	1.90	Mild

^a Factor 2 explains 6.954 percent of the variance

^b Mean values based on the 4 point Likert-type response scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree that these items are deterrents to participation in web-based graduate nursing programs.

^c Interpretive Scale: 1.0 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent, 3.5 - 4.0 = a strong deterrent

Factor three, *concerns about electronically mediated communication* had nine items with loadings over .40 ranging from .403 to 1.076. The three items with the highest loadings had mean deterrent scores between 2.50 and 3.49 indicating that these were classified as “moderate deterrents.” The other five items had mean scores from 2.10 to 2.48, indicating that these items were classified as “mild deterrents.” Table 19 illustrates the item loading values and item means on the Deterrents to Participation in Web-based Graduate Nursing Program Survey for factor three.

Table 19

Item Loading Values on Factor Three along with Item Means as identified by Louisiana State Nurses' Association RNs to the survey Deterrents to Participation in Web-Based Graduate Nursing Programs

Factor III: Concerns about Electronic Mediated Communication

Deterrent	Loading Value ^a	Item mean ^b	Classification ^c
Prefer face to face interaction with the instructor	1.076	2.63	Moderate
Prefer face to face interaction with my peers	1.046	2.58	Moderate
Prefer traditional classroom instruction	1.002	2.51	Moderate
Prefer hearing lectures in person	.960	2.48	Mild
Prefer using printed materials	.652	2.43	Mild
Might feel isolated	.528	2.36	Mild
No availability of instructor	.428	2.41	Mild
Concerned I will not participate enough in online Discussions	.418	2.34	Mild
E - Discussions could lack focus	.403	2.10	Mild

^a Factor 3 explains 4.033 percent of the variance

^b Mean values based on the 4 point Likert-type response scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree that these items are deterrents to participation in web-based graduate nursing programs.

^c Interpretive scale: 1.0 - 1.49 = not a deterrent, 1.50 - 2.49 = a mild deterrent, 2.50 - 3.49 = a moderate deterrent, 3.5 - 4.0 = a strong deterrent

Five items did not load on any factor. They were “no authority in my work environment to download software for a web-based graduate nursing program,” “misinterpretation of e-communication,” “no self motivation to complete,” “too frustrating,” and “never occurred to me to participate in a web-based graduate nursing program.” Only two items had cross loadings. The first was “e-discussions could lack focus,” which loaded on both factor one with a loading of .401, and on factor three with a loading of .403. The researcher allowed this item to be a part of factor three because it fit better conceptually into the category labeled *concerns about electronic mediated communication*, than the category labeled *concerns about quality, cost and time*. The second item that had cross loadings was “No availability of instructor” which loaded on both factor one with a loading value of .507, and on factor three with a loading value of .428. The researcher allowed this item to only load on factor three because it fit better conceptually under the category “concerns about electronic mediated communication,” than it would have fit under the first factor category labeled “concerns about quality, time, and cost.”

A reliability analysis was performed on the data. Cronbach’s alpha “tells you the degree to which the items are interrelated” (Johnson & Christensen, 2004, p. 138). Generally speaking, the Cronbach’s alpha should be a minimum of “greater than or equal to .70 for research purposes and somewhat greater than that value (e.g., greater than or equal to .90) for clinical testing purposes (i.e., for assessing single individuals)” (Johnson & Christensen, p. 138). Generally, the stronger the correlations among the items, the larger the Cronbach’s alpha. It is measuring internal consistency (Johnson & Christensen). However, the researcher must be careful when interpreting this coefficient because the Cronbach’s alpha depends on the number of items in your test. “Because increasing the number of items, even with the same degree of intercorrelation, will increase the reliability value, researchers must place more stringent requirements for scales with large numbers of items” (Hair et al., 2010, p.

125). The Cronbach's alpha for the Deterrents to Participation in Web-based Graduate Nursing Programs Tool of 54 items for this study of was .974.

Objective Four

Objective four was to determine if differences in perceived deterrents to participation as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool, exist among the following demographic characteristics: age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income. The statistical test used to measure the differences was selected based on its appropriateness for the level of measurement of each variable. Statistical tests used for this objective included either a simple *t* test for comparisons, or a one way ANOVA depending on if the dependent variable was quantitative and the independent variable had more than two categories (Mertler & Vannatta, 2005). Levene's Test for Homogeneity of Variances was used to ensure homogeneity of groups. The Welch Test was used if homogeneity could not be assumed. The variables gender, ethnicity, computer literacy, parents' educational level, and marital status were each measured on a dichotomous scale and the *t*-test was used to measure the difference in the overall scale mean value of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument and the groups of each variable. The variables of age, years of being an RN, current educational status, number of children, employment status, and household income were all independent variables with more than two levels of categories, so a one way analysis of variance (ANOVA) was used to determine if significant differences existed in the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument and the demographic variable. The Tukey post hoc tests were used if a significant difference was found, in an effort to discover which levels of each group were significantly different.

Prior to comparison, data were examined for normality, outliers, and distribution using Statistical Package for the Social Sciences (SPSS) version 17.0. Alpha was controlled for in all tests at the .05 level of significance. The Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument overall mean scale score was 2.0624 ($n = 280$). Even though there were 281 respondents to the survey, one respondent only answered the demographic section, thus making $n = 280$ for the overall scale mean.

Age

Differences between levels of the variable “age” were determined through calculation and interpretation of the Welch test which is a robust test of equality of means, following failure of the Levene’s Test for Equality of Variance to demonstrate homogeneity of variance between the different age groups $F = 2.257$ (5, 273), $p = .049$. The results of the Welch test were not significant at the .05 two-tailed level, 2.062 (5, 44.036), $p = .08$. Because there was no overall significance between levels of the variable age when compared to the overall mean score of deterrents to participation in web-based graduate nursing programs survey tool, post hoc tests were not needed. Although not significant, the mean scores of the 36 - 45 year old group ($n = 63$, $M = 1.99$, $SD = .564$) and the 46 - 55 years old group ($n = 96$, $M = 1.98$, $SD = .542$) were slightly lower than the younger groups of 18 - 25 years ($n = 7$, $M = 2.52$, $SD = .732$) and 26-35 years ($n = 31$, $M = 2.03$, $SD = .372$) and the older group of 56 - 65 years ($n = 65$, $M = 2.11$, $SD = .551$), indicating less identification of deterrents to participation in web-based graduate nursing programs. The highest mean was found in the youngest group labeled 18 - 25 years ($n = 7$, $M = 2.52$, $SD = .732$) indicating a higher identification of deterrents to participation in web-based graduate nursing programs. These differences were not statistically significant.

Ethnicity

Comparisons for differences in overall deterrent scale mean and the variable ethnicity following collapse and recoding of the levels of ethnic background into the dichotomy “Non-Caucasian” and “Caucasian.” This maneuver was performed in an effort to reduce the danger of achieving spurious results after statistical analysis revealed that the other ethnic variable categories “Asian” had one subject, “Hispanic” had three subjects, and “Other” had five subjects.

The sample was recoded to include “Caucasians” as indicated per survey response, and “Non-Caucasian” which included the combined levels of “African American,” “Asian,” “Hispanic,” and “other” as indicated by the subjects’ responses. Mean scores of non-Caucasians ($n = 40$, $M = 2.11$, $SD = .654$) were slightly higher than the mean scores of Caucasians ($n = 238$, $M = 2.05$, $SD = .534$). Following recoding procedures, an independent t test was performed to determine the existence of differences between “Caucasians” and “Non-Caucasians.” Levene’s statistic was noted to exceed the .05 level, $F = 2.377$ (1, 276), $p = .124$), resulting in the assumption of homogeneity of variance between the two ethnic groups. Independent t test analysis for equal variances assumed revealed no statistically significant differences in deterrents to participation in web-based graduate nursing programs between Caucasians and Non-Caucasians, $t = .671$ (276), $p = .503$.

Gender

A comparison of the gender of respondents and the overall scale mean score of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument was examined. After a determination of equal variances was established through Levene’s statistic, $F = 1.060$ (1, 274), $p = .304$; an independent t -test analysis revealed no significant difference at the two tailed .05 level in overall deterrent scale mean score between male and female respondents, $t = .168$ (274), $p = .867$. Mean deterrent scores for men ($n = 15$, $M=2.07$, $SD = .460$) were slightly higher than those for women ($n = 261$, $M = 2.05$, $SD = .553$) but not statistically significant.

Computer Literacy

Comparisons for differences in deterrents to participation in web-based graduate nursing programs were calculated for the variable “computer literacy” following collapse and recoding of the levels of computer literacy into the dichotomy of “computer literate” and “not computer literate,” which included the combined levels of “somewhat computer literate,” and “very computer literate,” as indicated by the subjects’ responses. Mean scores of those respondents who identified themselves as “not computer literate,” were higher ($n = 66$, $M = 2.46$, $SD = .517$) indicating identification of more deterrents to participation in web-based graduate nursing programs than the mean scores of those respondents who identified themselves as “computer literate,” ($n = 211$, $M = 1.93$, $SD = .500$). Levene’s Test for Equality of Variances exceeded the .05 level, resulting in a failure to reject the homogeneity of variance hypothesis of no difference between the two computer literacy groups, $F = .966$ (1, 275), $p = .327$. An independent t test analysis with equal variances assumed, resulted in the determination of a highly statistically significant difference in overall deterrent mean scores by perceived computer literacy at the .05 two tailed level of significance, $t = 7.53$ (275), $p < .001$. Respondents who identified themselves as “not computer literate” had a statistically significant higher mean score on the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey Instrument, which indicated identification of more deterrents to participation in web-based graduate nursing programs, than respondents who identified themselves as “computer literate.” Table 20 illustrates the statistically significant differences between those respondents who identified themselves as “computer literate” and those respondents who identified themselves as “not computer literate” on the overall scale mean of the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey Instrument as analyzed by independent t test.

Table 20

Results of Independent *t* test illustrating Differences between RN members of the Louisiana State Nurses' Association (LSNA) who considered themselves Computer Literate and those who considered themselves Not Computer Literate on the Overall Scale Mean of the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey.

Computer literacy level	<i>n</i>	<i>M</i> ^a	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Computer literate	211	1.93	.500	7.53	275	< .001
Not computer literate	66	2.46	.517			

^aMean values based on the 4 point Likert - type response scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

Years of Being a Registered Nurse

Levene's Test of Homogeneity of Variance was noted to be $F = 3.062$ (4, 275), $p = .017$ for levels of the variable "years of being a registered nurse." This significant difference at the .05 alpha level, revealed unequal variance among levels of this variable. Welch statistic analysis was run and the Welch test was noted to be not significant for the levels of the variable "years of being a registered nurse," $F = 1.06$ (4, 81.53), $p = .381$ and overall mean score of the deterrents to participation in web-based graduate nursing programs. The lowest deterrent mean score was in the group of respondents who had been RNs for 16 - 20 years ($n = 33$, $M = 1.89$, $SD = .564$) indicating that this group identified less deterrents to participation in web-based graduate nursing programs than the other groups of RNs. The highest deterrent mean score was in the group of nurses who had been RNs for 1 - 5 years ($n = 42$, $M = 2.12$, $SD = .402$) indicating that this group identified more deterrents to participation in web-based graduate nursing programs than the groups of nurses who had been RNs for longer periods of time. There were very little differences in deterrent mean scores of the respondents who had been RNs for 6 - 10 years ($n = 25$, $M = 2.09$, $SD = .439$) and those who had been RNs for 11 - 15 years ($n = 32$, $M = 2.05$, $SD = .525$) or those who had been RNs for over 20 years ($n = 148$, $M = 2.07$, $SD = .605$). The largest group of respondents ($n = 148$) had been RNs for over 20 years.

Current Educational Status

Differences in deterrent scores between the different levels of current educational status of respondents were examined following collapse and recoding of the levels of the educational groups originally on the survey tool. The original thirteen groups: (a) BSN, (b) ASN, (c) Diploma, (d) Master's NP, (e) Master's CNS, (f) Master's Faculty, (g) PhD faculty, (h) DNS faculty, (i) DNP faculty, (j) Master's graduate student, (k) PhD graduate student, (l) DNS graduate student, (m) DNP graduate student were collapsed into six groups: (a) BSN, (b) ASN, (c) Diploma, (d) Master's degree, which included all respondents with a master's degree that were originally in the NP, CNS, and Faculty groups; (e) Doctoral degree, which included all respondents with a doctorate that were originally separated into PhD, DNS, and DNP faculty groups; and (f) Graduate students, which included all respondents who were originally separated into Master's, PhD, DNS, and DNP graduate student groups. The highest deterrent mean scores were reported by diploma RNs ($n = 10$, $M = 2.62$, $SD = .622$). The lowest deterrent mean scores were reported by RNs who were graduate students ($n = 38$, $M = 1.94$, $SD = .584$).

The Levene's Test of Homogeneity of Variance resulted in the determination of equal variances among the various reported educational levels, $F = 1.666$ (5, 265), $p = .143$. A one way analysis of variance comparison was run and revealed a significant difference between the respondents' current educational status and the overall mean score from the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, $F = 3.92$ (5, 265), $p = .002$. A Tukey's post hoc analysis indicated significant differences at the .05 alpha level, between the following RN educational status levels: (a) Diploma RNs and BSN RNs (mean diff. = .535, $p = .045$); (b) Master degree RNs and Diploma RNs (mean diff. = .639, $p = .01$), (c) RNs with Doctorates and Diploma RNs (mean diff. = .609, $p = .01$), and (d) RNs who are graduate students and Diploma RNs (mean diff. = .688, $p = .005$).

Table 21 illustrates the Analysis of Variance.

Table 21

Oneway Analysis of Variance illustrating Differences in the Current Educational Status of the Louisiana State Nurses' Association RN Respondents and the Overall Scale Mean from the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey.

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i> ^a
Between Groups	5	5.615	1.1	3.924	.002
Within Groups	265	75.838	.286		
Total	270	81.453			

Note. Significant differences between groups by Tukey's post hoc analysis: Diploma RNs and BSN RNs (mean diff. = .535), Master degree RNs and Diploma RNs (mean diff. = .639), RNs with Doctorates and Diploma RNs (mean diff. = .609), and RNs who are graduate students and Diploma RNs (mean diff. = .688).

^a .05 alpha level for the 2 tailed Test of Significance.

Marital Status

The original four levels of marital status as it appeared on the survey tool, "married," "widowed," "divorced," and "single" were collapsed and recoded into a dichotomy of "married" and "not married." Mean deterrent scores were similar among married respondents ($n = 191$, $M = 2.03$, $SD = .533$) and unmarried respondents ($n = 86$, $M = 2.13$, $SD = .590$). Levine's Statistic was noted to exceed the .05 level, $F = .261$ (275, 149), $p = .610$, resulting in the assumption of homogeneity of variance between the two marital status groups. Independent t test analysis for equal variances assumed, revealed no statistically significant differences in marital status and overall scale mean on the deterrents to participation in web-based graduate nursing programs, $t = -1.41$ (275), $p = .158$.

Number of Children

The Levine's Test of Homogeneity of Variances was noted to be larger than the .05 alpha level resulting in the assumption of homogeneity of variances between the levels of the category "number of children." A one way analysis of variance (ANOVA) was run and revealed no significant difference between numbers of children of respondents and the overall scale mean of the deterrents to participation in web-based graduate nursing programs survey tool, $F = .657$ (4, 273), $p = .622$.

Although not statistically significant, respondents who had three to four children, ($n = 62$, $M = 1.98$, $SD = .574$), and respondents who had more than five children, ($n = 3$, $M = 1.97$, $SD = .724$) had the lowest mean deterrent scores. This indicates that these groups identified fewer deterrents to participation in web-based graduate nursing programs. The highest mean deterrent score was seen in the group with four to five children ($n = 6$, $M = 2.32$, $SD = .887$), indicating that this group of respondents identified more deterrents to participation in web-based graduate nursing programs. Most of the respondents had one to two children ($n = 146$, $M = 2.07$, $SD = .530$).

Employment Status

The highest mean deterrent score was from RNs who were not practicing nursing ($n = 14$, $M = 2.50$, $SD = .408$), indicating that this group of RNs perceived more deterrents to participation in web-based graduate nursing programs than the RNs who were practicing. The lowest deterrent mean score was from RNs who worked in the Obstetrics and Gynecology area ($n = 13$, $M = 1.83$, $SD = .611$), indicating that this group of RNs perceived less deterrents to participation in web-based graduate nursing programs. Most of the respondents chose “other” when asked what area they were practicing nursing. The researcher did not allow for identification of what other meant. The researcher also did not place a choice for RNs to select employment as an educator, which might explain why so many chose “other” since there were many master’s prepared nurses and doctoral prepared nurses who participated in the study. The Levene’s Test of Homogeneity of Variances was noted to be larger than the .05 alpha level, $F = 1.38$ (9, 270), $p = .194$, resulting in the assumption of homogeneity of variances between levels of employment status groups. A one way analysis of variance (ANOVA) was run and revealed a significant difference between employment status of respondents and the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, $F = 2.95$ (9, 270), $p = .002$.

Post hoc Tukey's tests were run which revealed a significant difference in overall scale means of the Deterrents to Participation in Web-based Graduate Nursing Programs between RNs not practicing and RNs who work in obstetrics and gynecology areas (mean diff. = $-.675$, $p = .039$). There was also a significant difference in overall scale means of the Deterrents to Participation in Web-based Graduate Nursing Programs between RNs who were not practicing and RNs who worked in critical care areas (mean diff = $-.611$, $p = .021$). There was also a significant difference in the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs between RNs who were not practicing, and RNs who chose "other" as the area where they worked (mean diff = $-.520$, $p = .023$). Table 22 illustrates the analysis of variance.

Table 22

One way Analysis of Variance illustrating Differences in the Current Employment Status of the Louisiana State Nurses' Association RN Respondents and the Overall Scale Mean from the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey.

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i> ^a
Between Groups	9	7.629	.848	2.955	.002
Within Groups	270	77.447	.287		
Total	279	85.077			

Note. Significant differences in overall scale mean between groups by Tukey post hoc analysis: RNs not practicing and RNs working in obstetrics and gynecology (mean diff. = $-.675$), RNs not practicing and RNs working in critical care (mean diff = $-.611$), and RNs not practicing and RNs who chose "other" when asked about area of employment status (mean diff = $-.520$).

^a.05 alpha level for the 2 tailed Test of Significance

Parents' Educational Level

The educational status of respondents' parents was examined. Respondents were asked to identify the educational status of their parents by choosing one of six categories for both the mothers' educational status and the fathers' educational status: "did not complete high school," "completed high

school or GED,” “had some college but no degree,” “earned an associate’s degree,” “earned a bachelor’s degree,” and “earned a graduate degree.” These categories were collapsed and recoded into the dichotomy of “high school or none,” and “college or higher degree,” which included the other already mentioned categories. When examining the mothers’ educational status, the Levene’s Test for Equality of Variances was noted to be larger than the .05 alpha ($F = .909 (275), p = .341$) resulting in the assumption of homogeneity of variances. An independent t test was performed to determine the existence of differences between the dichotomous two groups on the overall mean score of the Deterrents to Participation in Web-based Graduate Nursing Programs Instrument. Independent t test analysis for equal variances assumed, revealed no statistically significant differences in overall scale mean between the two groups for the mothers’ educational status, $t = -.636 (275), p = .525$. The mean deterrent scores were very similar between the two groups named “high school or none” ($n = 133, M = 2.03, SD = .574$) and “college or higher degree” ($n = 144, M = 2.08, SD = .536$).

The fathers’ educational status was examined. The Levene’s Test for Equality of Variances was noted to be larger than the .05 alpha ($F = 2.47(277), p = .117$) resulting in the assumption of homogeneity of variances. An independent t test was performed to determine the existence of differences between the dichotomous two groups on the overall mean score of the Deterrents to Participation in Web-based Graduate Nursing Programs Instrument. Independent t test analysis for equal variances assumed, revealed no statistically significant differences in overall scale mean between the two groups for the fathers’ educational status, $t = .287 (277), p = .774$.

Household Income

Differences in overall scale mean score and five levels of household income of respondents were examined. The lowest deterrent mean scores were reported by those indicating incomes as “over 100,000 dollars per year” ($n = 129, M = 1.95, SD = .528$). Respondents in this group indicated less deterrents to participation in web-based graduate nursing programs than any other group. The highest

deterrent mean scores were reported by those indicating incomes of “20,000 to 50,000 dollars” per year ($n = 16$, $M = 2.51$, $SD = .473$). A Levine’s Test of Homogeneity of Variance was larger than the .05 alpha $F = 1.910$ (4, 263), $p = .109$, resulting in the assumption of homogeneity of variances. A one way analysis of variance (ANOVA) was run and a highly significant difference was found between the overall scale mean of deterrents to participation in web-based graduate nursing programs and household income $F = 5.152$ (4, 263), $p = .001$. Tukey Post hoc analysis following the one way ANOVA indicated significant differences between the following respondent groups: Respondents who indicated that their household income was “76,000 - 100,000 dollars per year” were significantly different in overall scale mean deterrents than those who indicated that their household income was “20,000 - 50,000 dollars per year” (mean diff. = .45581, $p = .02$). Respondents who indicated that their household income was “over 100,000 dollars per year” were highly significantly different than those who indicated that their household income was “20,000 - 50,000 dollars per year” (mean diff. = .55609, $p = .001$) and significantly different than those who indicated that their household income was “51,000 to 75,000 dollars per year” (mean diff. = -.24908, $p = .034$). Table 23 illustrates the one way ANOVA showing the significant differences in the household income of Louisiana State Nurses’ Association RN respondents and the overall scale mean from the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool.

Table 23

One way Analysis of Variance illustrating Differences in the Total Annual Household Income of the Louisiana State Nurses’ Association RN Respondents and the Overall Scale Mean from the Deterrents to Participation in Web-Based Graduate Nursing Programs Survey.

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i> ^a
Between Groups	4	5.855	1.464	5.152	.001
Within Groups	263	74.722	.284		

(Table Continued)

Total	267	80.577
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Note. Significant differences in overall scale mean and salary levels of respondents by Tukey's post hoc analysis: "20,000 - 50,000" and "76,000 - 100,000" (mean diff. = .45581) and 20,000 - 50,000 and "over 100,000" (mean diff. = .55609) 51,000-75,000 and over 100,000 (mean diff. = -.24908).

^a .05 alpha level for the 2 tailed Test of Significance.

Objective Five

Objective five was to determine if a model exists which explains a significant portion of the variance of deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool, and the demographic characteristics of age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parents' educational level, and household income. This objective was accomplished by using multiple regression analysis with the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool as the dependent variable. Independent variables that were used in the regression were computer literacy, current educational status, and household income. Data analysis included Pearson's product moment correlations and stepwise multiple regression analysis where the probability of F to enter the equation was set at .05, and the probability of F to be removed from the model was set at .10. Multiple regression is a statistical procedure that involves predicting criterion values from examining the relationships between the predictor values (Hinkle et al., 2003).

Multiple regression identifies the best combination of predictors (independent variables) of the dependent variable. Consequently, it is used when there are several independent quantitative variables and one dependent quantitative variable. To produce the best combination of predictors of the dependent variable, a sequential multiple regression selects independent variables, one at a time, by their ability to account for the most variance in the dependent variable. As a variable is selected and entered into the group of predictors, the relationship between the group of predictors and the dependent variable is reassessed. When no more variables are left that explain a significant amount of variance in the dependent variable, then the regression model is complete. (Mertler & Vannatta, 2005, p. 14)

Collinearity tests were done to assess degree of redundancy among the independent variables. Variance inflation factor values (VIF) and tolerance levels (TOL) were computed. These two measurements are reciprocals of each other. Smaller tolerance levels, especially levels less than .01 indicate high collinearity (Hinkle et al., 2003). SPSS eliminates predictor variables in a model that have a tolerance of less than .0001. A researcher can choose to set his/her own criteria for tolerance higher, such as eliminating “any variable with a tolerance level less than .01” (Brace et al., 2003, p. 221). The researcher can also examine the VIF which is the reciprocal of tolerance. A large VIF value “indicates a strong relationship between predictor variables” (Brace et al., 2003, p. 221). All tolerance values in this study were greater than 0.1 and VIF values were less than 10, so multicollinearity was not a problem (Mertler & Vannatta, 2005).

Because the variables of age, ethnicity, gender, years of being an RN, marital status, number of children, and parent’s educational level were found not statistically significant ($p > .05$), when compared to the overall scale mean of identified deterrents to participation in web-based graduate nursing programs, they were not selected as independent variables in the multiple regression analysis by the researcher. Because multiple regression is an extension of correlation (Brace et al., 2003) the researcher first ran correlations among the significant variables ($p < .05$). Four variables in earlier comparisons were significant ($p < .05$) when these variables were compared to the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument. The significant variables included (a) computer literacy ($p < .001$), (b) current educational status ($p = .002$), (c) annual household income ($p = .001$), and (d) employment status ($p = .002$). The researcher made the decision not to use the variable “employment status” in the correlations and multiple regressions because forty one percent of the respondents chose “other” and the researcher did not provide respondents the opportunity to identify what “other” meant. This was considered to be a poorly worded

item and was removed. The researcher could speculate that the respondents who chose “other” might have been faculty members since the choice of “educator” was not a choice on the survey; but because of this uncertainty, the variable was not used. Further support for not using the “employment status” variable was that the researcher also allowed respondents to choose “not practicing” without allowing them to explain whether this meant they were retired, disabled, sick leave, pregnant, etc. This was another reason that supported the researcher’s decision not to use this poorly worded variable in the regression.

There was one outlier that was discovered with data inspection. One respondent’s answers to the survey reflected that he/she was 18-25 years old with over 20 years experience as a nurse. Because this was nonsensical, the respondent’s data was not included in the regression analysis.

The variables “computer literate” and “not computer literate” are categorical and dichotomous in nature. The variable “current educational status” was ordinal. Dummy coding was used with BSN dummy coded as “1” and all other categories of ASN, diploma, masters, doctorate, and graduate students coded as “0.” This dummy coding continued in this same fashion until each educational status choice was recoded as “1” with all others “0.” The variable “total household annual income” was ordinal. Dummy coding of “1” and “0” was used with the significant second category of this variable “20,000 to 50,000 dollars per year.”

For descriptive purposes, two way correlations were shown between factors used as independent variables in the regression (computer literacy, current educational status, total household annual income) and the dependent variable which was the overall scale mean of the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument. Spearman’s Rho non parametric correlation was used to indicate a relationship with the nominal categorical variable computer literacy and overall scale mean. Spearman’s Rho was also used to show the correlation with the ordinal variable of current educational status and the overall scale mean of deterrents, and it was used to show

the correlations with the ordinal variable total household annual income and the overall scale mean of deterrents. For interpretation of correlation coefficients, Davis' (1971) rules for describing the strength of the measures of association was used:

<u>Coefficient</u>	<u>Description</u>
.00 - .09	negligible association
.10 - .29	low association
.30 - .49	moderate association
.50 - .69	substantial association
.70 and higher	very strong association
1.00	perfect association

Table 24 illustrates the Spearman's Rho correlations.

Table 24
Relationship between Selected Variables and Overall Scale Mean of Deterrents to Participation in Web-Based Graduate Nursing Programs.

Variable	r^a	p^b
Current educational status	-.128	.035
Total household income	-.257	<.001
Computer literacy	-.453	<.001

^a Spearman's Rho Correlation

^b Two Tailed Alpha .05

Stepwise multiple regression was conducted to determine which independent variables (computer literacy, total household annual income, current educational status) were the predictors of deterrents to participation in web-based graduate nursing programs by Louisiana State Nurses' Association RNs. Data screening led to the elimination of one case. Regression results indicated the model with the best overall fit to be the third model. This model illustrated three

significant predictors of deterrents to participation in web-based graduate nursing programs.

They were (a) not being computer literate, (b) total annual household income of 20,000 to 50,000 dollars and (c) current educational status of being a Diploma RN graduate; $R^2 = .218$, $R^2_{adj} = .209$, $R(1, 275) = .012$, $p = .044$. This model accounted for 21% of variance in deterrents to participation in web-based graduate nursing programs. A summary of the regression model is presented in Table 25.

Figure two illustrates the histogram of standardized residuals for the dependent variable of the overall scale mean and indicates a normal distribution. Analysis of outliers was also done by examining influential observations. Influential data points are cases which have influence on the estimated regression line. Cook's D is a measure of the influence of an observation on all the predicted values (Hair et al., 2010). No Cook's D values were greater than the maximum parameter of 1.0.

Multivariate normality and homoscedasticity were examined through the generation of a residuals P-P plot (see Figure 3). The P-P plot illustrates that the distribution meets the assumption of normality and homoscedasticity. Collinearity was not a problem as no tolerance statistic was close to zero. The three tolerance statistics ranged from .999 to 1. All variance inflation factors (VIF) for a given predictor were equal to one, indicating that there exists a strong linear association between it and all remaining predictors. Collinearity is usually not a problem as long as tolerance values are greater than 0.1 and variance inflation factors are less than 10 (Hair et al., 2010).

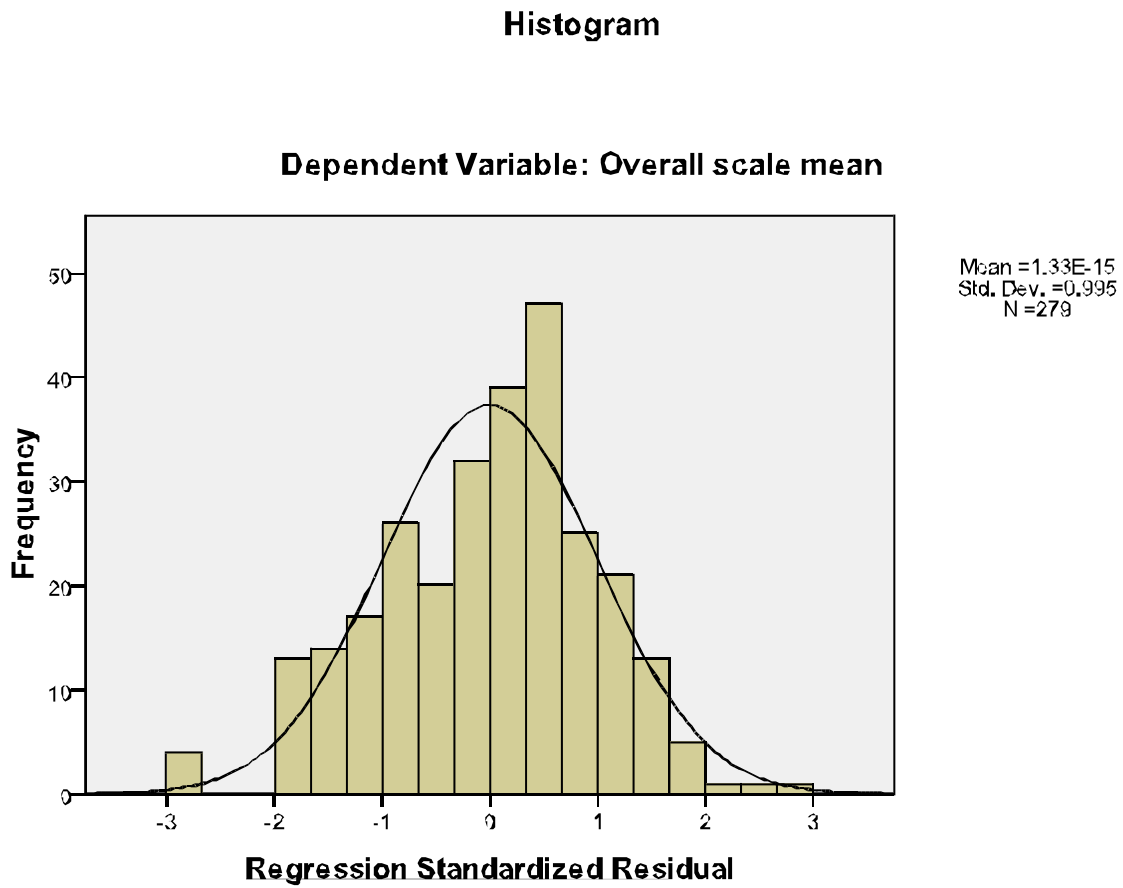


Figure 2

Histogram Depicting Standardized Residuals for the Dependent Variable Overall Scale Mean on the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool

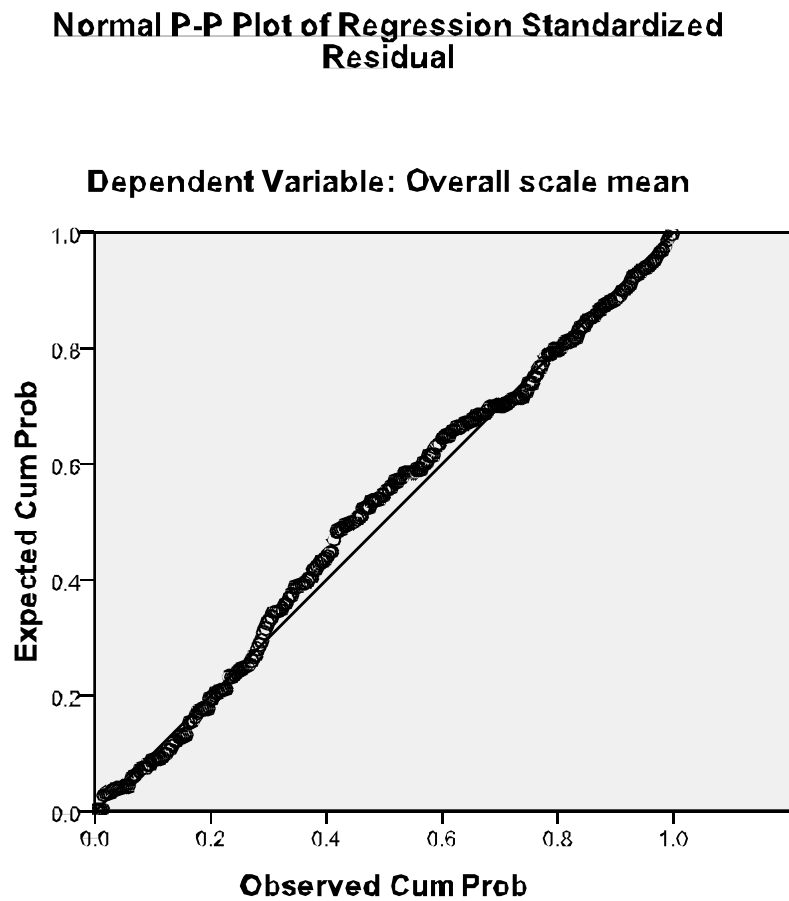


Figure 3
P-P Plot of Regression Standardized Residuals for the Dependent Variable Overall Scale Mean on the
Determinants to Participation in Web-based Graduate Nursing Programs Survey Tool

Collinearity should be addressed by the researcher prior to the execution of the regression analysis. The simplest method for diagnosing multicollinearity is to examine the correlation matrix for the predictor variables, looking for moderate to high intercorrelations. However, it is preferable to use one of two statistical methods to assess multicollinearity. First, tolerance statistics can be obtained for each IV. Tolerance is a measure of collinearity among IVs where possible values range from 0 to 1. A value for tolerance close to zero is an indication of multicollinearity. Typically, a value of 0.1 serves as the cutoff point - if the tolerance value for a given IV is less than 0.1, multicollinearity is a distance problem. A second method is to examine values for the variance inflation factor for each predictor. The variance inflation factor (VIF) for a given predictor indicates whether there exist a strong linear association between it and all remaining predictors. Values of VIF that are greater than 10 are generally cause for concern. (Mertler & Vannatta, 2005, p. 169)

The variable which entered the regression model first was being “not computer literate”.

Considered alone, this variable explained 18% of the variance in deterrents to participation in web-based graduate nursing programs by Louisiana State Nurses Association (LSNA) RNs. Two additional variables explained an additional 3% of the variance in the deterrents to participation in web-based graduate nursing programs model. These variables were the following: “current educational status of diploma RN graduate” and “total household income of 20,000 to 50,000 dollars per year”. These three variables explained a total of 21% of the variance in deterrents to participation in web-based graduate nursing programs by LSNA RNs. The multiple regression equation is: The regression equation is $y = 2.427 + (-.530) (X_1) + (.364) (X_2) + (.332) (X_3)$. The more computer literate the RNs who belonged to the Louisiana State Nurses’ Association perceived themselves to be; the more the regression number went down. The annual household income between 20,000 and 50,000 dollars and an educational status of diploma RN graduate has an effect on where X crosses Y. The nature of the variables that entered the model were such that individuals that identified themselves as “not computer literate,” tended to have higher levels of deterrents to participation in web-based graduate nursing programs (indicated by higher deterrent mean scores). Individuals that reported having “an annual total household income of 20,000 to 50,000 dollars” tended to have higher levels of deterrents to participation in web-based graduate nursing programs (indicated by higher deterrent mean scores). In

addition, study participants who identified themselves as having the current educational status of “Diploma RN” tended to have higher levels of deterrents to participation in web-based graduate nursing programs (indicated by higher deterrent mean scores). Table 25 illustrates the multiple regression analysis.

Table 25
Multiple Regression Analysis of Louisiana State Nurses’ Association RNs Perception of Deterrents to Participation in Web-Based Graduate Nursing Programs.

ANOVA				
Model	<i>df</i>	<i>MS</i>	<i>F</i> -ratio	<i>p</i>
1				
Regression	1	15.001	62.664	<.001 ^a
Residual	278	.239		
Total	278			
2				
Regression	2	8.372	35.796	<.001 ^b
Residual	276	.234		
Total	278			
3				
Regression	3	5.899	25.502	<.001 ^c
Residual	275	.231		
Total	278			

^a Predictors: (constant), not computer literate

^b Predictors: (constant), not computer literate, 20,000 to 50,000 dollars a year household income

^c Predictors: (constant), not computer literate, 20,000 to 50,000 dollars a year household income, Diploma RN graduate

Dependent variable: Overall scale mean Deterrents to Participation in Web-based Graduate Nursing Programs
(Table Continued)

Variables in the Equation

Model	<i>R</i>	<i>R</i> ²	<i>adj R</i> ²	Change Statistics		
				<i>R</i> ² change	<i>F</i> change	Sig <i>F</i>
1	.430	.184	.182	.184	62.664	<.001 ^a
2	.454	.206	.200	.021	7.466	.007 ^b
3	.467	.218	.209	.012	4.107	.044 ^c

^a Predictors: (constant), not computer literate

^b Predictors: (constant), not computer literate, 20,000 to 50,000 dollars a year household income

^c Predictors: (constant), not computer literate, 20,000 to 50,000 dollars a year household income, Diploma RN graduate

Dependent variable: Overall scale mean Deterrents to Participation in Web-based Graduate Nursing Programs

Variables not in the Equation

Variables	Beta	<i>t</i>	Sig <i>t</i>	Partial Correlation	Tolerance	VIF
BSN graduate	.041	.755	.451	.046	.977	1.024
ASN graduate	.089	1.652	.100	.099	.978	1.023
Master's degree	-.042	-.778	.437	-.047	.989	1.011
Doctoral degree	-.046	-.849	.397	-.051	.987	1.013
Less than 20,000	-.045	-.819	.414	-.049	.963	1.038
51,000 -75,000	.088	1.620	.106	.097	.958	1.044
76,000 - 100,000	.026	.478	.633	.029	.980	1.020

Predictors in the Model: (Constant), not computer literate, 20,000-50,000 dollar household annual income, diploma RN graduate

Dependent variable: Overall scale mean

3 Model	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>	Tolerance	VIF
Constant	2.427	.061		40.064	< .001		
Not computer literate	-.530	.068	-.417	-7.784	< .001	.992	1.008
20,000 - 50,000	.364	.128	.152	2.844	.005	.997	1.003
Diploma RN graduate	.332	.164	.109	2.027	.044	.990	1.010

Note. Regression model based on overall scale mean of dependent variable

Comments Made by Respondents

Respondents were invited to add comments about if they thought they could identify any other factors, not listed in the survey that would be deterrents to participation in a web-based graduate nursing program, at the end of the demographic data section of the survey. Eighty seven individuals added statements which were reviewed by the researcher upon receipt of the responses. Those comments were sorted and seven general deterrent themes emerged: (a) time constraints (b) web programs are more intense (c) cost (d) quality concerns (e) electronic communication concerns (f) respondent nearing retirement age and (g) no deterrents (see Appendix I).

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Purpose and Objectives

The purpose of this study was to describe what registered nurses in the state of Louisiana, who are members of the Louisiana State Nurses' Association (LSNA), identify as deterrents to participation in web-based graduate nursing programs. The specific research objectives explored in the study were:

1. To describe the personal demographics of a sample of registered nurses in the state of Louisiana, who are members of LSNA, with regards to age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.
2. To describe deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA, as measured by the Deterrents to Participation in Web-based Nursing Graduate Programs Survey Tool.
3. To describe latent constructs within the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument, as identified by Louisiana RNs who are members of LSNA, that emerge statistically following factor analysis of the dataset.
4. To determine if differences in perceived deterrents to participation as measured by the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool exist among the following demographic characteristics: age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.
5. To determine if a model exists which explains a significant portion of the variance of deterrents to participation in web-based graduate nursing programs by Louisiana RNs who are members of LSNA as measured by the Deterrents to Participation in Web-based Graduate Nursing

Programs Survey Tool, and the demographic characteristics of age, ethnicity, gender, computer literacy, years of being an RN, current educational status, marital status, number of children, employment status, parent's educational level, and household income.

Procedures

This is what was defined as the target population: the target population included registered nurses in the state of Louisiana who were members of the Louisiana State Nurses' Association (LSNA). This is what was defined as the accessible population: the accessible population was registered nurses who are members of the Louisiana State Nurses' Association (LSNA). There are approximately 1100 nurse members in LSNA.

Because emails of the LSNA are considered private, the LSNA Executive Director was unable to give the researcher access to a membership email list that could serve as a frame. The Executive Director instead, agreed to send a group invitation to the entire LSNA membership of 1100 members, inviting them to participate in the study (see Appendix D). Data collection took place over a period of eight weeks beginning May 29, 2009 and ending July 31, 2009. A total of 4 subsequent follow-up invitation reminders were sent via email (see Appendices E, F, G, and H). A total of 281 responses were obtained, making this a response rate of 26%.

Data was collected by a 4 point Likert - type interval scale survey tool. Originally, the tool was created in 1999 by Kathy Perdue and Dr. Tom Valentine for determining deterrents to participation in web-based continuing education by certified public accountants (CPAs) in the state of Georgia who were members of the Georgia Society of CPAs. Permission was obtained from Dr. Perdue and Dr. Valentine to adapt the Deterrents to Participation Instrument for use with this new population of Louisiana RNs who are members of the Louisiana State Nurses' Association (see Appendix A). The Deterrents to Participation in Web-Based Graduate Nursing Programs Survey Tool is composed of

fifty four deterrent items and eighteen demographic items. A summary of findings, conclusions and recommendations are presented in this chapter by research objective.

Summary of Findings

Objective One

Findings of objective one indicated that the greatest number of respondents indicated their age as between “46 - 55 years” ($n = 96$, 34.3%) and second largest identified their age as between “56 and 65 years” ($n=66$, 23.6%). The majority of the respondents identified themselves as “female” ($n = 262$, 94.6%). Fifteen of the respondents identified themselves as “male” ($n = 15$, 5.4%). “Caucasian” ($n = 238$, 85.6%) was the most frequently reported ethnicity. The second highest group identified their ethnicity as “African American” ($n = 31$, 11.2%). The largest group of respondents identified themselves as “computer literate” ($n = 125$, 45.1%) with the second largest group being identified as “very computer literate” ($n = 86$, 31%). The majority of respondents identified themselves as being an RN for “over 20 years” ($n = 149$, 53%). The largest group of respondents reported that they held master’s degrees ($n = 118$, 42%). The second largest group reported that they held BSN degrees ($n = 70$, 25%). Ten respondents reported that they were Diploma RNs ($n = 10$, 3.6%). Thirty respondents reported having doctorates ($n = 30$, 9.3%). Seventy six respondents identified themselves as nursing faculty members ($n = 76$, 27%). The majority of the respondents reported that they were married ($n = 191$, 69%). The second largest group identified themselves as single ($n = 45$, 16.2%). The majority of respondents reported having “1-2 children” ($n = 145$, 52.2%). When asked to identify area of employment, the largest group of respondents chose “other” ($n = 116$, 41.4%). Fifty respondents identified their area of employment as medical surgical ($n = 50$, 17.9%). Twenty seven respondents identified that they worked in critical care ($n = 27$, 9.6%). An almost equal number of respondents identified that they worked in psychiatric nursing ($n = 12$, 4.3%), pediatric nursing ($n = 13$, 4.6%), obstetrics ($n = 13$, 4.6%), family practice ($n = 12$, 4.3%), and community health ($n = 15$, 5.4%).

Fourteen respondents identified that they were currently not practicing ($n = 14$, 5%). The smallest group of respondents identified that they worked in the operating room ($n = 8$, 2.9%). With regards to their parents' educational status, the largest group of respondents identified that their mothers and fathers' educational status were equal in that 34% of respondents identified that their mothers "completed high school or GED" ($n = 95$, 34.3%), and 34% of respondents identified that their fathers "completed high school or GED" ($n = 96$, 34.3%). Forty two respondents indicated that their mother earned a bachelor's degree ($n = 42$, 15.2%) and forty seven respondents indicated that their father earned a bachelor's degree ($n = 47$, 16.8%). The largest group of respondents reported that their annual household income was "over 100,000 dollars" ($n = 129$, 48.1%). Sixteen respondents identified that their annual household income was 20,000 - 50,000 dollars ($n = 16$, 6%).

Objective Two

Findings for Objective Two revealed that there are no strong deterrents to participation in web-based graduate nursing programs as identified by the respondents. No item had a mean score greater than 2.67. Two items had a mean score between 1.0 and 1.49 indicating that these items were identified as "not a deterrent". They were "concern about not having the computer hardware" and "concern about not having email access". Seven items had a mean between 2.5 and 3.49. Each of these items was classified as "a moderate deterrent". Theoretically, these items would provide a moderate deterrent to a respondent's participation in web-based graduate nursing programs. The top ten deterrents with the highest means were (a) no authority in my work environment to download software (b) others might not place as high a value on web-based programs (c) prefer face to face interaction with the instructor (d) prefer face to face interaction with my peers (e) can't evaluate the quality of a web-based program before enrolling (f) prefer traditional classroom instruction and (g) too many interruptions in my office or home to participate, (h) prefer hearing lectures in person, (i) not enough quality courses, and (j) prefer using printed materials. These first seven were "moderate deterrents"

and the last three were “mild deterrents” with mean scores between 1.50 and 2.49. The top ten deterrents were classified as *educational methodology preferences*, *work related concerns*, and *evaluation concerns*. The number one deterrent was that respondents were “concerned that they did not have authority in their work environment to download software needed in a web-based graduate nursing program.” The second highest mean deterrent was a “concern that others might not place as high a value on web-based programs.”

The bottom ten deterrents all had low means between 1.45 and 1.74. Conceptually these are the items that the respondents identified as being the least likely to deter them from participating in a web-based graduate nursing program. They were (a) concern about not having the computer hardware, (b) concern about not having email access, (c) concern about not having the computer software, (d) no Internet access, (e) no technical knowledge, (f) no patience to learn how to use the web, (g) cost of connecting to the Internet, (h) no skill to download the necessary computer software, (i) no confidence, and (j) websites may change appearance. The first two items in the bottom ten deterrent list were each classified as “not a deterrent” because of mean scores less than 1.49. The last seven items in the bottom ten list were each classified as “a mild deterrent” because of mean scores between 1.50 and 2.49. Thirty four additional items on the Deterrents to Participation in Web-based Graduate Nursing Programs Survey Tool were each classified as “a mild deterrent” due to mean scores between 1.50 and 2.49, bringing the total number of items classified as “a mild deterrent” to forty one. The forty seven items that all had means below 2.49 fall conceptually into the categories of *concerns about technology related problems*, *personal issues*, and *time constraints*.

Objective Three

Findings for objective three revealed that the three factor model was responsible for explaining 55.436% of the variance in identification of deterrents. Within this model factor one accounted for 44.449% of variance, and consisted of twenty two variables with loadings ranging from .406 to .853. It

was assigned the label of *concerns about quality, time, and cost*. Seventeen variables loaded on factor two with loadings ranging from .443 to .940 and accounted for 6.954% of the deterrent variance. Factor two was assigned the label *concerns about access to resources: technological and personal*. Nine variables loaded onto factor three with loadings ranging from .403 to 1.076. Factor three was assigned the label *concerns about electronic mediated communication*. It explained 4.033% of the deterrent variance.

Objective Four

There were no significant differences between age, ethnicity, gender, years of being an RN, marital status, number of children, parents' educational status, when compared to the overall mean scale of the deterrents to participation in web-based nursing programs. Significant differences were found when the overall deterrent scale mean was compared to respondents who identified themselves as being not computer literate, as having a total annual household income between 20,000 and 50,000 dollars, being a diploma RN graduate, employment status, and the overall deterrent scale mean. Respondents who identified their educational status as that of Diploma RN had the highest mean scores of deterrents to participation in web-based graduate nursing programs and respondents who identified their educational status as that of being a current graduate student had the lowest mean score of deterrents to participation in web-based graduate nursing programs.

Objective Five

Findings for Objective five are based on multiple regression analysis employing dummy coding of the selected demographic variables of computer literacy, current educational status, and household income. Spearman's Rho nonparametric statistical test was used to show the correlations of the three variables current educational status, total household annual income, and computer literacy with the overall scale mean of the instrument. Three significant negative correlations were revealed between the

overall deterrent mean scale and current educational status ($r = -.128, p = .035$) (low association), total household income ($r = -.257, p < .001$) (low association), and computer literacy ($r = -.453, p < .001$) (moderate association). The variable that entered the regression model first was *no computer literacy*. Considered alone, this variable explained 18% of the variance in deterrents to participation in web-based graduate nursing programs by LSNA RNs. Two additional variables explained an additional 3% of the variance in the deterrents to participation in a web-based graduate nursing program's model. These variables were *current educational status of diploma RN graduate* and *total household annual income of 20,000 - 50,000 dollars*. These three variables explained a total of 21% of the variance in deterrents to participation in web-based graduate nursing programs.

Conclusions

Conclusion One

Fifty eight percent of the two hundred eighty one respondents to this survey were over forty six years of age, and fifty three percent of the respondents stated they had been working as RNs for over twenty years. Ten respondents wrote comments in the free expression section of the survey which identified *their nearness to retirement* as a major deterrent to participation. This gives the researcher pause, and supports the literature that suggests that the nursing workforce is aging and coming closer to retirement age (Mancuso-Murphy, 2007). The nursing shortage (National League for Nursing, 2002, May 18) will become even worse if the numbers of both RNs in practice and RNs in faculty roles do not increase in the future (Malone, 2007). These findings support constant themes in the literature of the tremendous need for MSN and PhD prepared faculty (Allan & McClellan, 2007; Berlin & Sechrist, 2002; Curl et al., 2007; Fontaine & Dracup, 2007; National League for Nursing, 2005, December 9) and that there is a graying of nurse faculty who have graduate degrees of either the master's or the doctorate. Lupien and Rosenkoetter (2006) also suggest that "the average age for

graduates of nursing doctoral programs is 46 years with fewer than 7% of graduates younger than 35 years” (p. 371).

Although not significant, the highest deterrent mean score was found in the 18-25 year old group, indicating a higher identification of deterrents to participation in web-based graduate nursing programs. This is in conflict with literature that suggests this young age group grew up with technology and will demand it in their coursework (Coates, 2007). However the complaint about technology integration in some nursing courses by this age group is something that the researcher has witnessed in the classroom. This tends to support Faison (2003) who describes those who usually enjoy participating in web-based courses as more mature, and self directed. The fact that this young age group were the respondents who were most deterred from participating in web-based graduate nursing programs, lends support to Lewis and Price (2005) whose study found that students complained of the number of online postings being overwhelming. This age group of millennials wants to have fun while learning (Coates, 2007). “E-learning models that fail consist of course work developed for a live classroom that is just posted on the Internet and expected to work” (Eittington, 2002). Halstead and Billings (2009) suggests that “students learn when actively engaged, interact in a social and applied context, and reflect on their practice” (p. 377). This supports the research that suggests that student satisfaction with web-based courses has more to do with the quality of instructional design and faculty involvement than the electronic method (Bradford et al., 2007; DeBourgh, 2003; Diekelmann & Mendias, 2005; Leski, 2009; Lewis & Price, 2007; Mancuso-Murphy, 2007; O’Neil & Fisher, 2008; Ryan et al., 2005).

Conclusion Two

The good news is that 76% of the respondents believe that they are computer literate. The factor analysis revealed that all except three items that loaded on the first factor had low mean deterrent scores less than 2.49, indicating that this factor is considered by the respondents to be only a mild

deterrent to participating in web-based graduate nursing programs. This first factor was labeled *concerns about quality, time and cost* and it accounted for 44.449 % of the variance. Items that seem to be only mild deterrents in this nursing population in Louisiana include access issues such as not having computer software, not having Internet access, not having technical knowledge, not having skill to download software, reluctance in downloading, not having confidence, not having time to learn how to use web, not having patience, and concerns about computers taking too long to bring up screens. Items that are no longer deterrents at all include concerns about email access, and not having computer hardware. This supports Lewis and Price (2007) who suggested “e-learning has become a more flexible and accessible option in post graduate studies that is embraced by students and faculty alike” (p. 143). The three items with mean scores between 2.5 and 3.49 that loaded on the first factor and were classified as moderate deterrents, included the concern that others might not value web-based graduate nursing programs, concerns about having too many interruptions, and concerns about not being able to evaluate the quality of a web-based graduate nursing program before enrolling.

Through multiple regression analysis, results indicate that whether or not a respondent perceived themselves as computer literate explained 18% of the variance in deterrents to participation in web-based graduate nursing programs. This gives some hope to the American Association of Colleges of Nursing (1999) whose position statement on distance education states that “the use of technology in higher education may provide an opportunity to increase the number of faculty-qualified nurses to support education, research, and practice” (para. 9). Two additional variables explained an additional 3% of the variance in deterrents to participation: current educational status of being a diploma RN graduate and total annual household income of 20,000 to 50,000 dollars. This finding also lends support to the Louisiana Workforce Commission (2008) goal to increase numbers of RNs in Louisiana by way of innovative bridge programs, scholarships and loan forgiveness. The fact that a lower household income between 20,000 and 50,000 dollars a year is a predictor of who might be deterred

from participation in web-based graduate programs supports Darkenwald and Merriam's (1982) theoretical model of participation which illustrates that socioeconomic status influences experiences in school which can affect one's decision to participate in adult education.

The finding that "graduating from a Diploma RN program" is a predictor of who might be deterred from participating in a web-based graduate nursing program supports the Cross (1981) Chain of Response Model that identifies that deterrents can be situational, dispositional, or institutional. Graduating from an RN diploma program is more of a situational deterrent. It is the lowest level of education that an RN can have to sit for the state board exam. The identification of this item as a predictor of deterrence to participation in web-based graduate nursing programs supports the theme that emerged in the literature review that the amount of formal education that a person has seems to enhance a person's adult education participation (Beder, 1990; Darkenwald & Merriam, 1982; Merriam et al., 2007). The fact that the respondents who identified themselves as graduate students had a lower mean score of deterrents to participation in web-based graduate nursing programs also supports this theme that a higher level of formal education enhances a person's adult education participation (Beder, 1990; Darkenwald & Merriam, 1982; Merriam et al., 2007).

Conclusion Three

In this study there was no significant difference found between men and women with regards to deterrents to participation in web-based graduate nursing programs. This is in conflict with the findings of Selwyn et al. (2006) study of adult learning and technology which found that women tended to use computers slightly more than men for formal learning, and that men tended to use computers more for informal learning. One explanation is that in the discipline of Nursing, more men are being recruited into the profession, and they are working alongside women in a field that is becoming more technology savvy (Halstead & Billings, 2009). Men and women nurses are increasingly expected to utilize computerized medication records, simulations, personal digital assistants (PDAs) and electronic mail

services equally (Halstead & Billings). Perhaps these advances in technology for men and women nurses in recent years have contributed to the finding of no significant difference between men and women with regards to identification of deterrents to participating in web-based graduate nursing programs. No significant differences were found between respondents' age, ethnicity, years of being a registered nurse, marital status, number of children, or parents' educational status when compared to the overall scale mean of the deterrent survey tool. Although not significant, it is interesting to note that the majority of the respondents identified that they had earned master's degrees, and that the majority of respondents identified that their parents had either "graduated from high school, or had the GED", or had "some college but no degree." This supports the early adult education participation research that suggested that a high formal educational level of one's parents may contribute in a positive way toward one's adult education participation (Darkenwald & Merriam, 1982; Johnstone & Rivera, 1965).

A concern about quality, time, and cost was the first factor identified by exploratory factor analysis. This is in disagreement with the original Perdue and Valentine (2000) study, but is in agreement with many studies that have done factor analysis work with deterrents (Johnstone & Rivera, 1965; Scanlan & Darkenwald, 1984). Low mean scores on the items that loaded on this factor can be explained because over the past twenty years, the cost of purchasing a computer has consistently gone down and web-based education for many people has begun to perhaps empower and "permit flexibility on their use of time" (Andrusyszyn et al., 2006, p. 84). Another possibility of why lack of time was identified only as a mild deterrent in this study might be related to McClusky's theory of margin (Merriam et al., 2007) which helps to explain the relationship between learning and an adult's changing roles in life. If a student's load such as being a wife, mother, student and nurse, exceeds power then students will have very little margin with which to participate (Merriam et al.). Thompson (1992) found in her study that nurses "were willing to proceed with little or no margin"(p. 102).The

researcher does acknowledge that the concepts of *prohibitive tuition costs* and *lack of time* were mentioned by some of the 87 participants who wrote free comments identifying deterrents at the end of the survey (see Appendix I). This is in agreement with Kubsch et al. (2003) whose research identified high costs of continuing education programs as prohibitive, and with Peters (2003) whose research also identified time and money as stressors associated with returning to school. The item “might feel isolated” loaded on the third factor labeled *concerns about electronic mediated communication*. The mean score for this item was 2.36 indicating that these respondents identified it as only a mild deterrent. This is good news for web-based education in nursing, perhaps a sign that fears of social isolation are not as strong as when distance learning first began. This finding lends support to Diekelmann and Mendias (2005) who identified the importance of social presence in web-based courses.

Conclusion Four

Because this study was a modified replication of a study by Perdue and Valentine (2000), it is appropriate to draw conclusions about how this study compares to their study. The top ten deterrents to participation in web-based graduate nursing programs in this study involved *educational methodology preferences* (a preference for face to face interaction with peers and instructors, and a preference for traditional classroom instruction, hearing lectures in person, and preferring the use of printed materials); *work related concerns* (too many interruptions in the office, no authority in the work environment to download needed software); and *evaluation concerns about quality* (can’t evaluate the quality of a web program before enrolling, concerns about how others would evaluate the value of a web-based program, and not enough quality courses). This is consistent with the original findings of Perdue and Valentine (2000) in their study of certified public accountants (CPAs) who were members of the Society of Georgia CPA Professional organization. In their original study using a similar deterrents to participation in web-based programs survey tool with CPAs as the current study used

with RNs, they also identified that the greatest deterrents involved *educational methodology preferences*, as well as *evaluation concerns about quality*. A difference in Perdue and Valentine's top deterrents is that they also included two more deterrent themes such as *concerns about time constraints* and *security concerns* which did not rank in the top ten of this study. Because ten years have passed since the original Perdue and Valentine study, better and quicker computer harddrives, and much improved software security programs might account for this difference.

The current study identified two items that were identified as "not a deterrent" with a mean of less than 1.49 or below. The study also identified 47 items that were each identified as "a mild deterrent" with mean scores between 1.50 and 2.49. The majority of these items fall conceptually into the categories of *concerns about technology related problems* (access, Internet costs, technology support, concerns about sending written comments over the Internet, concerns about sending financial information over the Internet, isolation fears, lack of technical skill, change in website appearances, lack of software, lack of technical knowledge, distracting graphics, reluctance to download software, concerned about getting lost in websites, concerns about the availability of instructor, might not provide printed reference materials, e-discussions could lack focus, misinterpretation of e-communication, might not provide feedback, concerns about not participating enough in online discussions, and concerns about lack of variety as compared to traditional graduate nursing programs); and *personal issues* (cost, accuracy concerns, concerns about nursing credits, lack of confidence, lack of patience, reluctance to participate, no self motivation to complete, too frustrating, concerned there are no sufficient advantages, relevancy of content, major not available, State Board of Nursing might not recognize credits, and can't get a recommendation from other nurses enrolled in web-based graduate nursing programs); and *time constraints* (no time to download, no time to learn how to use the web, takes too much time to bring up the screen, no time for vacations and web-based program participation, too much time staring at the computer, and takes too long to complete.) Findings by

Perdue and Valentine (2000) were similar in that *concerns about access to technology resources*, and *personal resources* were identified as items with low mean scores. An interesting difference in Perdue and Valentine's bottom deterrents is that *concerns about not having authority in the work environment to download software* was not a top ten deterrent in their study of CPAs and it was the number one top deterrent identified in this study of RNs. This could be explained by the differences in the professions with CPAs working in a business office with more autonomy and authority to download and nurses working in health care settings, taking care of patients, and often without the autonomy or authority to download anything on hospital computer hardware. This both conflicts as well as supports Attack and Rankin (2002) who found that insufficient time and access to computers were deterrents, and that many who dropped out of web-based courses were work only users. Once again, this study population of RNs identified that time and access to computers were less of a deterrent, which conflicts Attack and Rankin, in their findings about time and access; but that lack of authority to download materials needed to be able to participate in a web-based graduate program from work was indeed a top deterrent to this population of nurses, which does support Attack and Rankin (2002) in that many tend to want to participate in web-programs at work.

Through exploratory factor analysis, the researcher in this study of deterrents to participation in web-based graduate nursing programs identified a parsimonious three factor solution that accounted for 55% of the variance. The three factors were labeled (a) *concerns about quality, time, and cost* (b) *concerns about access to resources: technological and personal* and (c) *concerns about electronic mediated communication*. Perdue and Valentine (2000) identified a four factor solution that accounted for 54% of the variance. They were labeled as (a) *concerns about the quality of course offerings*, (b) *concerns about electronically mediated communication*, (c) *concerns about access to technology-associated resources*, and (d) *concerns about the availability of necessary personal resources*.

Through the use of multiple regression analysis, the researcher identified a model of three significant predictors of who might be deterred from participating in a web-based graduate nursing program. The three significant predictors include: (a) RNs who perceive themselves as not computer literate (b) RNs whose annual household salary is between 20,000 and 50,000 per year and (c) RNs who are Diploma program graduates. Further research of Diploma RN graduates and deterrents to participation in web-based programs is warranted since the ability to generalize to all diploma RNs is limited due to the survey being distributed in one southern state of Louisiana, to members of the LSNA. Perdue and Valentine (2000) did not perform a multiple regression model in their study of what deters C.P.A.s from participating in web-based continuing education programs.

Conclusion Five

This study makes an important contribution to the body of nursing knowledge because it suggests that Louisiana registered nurses who are members of LSNA have a high adoption and acceptance of web-based graduate nursing programs. While there is an important limitation in this study, in that it has limited ability to be generalized outside of the study population in the state of Louisiana; graduate nursing programs should be encouraged by the results of this study, to move full speed ahead in offering web-based programs for the Louisiana community of RNs as an alternative for furthering their education. It will be important for nursing graduate programs to put a strong emphasis on the quality of their web-based graduate nursing programs since concern about quality was identified as a moderate deterrent to participation. Marketing campaigns will need to promote that not only are web-based programs a way for nurses to get a graduate degree, but a quality graduate degree. Use of high standards and best practices for web-based learning (Halstead & Billings, 2009; Ko & Rossen, 2004) to shape the curriculum of these programs will be a priority.

In every phase of planning and development of a web-based program, evaluation should be present (Bourke & Ihrke, 2009). Having alumni to speak of the quality of the web-program that they

participated in will be important in getting the word out to registered nurses who might be considering such a program but who are concerned “that others might not place as high a value on web-based programs,” since this was the second highest mean deterrent identified by RN members of the Louisiana State Nurse’s Association in this study. In the current economy, it will also be important to have RN graduates of web-based graduate nursing programs discuss what kinds of jobs became available to them once they had achieved a graduate degree via a web-based program. “Optimized distance education requires educators to create learning environments that empower students to learn content and apply it in a real world context” (Billings, 2007, p. 248).

Recommendations

Before it is re-used, The Deterrents to Participation in Web-based Graduate Nursing Programs Survey Instrument needs updating and revision to better represent the rapid changes in technology that have come on the scene in the last ten years since the original tool was designed by Perdue and Valentine in 1999. It should be altered to take into account what might be deterrents to web 2.0 technologies such as podcasts, wikis and PDAs, web 3.0 technologies such as SecondLife, and simulations that are being used in nursing education (Halstead & Billings, 2009). The researcher also recommends that future researchers revise the item on the survey tool that asks participants to identify their current employment status, making certain to include an opportunity to explain what a choice of “other” means. The response of “not practicing” should also include a space for respondents to say why they are not practicing, such as whether they are retired, unemployed, disabled, staying at home to raise children, or whatever reason they might wish to list. Once the survey instrument is updated, this study should be repeated using a sample of Louisiana registered nurses who do not belong to a professional nursing organization to see if their responses would be significantly different from the responses in this survey of RNs who belong to a professional nursing organization. The study could also be replicated on a national level instead of only one southern state.

Since multiple regression data analysis in this study revealed three significant predictors of deterrents to participation in web-based graduate nursing programs, (a) not computer literate, (b) graduate of an RN diploma program, and (c) a total household income of 20,000 to 50,000 dollars per year; web-based nursing graduate programs might consider an outreach to RN diploma graduates in an effort to make them aware of high quality web-support technology to foster participation. Scholarships for lower income nursing students are recommended, and programs to support computer literacy within the nursing community should be considered.

Recommendations for further research include evaluation of existing web-based graduate nursing programs in the United States. A mixed method design approach with a quantitative portion that includes surveys of major stakeholders such as administrators, faculty and students in web-based programs currently in existence and a qualitative portion that would include interviews with administrators, faculty and students would give valuable information about what is working and what is not with regards to web-based graduate nursing programs. A study looking at how much of a load versus margin (Thompson, 1992) RNs are willing to take on before experiencing burnout or exhaustion would provide interesting information for developers of web-based graduate nursing programs who might want to design programs that empower students with flexible use of their time (Andrusyszyn et al., 2006).

This study did not differentiate between web-based graduate nursing programs that were synchronous, where student and instructor could communicate in real time, and those that were asynchronous, where student and instructor communicate whenever it is convenient to them at different times (Eitingin, 2002). A study that explores how synchronous and asynchronous teaching methodologies are being used in web-based graduate nursing programs in the state of Louisiana and in the nation would be interesting. A longitudinal study that would follow a group of RN graduate

students who are enrolled in web-based graduate nursing programs from admission to graduation might be valuable in understanding the lived experience of these RNs in web-based learning.

A final recommendation to conclude this study comes from one of the anonymous RN respondents who wrote: “I hope that this research will influence our local Louisiana educational institutions to step into leadership roles in the development of comprehensive, cost effective, and convenient web-based masters preparation programs for Louisiana nurses who want to contribute to the preparation of future nurse generations, but who do not have the flexibility with work or other obligations to participate in traditional classroom based instruction” (anonymous survey respondent, 2009). The researcher of the current study shares this hope.

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APPENDIX A

PERMISSIONS

1. Permission from Dr. Thomas Valentine for use of the Deterrents to Participation Scale G

From: "Thomas Valentine" <tvnj@uga.edu>
To: "Suzanne Carpenter" <wowlams@cox.net>
Cc: "Kathy Perdue" <email@kathyperdue.com>
Sent: Tuesday, September 23, 2008 8:57 PM
Subject: Re: Permission to use Deterrents to Participation Scale G and permission for scale that was used in 2000 article on web-based CPE.

Hi, Suzanne.

1. I hereby grant you permission to use the DPS-G. The scale was published in Adult Education Quarterly. I suggest you format it on your own letterhead if you decide to use it.
2. The Perdue instrument was developed for Kathy's dissertation. In my opinion, it would be the better instrument for your study, since it is designed to measure deterrents to web-based CPE. I'm copying Kathy on this note. Kathy, is it alright if Suzanne uses this instrument?
Suzanne, I also suggest you get a copy of Kathy's excellent dissertation.

Best of luck. I'd love to know what you decide to do.

Tom Valentine
Professor
Adult Education
The University of Georgia

2. Permission from Dr. Kathy Perdue for use of her tool with a nursing population: the Deterrents to Participation in Web-Based Education Programs

From: email@kathyperdue.com

To: tvnj@uga.edu ; [Suzanne Carpenter](#)

Cc: [Kathy Perdue](#)

Sent: Friday, September 26, 2008 11:45 PM

Subject: Re: Permission to use Deterrents to Participation Scale G and permission for scale that was used in 2000 article on web-based CPE.

Suzanne.

I would be glad for you to use my dissertation instrument for purposes of measuring deterrents in your research. Future information on your findings would be of interest to me.

Request you delete any email addresses other than the one on this email. I am currently the Chief Financial Officer at the U.S. House of Representatives and I would prefer to use this personal email address for research oriented communications.

Best of luck with your research -

Kathy

APPENDIX B

DETERRENTS TO PARTICIPATION IN WEB-BASED GRADUATE NURSING PROGRAMS SURVEY INSTRUMENT

Deterrents to Participation in Web-Based Graduate Nursing

Dear Research Participant, The purpose of this research study is to identify deterrents to participation in web-based graduate nursing programs by Louisiana registered nurses who are members of the Louisiana State Nurses' Association. The master's degree is the minimum requirement for a nurse to teach in a nursing school, with the doctoral degree being preferred in many institutions. With the current shortage of master's and doctoral prepared nursing faculty, web-based graduate nursing programs have become one way for nurses to pursue the master's and doctoral degree. Your participation will help me to identify what deters nurses from participating in web-based graduate nursing programs. There are no risks to participation in this study. Your responses will be kept confidential. You may choose not to participate at any time. Completion of this survey will serve as voluntary consent to participate in this study. It should take about ten minutes of your time. Please click on one answer per question. Thank you. You may contact me at 225-247-4561 or by email at wowlams@cox.net if you have any questions, or if you have any problems understanding this instrument. If you have questions about subjects' rights or other concerns, you can contact Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb.

Thank you. Suzanne Carpenter, MSN, RN, Doctoral Student at Louisiana State University.

Deterrents to Participation in Web-Based Graduate Nursing

Click on one response for each item.

1. I don't have the computer hardware necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

2. I don't have the computer software necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

3. I don't have the technical knowledge necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

4. I don't have the confidence necessary to participate in a web-based nursing graduate program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

5. I am reluctant to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in a web-based nursing graduate program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

6. I don't have the skill to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

7. I don't have the authority in my work environment to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications)

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

8. I don't have reliable enough access to the Internet to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

9. I don't have reliable enough access to electronic mail (e-mail) to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

10. I don't have the time to learn how to use the web for a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

11. I don't have the patience to learn how to use the web for a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

12. I don't have access to adequate technology support services if I have a computer-related problem during a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

13. I prefer traditional classroom instruction over web-based instruction for a graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

14. I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for web-based graduate nursing programs.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

15. I prefer face-to-face interaction with my peers rather than the electronic only communication used in web-based graduate nursing programs.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

16. I prefer face to face interaction with the instructor rather than the electronic only communication used in web-based graduate nursing programs.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

17. I prefer hearing graduate nursing lectures in person rather than hearing them through a computer speaker.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

18. I don't believe participating in a web-based graduate nursing program is cost effective.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

19. I don't believe that a web-based graduate nursing program has sufficient advantages to justify using it for graduate nursing education.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

20. I don't believe that there are enough web-based graduate nursing programs offering quality courses.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

21. I don't believe that the nursing graduate school major that I want is available through a web-based program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

22. I am concerned that downloading graduate nursing program course materials from the web will take too long.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

23. I am concerned that my computer may take too long to bring up screen displays in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

24. I am concerned that the web sites used in a web-based nursing graduate program might change their appearance between the times I use them.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

25. I am concerned that the cost of purchasing the computer hardware needed to participate in a web-based graduate nursing program would be too high.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

26. I am concerned that the cost of connecting to the internet is too high to justify participating in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

27. I am concerned that the cost of printing downloaded course materials is too high to justify participating in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

28. I am concerned that I might get lost moving around web sites during a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

29. I am concerned that electronic communication could be misinterpreted during participation in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

30. I am concerned that electronic discussion in a web-based nursing program course would lack focus.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

31. I am concerned that a web-based graduate nursing program might not provide immediate feedback.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

32. I am concerned about spending too much time staring at a computer screen while participating in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

33. I am concerned that the instructor of a web-based graduate nursing program course might not be available when I need assistance.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

34. I am concerned that I might have too many interruptions in my office or home to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

35. I am concerned that I would not participate enough in the on-line discussions in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

36. I am concerned that the graphics and streaming video in a web-based graduate nursing program might be too distracting.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

37. I am concerned that an online graduate nursing program might not provide printed reference materials for me to use in my work.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

38. I am concerned that I don't know how to evaluate the quality of an online graduate nursing program before enrolling in it.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

39. I am concerned that I can't get a web-based graduate nursing program recommendation from other nurses who have enrolled in one.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

40. I am concerned that a web-based graduate nursing program would take too long to complete.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

41. I am concerned about feeling isolated in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

42. I am concerned that I might not have enough self-motivation to complete a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

43. I am concerned that my graduate school nursing credits may not be properly documented by the provider of a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

44. I am concerned that the State Board of Nursing will not recognize credits earned in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

45. I am concerned about the accuracy of course content in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

46. I am concerned about the relevancy of course content in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

47. I am concerned that other people might not place as high a value on web-based graduate nursing programs as on traditional types of graduate nursing programs.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

48. I am concerned about submitting written comments over the internet in order to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

49. I am concerned about submitting financial information over the internet in order to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

50. I am concerned about submitting personal information over the internet in order to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Deterrents to Participation in Web-Based Graduate Nursing

51. I am concerned that a web-based graduate nursing program would provide less variety than I could get at a traditional graduate nursing program.

- ☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

52. I am concerned that I would be unable to combine vacation time with fulfilling my graduate school responsibilities if I participated in a web-based graduate nursing program.

- ☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

53. I am concerned that participating in a web-based graduate nursing program would be too frustrating.

- ☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

54. It has never occurred to me to participate in a web-based graduate nursing program to continue my education.

- ☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

55. I would describe myself as

- ☐ not computer literate ☐ somewhat computer literate ☐ computer literate ☐ very computer literate

56. Which web-based Graduate nursing program would you be most interested in participating in?

- ☐ RN-MSN (Bridge Program for ASN and Diploma RN graduates)
- ☐ MSN (for nurse Educators)
- ☐ MSN (for nurse Administrators)
- ☐ MSN (Clinical Nurse Specialist)
- ☐ DNP (Doctor of Nursing Practice for nurse practitioners)
- ☐ PhD (Doctor of Philosophy)
- ☐ DNS (Doctor of Nursing Science)
- ☐ not interested in participating in any online graduate nursing program

Deterrents to Participation in Web-Based Graduate Nursing

57. Would you be more interested in enrolling in a traditional graduate nursing program that is not web-based?

- ☐ Yes
- ☐ No
- ☐ Not sure
- ☐ I am currently enrolled in a traditional graduate nursing program
- ☐ I am currently enrolled in a web-based graduate nursing program
- ☐ I am currently enrolled in a graduate nursing program that offers both traditional and web-based courses.

58. Have you ever participated in a totally web-based nursing course during your undergraduate nursing program?

- ☐ Yes
- ☐ No

59. Have you ever used the internet to purchase goods or services?

- ☐ Yes
- ☐ No

60. In what area do you currently practice nursing?

- ☐ medical-surgical
- ☐ psychiatric
- ☐ pediatric
- ☐ OB/GYN
- ☐ critical care
- ☐ Operating Room
- ☐ community health
- ☐ family practice
- ☐ Other
- ☐ not practicing

Deterrents to Participation in Web-Based Graduate Nursing

61. Please select the choice that best describes your current educational status.

- ☐ BSN Registered Nurse
- ☐ ASN Registered Nurse
- ☐ Diploma Registered Nurse
- ☐ Master's prepared Nurse Practitioner
- ☐ DNP Nurse Practitioner
- ☐ Master's prepared clinical nurse specialist
- ☐ Master's prepared nursing faculty member
- ☐ Master's prepared nursing administrator
- ☐ Master's prepared registered nurse anesthetist
- ☐ PhD prepared nursing faculty member
- ☐ DNS prepared nursing faculty member
- ☐ DNP prepared nursing faculty member
- ☐ Master's level nursing graduate student
- ☐ PhD level nursing graduate student
- ☐ DNS level nursing graduate student
- ☐ DNP level nursing graduate student

62. What is your gender?

- ☐ Male
- ☐ Female

63. What is your age?

- ☐ 18-25 years
- ☐ 26-35 years
- ☐ 36-45 years
- ☐ 46-55 years
- ☐ 56-65 years
- ☐ over 65

Deterrents to Participation in Web-Based Graduate Nursing

64. What is your ethnicity?

- ☐ African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Caucasian/White
- ☐ Hispanic, Latino/a
- ☐ Native Hawaiian or other Pacific Islander
- ☐ Other

65. What is your marital status?

- ☐ married
- ☐ widowed
- ☐ divorced
- ☐ single

66. How many children do you have?

- ☐ none
- ☐ 1-2
- ☐ 3-4
- ☐ 4-5
- ☐ more than 5

67. How many years of experience as an RN do you have?

- ☐ none yet, have not graduated
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ 16-20 years
- ☐ over 20 years

Deterrents to Participation in Web-Based Graduate Nursing

68. What is your household income level?

- ☐ Under 20,000 per year
- ☐ 20,000 - 50,000 per year
- ☐ 51,000 - 75,000 per year
- ☐ 76,000 - 100,000 per year
- ☐ over 100,000 per year

69. What is the educational level of your mother?

- ☐ did not complete high school
- ☐ completed high school or GED
- ☐ has some college education but no degree
- ☐ earned an associate's degree in college
- ☐ earned an bachelor's degree in college
- ☐ earned a graduate degree in college (PhD, MD, Master's)

70. What is the educational level of your father?

- ☐ did not complete high school
- ☐ completed high school or GED
- ☐ Has some college but no degree
- ☐ earned an associate's degree in college
- ☐ earned a bachelor's degree in college
- ☐ earned a graduate degree in college (PhD, MD, Master's)

71. Would you be interested in teaching in a nursing school once you graduated with a nursing graduate degree?

- ☐ yes
- ☐ no
- ☐ not sure

Deterrents to Participation in Web-Based Graduate Nursing

72. Would you be interested in learning how to teach in a web-based nursing program once you earned a graduate nursing degree?

- ☐ Yes
- ☐ No
- ☐ not sure

73. If there are any other factors, not listed in this survey, that would be deterrents to your participation in a web-based graduate nursing program, please type them in this free text box. Thank you.

Deterrents to Participation in Web-Based Graduate Nursing

Your responses are very much appreciated!

Sincerely,

Suzanne Carpenter, MSN, RN

Doctoral Student at LSU

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVALS

1. Our Lady of the Lake College Approval for Pilot Study: Approval Number 0812

----- Original Message -----

From: Dreznick, Michael T

To: Suzanne Carpenter

Sent: September 25, 2008 12:25 PM

Subject: RE: Pilot Study Deterrents to Participation in Web-based Graduate Nursing Programs

Hi Suzanne.

Your pilot study was approved by the Our Lady of the Lake College IRB, was assigned protocol number 0812, and was classified as Exempt.

Mike Dreznick
Institutional Review Board Our Lady of the Lake College
Baton Rouge, Louisiana

2. Louisiana State University Approval for Pilot study: Approval Number E4226

Suzanne,

We have started the review of your application titled "Pilot Study of Deterrents to Participation in Web-based Graduate Nursing Programs." Please add IRB contact information to your consent script. Our suggested statement is "If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. "

Sincerely,

Ryan Graham
Institutional Review Board
Louisiana State University
P: 225.578.8692
F: 225.578.6792
irb@lsu.edu | www.lsu.edu/irb

3. Louisiana State University Approval for Dissertation Study: Approval Number E4598

Suzanne,

LSU IRB approved and your number is E4598 and your research is approved as exempted ☺

Kris

Krisanna Machtmes, PhD
Associate Professor
School of Human Resource Education
Louisiana State University
Rm 142 Old Forestry Bldg
Baton Rouge, LA 70803

Completion Certificate

This is to certify that

L. Suzanne Carpenter

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 06/28/2006.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
 - ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
 - the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
 - a description of guidelines for the protection of special populations in research.
 - a definition of informed consent and components necessary for a valid consent.
 - a description of the role of the IRB in the research process.
 - the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.
-

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.



Institutional Review Board
Dr. Robert Mathews, Chair
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.6792
irb@lsu.edu | lsu.edu/irb

- Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at <http://www.lsu.edu/irb/screeningmembers.shtml>
- A Complete Application Includes All of the Following:
 - (A) Two copies of this completed form and two copies of parts B thru E.
 - (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
 - (C) Copies of all instruments to be used.
 - If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
 - (D) The consent form that you will use in the study (see part 3 for more information.)
 - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.
Training link: (<http://phrp.nihtraining.com/users/login.php>.)

1) Principal Investigator: Suzanne Carpenter Rank: Doctoral Candidate Student*? Y/N Y

Dept.: Human Resource Educ Ph: 225 247 4561 E-mail: lhowar7@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each

* If student, please identify and name supervising professor in this space

Dr. K. Machtmes, PhD, Associate Professor, LSU AG Center
225-578-7844
email: machtme@lsu.edu

3) Project Title: Deterrents to Participation in Web-Based Graduate Nursing Programs

4) LSU Proposal?(yes or no) NO If Yes, LSU Proposal Number _____
Also, if YES, either ☐ This application completely matches the scope of work in the grant
OR
☐ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) Registered Nurses
• Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Suzanne Carpenter ** Date 5/13/09 (no per signatures)
**I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 5/18/2012

IRB# E4598 LSU Proposal# _____
☒ Complete Application
☒ Human Subjects Training

Screening Committee Action: Exempted ☒ Not Exempted _____ Category/Paragraph 2

Reviewer Mathews Signature Robert Mathews Date 5/19/09

Deterrents to Participation in Web-Based Graduate Nursing Programs

1. Deterrents to Participation in Web - Based Graduate Nursing Programs

Dear Research Participant, The purpose of this research study is to identify deterrents to participation in web-based graduate nursing programs by Louisiana registered nurses who are members of the Louisiana State Nurses' Association. The master's degree is the minimum requirement for a nurse to teach in a nursing school, with the doctoral degree being preferred in many institutions. With the current shortage of master's and doctoral prepared nursing faculty, web-based graduate nursing programs have become one way for nurses to pursue the master's and doctoral degree. Your participation will help me to identify what deters nurses from participating in web-based graduate nursing programs. There are no risks to participation in this study. Your responses will be kept confidential. You may choose not to participate at any time. Completion of this survey will serve as voluntary consent to participate in this study. It should take about ten minutes of your time. Please click on one answer per question. Thank you. You may contact me at 225-247-4561 or by email at wowlams@cox.net if you have any questions, or if you have any problems understanding this instrument. If you have questions about subjects' rights or other concerns, you can contact Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb.

Thank you. Suzanne Carpenter, MSN, RN, Doctoral Student at Louisiana State University.

2. Deterrents to Participation in Web-Based Graduate Nursing Programs

Click on one response for each item.

1. I don't have the computer hardware necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

2. I don't have the computer software necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

3. I don't have the technical knowledge necessary to participate in a web-based graduate nursing program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

4. I don't have the confidence necessary to participate in a web-based nursing graduate program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

5. I am reluctant to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in a web-based nursing graduate program.

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb

Exemption Expires: 5/18/2012

APPENDIX D

FIRST INVITATION TO STUDY PARTICIPANTS

Original Message -----

From: [LSNA](#)

To: LSNA@LSNA.ORG ; wowlams@cox.net

Sent: May 28, 2009 3:22 PM

Subject: Please Help an LSU Doctoral Student in a Nursing Research Effort

Please Help an LSU Doctoral Student in a Nursing Research Effort

Dear LSNA member, The purpose of this research study is to identify deterrents to participation in web-based graduate nursing programs by Louisiana registered nurses who are members of the Louisiana State Nurses' Association. The master's degree is the minimum requirement for a nurse to teach in a nursing school, with the doctoral degree being preferred in many institutions. With the current shortage of master's and doctoral prepared nursing faculty, web-based graduate nursing programs have become one way for nurses to pursue the master's and doctoral degree. Your participation will help me to identify what deters nurses from participating in web-based graduate nursing programs. There are no risks to participation in this study. Your responses will be kept confidential. You may choose not to participate at any time. Completion of this survey will serve as voluntary consent to participate in this study. It should take about ten minutes of your time. Please click on one answer per question. Thank you. You may contact me at 225-247-4561 or by email at wowlams@cox.net if you have any questions, or if you have any problems understanding this instrument. If you have questions about subjects' rights or other concerns, you can contact Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. Thank you. Suzanne Carpenter, MSN, RN, Doctoral Student at Louisiana State University. Click on the link provided to access the survey.

https://www.surveymonkey.com/s.aspx?sm=333frsm4zpLkaQBIRc6kSg_3d_3d

APPENDIX E

SECOND INVITATION TO STUDY PARTICIPANTS

----- Original Message -----

From: [Suzanne Carpenter](#)

To: jaclark@lsna.org ; wowlams@gmail.com ; wowlams@cox.net

Sent: June 09, 2009 5:33 PM

Subject: Re: LSU doctoral student second invitation to help with nursing research

Dear LSNA member, A little over one week ago, I sent you an invitation to participate in an important nursing research study concerning web- based graduate nursing programs. Your participation will help me to complete the requirements for my doctoral degree at Louisiana State University. Thank you so very much if you have already completed the survey: Deterrents to Participation in Web-based Graduate Nursing Programs! **If you have not yet participated in the survey**, I am sending you this second opportunity to help me learn what registered nurses identify as deterrents to participation in web-based graduate nursing programs. Please click on the link below to add your ideas to this nursing research study. It should take only about 10 minutes of your time. I hope to add your voice to my results! Thank you so very much. Your participation is important to me and very much appreciated! Suzanne Carpenter, MSN, RN, Doctoral Candidate at Louisiana State University. If you have any questions about the survey, I can be reached at 225 247-4561 cell, or wowlams@cox.net.

https://www.surveymonkey.com/s.aspx?sm=333frsm4zpLkaQBIRc6kSg_3d_3d

APPENDIX F

THIRD INVITATION TO STUDY PARTICIPANTS

----- Original Message -----

From: [Suzanne Carpenter](#)

To: [Joe Ann Clark](#)

Cc: wowlams@cox.net ; [Carpenter, Suzanne H](#)

Sent: June 18, 2009 4:17 PM

Subject: Please Help Suzanne Carpenter, LSU Doctoral Candidate, by sharing your opinions and ideas in her nursing research

Dear LSNA member, Please accept my apologies for yet another reminder email. To those of you who have already completed my doctoral dissertation survey, Thank you very much. The responses are anonymous, so I have no way of knowing if you have already completed the survey or not. **If you have not yet had the time to complete it, please consider taking 10 minutes of your time to help me discover what LSNA members identify as deterrents to participation in web-based graduate nursing programs! Your opinions and ideas are vital to my research.** I would also like to clarify a point that I have received a few questions about: It does not matter if you already have a PhD; I would still like to know what you feel would deter you from participating in a web-based graduate nursing program. Your current degree status does not eliminate any LSNA member from participating! I would like to hear from everybody! I have been an RN for 27 years, with 18 of those years as a nurse educator. I know how valuable your time is, so let me thank you in advance. If you have any further questions about my research, please feel free to call me at 225-247-4561 cell, or email me at wowlams@cox.net. Thank you once again, for sharing your ideas and your precious time with me. Click on the link below to access the survey. Suzanne Carpenter, MSN, RN LSU Doctoral Candidate, Baton Rouge, LA

https://www.surveymonkey.com/s.aspx?sm=333frsm4zpLkaQBIRc6kSg_3d_3d

APPENDIX G

FOURTH INVITATION TO STUDY PARTICIPANTS

From: LSNA <lsna@lsna.org>

Subject: FW: 118 more responses needed by LSU doctoral student for completion of nursing research that involves YOU!

To: LSNA@LSNA.ORG

Date: Thursday, July 2, 2009, 1:42 PM

Dear LSNA member, As a registered nurse in Louisiana for the past 27 years, with 17 of those years being in nursing education, I know the consequences of the nursing faculty shortage in our great state. I also know that many schools of nursing are using web-based graduate nursing programs as one way for nurses to pursue master's and doctoral degrees that are required of faculty positions. Some of you have already participated in my survey of RNs who belong to LSNA which attempts to discover what you identify as deterrents to participation in web-based graduate nursing programs. Thank you. **Unfortunately, I have sent my survey to all 1100 members of the LSNA and so far I have received only 182 responses. To those of you who have not yet completed the survey, I know that you are professional nurses and that your time is so valuable. I am asking that you take only 10 minutes to show your spirit of nursing to help me with this nursing research. I hope to publish my findings, and I am in need of at least 118 more responses in order to have a more representative voice of LSNA members. Please find it in your heart to help me in a nursing research effort that seeks to help nursing school administrators understand what nurses identify as deterrents or barriers to participation in web-based graduate nursing programs.** If barriers can be identified, programs can use this information to work toward breaking those barriers down, and perhaps allow more nurses to gain graduate degrees via a web-based program. On the other hand, if you identify barriers that are seen as insurmountable, nursing programs can use this information as well, to determine just what is the best way to offer graduate nursing programs. Either way you look at it, this research is very valuable; BUT it means nothing without your voice. IF you have received this and you know of a colleague that belongs to the LSNA who perhaps has not received this survey because of vacations, not being at work for the summer, or email spam re-routing, etc., please forward this to them (or call them first to tell them you are sending it!) and ask for their help. I will keep the survey open for some extra time, waiting for your responses! God Bless! Suzanne Carpenter, MSN, RN LSU Doctoral Candidate Baton Rouge, LA My cell is 225 247 4561. My email is wowlams@cox.net. Please feel free to contact me. I need your help immensely!! Click on the survey link below to access it.

https://www.surveymonkey.com/s.aspx?sm=333frsm4zpLkaQBIRc6kSg_3d_3d

APPENDIX H

FINAL INVITATION TO STUDY PARTICIPANTS

----- Original Message -----

From: [Suzanne Carpenter](#)

To: [Joe Ann Clark](#)

Cc: wowlams@cox.net

Sent: July 19, 2009 11:48 PM

Subject: Only 55 more responses needed for LSU doctoral student's nursing research

Dear LSNA member, **THANK YOU.** After my last email reminder to you about participating in my dissertation study, I have received a total of 245 responses. I am in need of only 55 more responses in order to have a more representative voice of LSNA members. If you have not yet responded to the survey, **Please find it in your heart to help me in a nursing research effort that seeks to understand what RNs, who are LSNA members, identify as deterrents or barriers to participation in web-based graduate nursing programs. It should only take 10 minutes of your time.** As a registered nurse in Louisiana for the past 27 years, with 17 of those years being in nursing education, I know the consequences of the nursing faculty shortage in our great state. I also know that many schools of nursing are using web-based graduate nursing programs as one way for nurses to pursue master's and doctoral degrees that are required of faculty positions. If barriers can be identified, programs can use this information to work toward breaking those barriers down, and perhaps allow more nurses to gain graduate degrees via a web-based program. On the other hand, if you identify barriers that are seen as insurmountable, nursing programs can use this information as well, to determine just what is the best way to offer graduate nursing programs. Either way you look at it, this research is very valuable; **BUT it means nothing without your voice. If you have received this survey and you know of a colleague that belongs to the LSNA who perhaps has not received this survey because of vacations, not being at work for the summer, or email spam re-routing, etc., please forward this to them (or call them first to tell them you are sending it!) and ask for their help. I will keep the survey open until July 31, 2009, waiting for your responses!** God Bless! Suzanne Carpenter, MSN, RN LSU Doctoral Candidate Baton Rouge, LA My cell is 225 247 4561. My email is wowlams@cox.net. Please feel free to contact me. I need your help immensely!! Click on the survey link below to access it. https://www.surveymonkey.com/s.aspx?sm=333frsm4zpLkaQBIRc6kSg_3d_3d

APPENDIX I

THEMES FROM RESPONDENTS' COMMENTS

- **Time Constraints**

1. "Juggling school with work responsibilities is the biggest concern in my current program."
2. "Time and money"
3. "Time constraints limit my participation in any further educational endeavor at present."
4. "The time commitment on top of my present job."
5. "I work Monday thru Friday so I would need a school that offers strictly online not half class half computer based. Maybe even a school that will allow weekends or evenings because all of the colleges I've checked into classes are held during morning and afternoon hours."
6. "flexibility to a schedule since I work M-F 700 - 1700 only time off is weekend--do I have enough motivation to give up off time?"
7. "having to attend actual time on campus"
8. "Time is a major issue for me. I work M-F forty hours a week. On weekends off I have major other obligations."
9. "Children are a huge deterrent to online as well as traditional education."
10. "Not willing to do clinical. Have B.S. - working on M.S. in Health Services Administration - not willing to go back and get B.S. in nursing - should be able to earn M.S. in certain areas without backtracking."

- **Web Programs are More Intense**

1. "Open book exams tend to have extremely difficult and irrelevant questions. Courses that trust students to not use references may ask straight-forward questions, but it is not possible to know how many students used references and may have never read the required materials. I enjoy many of the benefits of online courses, but I would prefer to have examination at a monitored site."

2. "Web based graduate programs are very structured. At times, the work load is more intense than a traditional program. Meeting deadlines for web-based programs are non-flexible. I think faculty that teach web-based programs do not really identify with students because there is no face to face."
3. "I completed a web-based MSN program two years ago, with success, not without some frustration, but it was workable."
4. "The time it takes to respond to classroom discussion is greater in web-based programs than in traditional classrooms and therefore is a deterrent. The written requirements for web-based programs seem to be greater vs. traditional classrooms."

- **Cost**

1. "There is a comparative lack of variety in online graduate program tracks, as well as a widespread lack of educational provider participation and choice of educational institutions, but the most significant deterrents for myself are that the programs often do not offer significant cost savings over classroom based instruction, and that the great majority of online programs, while offering accommodation for local clinical instruction, do require periodic classroom contact. It is my sincere hope that this research will influence our local Louisiana educational institutions to step into leadership roles in the development of comprehensive, cost-effective, and convenient web-based masters preparation programs for Louisiana nurses who want to contribute to the preparation of future nursing generations, but who do not have the flexibility with work or other obligations to participate in traditional classroom-based instruction."
2. "Web-based programs are very expensive and that is a deterrent for me, considering the cost for a doctorate vs. how many more years I plan to stay in nursing education, and perceived lack of support from administration within the institution to provide appropriate support, sabbatical, etc."

3. "I would love to go back to school but cannot afford it. Cost factor is everything! Also, I have found that online courses are more expensive than traditional."
4. "Funding is a deterrent. I would be interested in working while I complete my studies."
5. "Web-based programs are expensive."
6. "Cost of the web-based degree is higher than a traditional setting degree."
7. "time and money"
8. "cost of the program"
9. "Eight years from retirement. Not interested or willing to spend the money to earn a Ph.D.."
10. "I do not qualify for grants and work does not see a need for this web-based degree I am working on.....other than the \$7000 dollar a year cost....., I love going to a web-based college....."
11. "The primary deterrents to participation in a web-based graduate nursing program are, for me, the cost of tuition, the time commitment on top of my present job, and the time and cost of completing the GRE."
12. "Cost of quality programs"
13. "time and money"
14. "Financial aid - the cost of online programs is a bit excessive."
15. "Cost"
16. "I have looked into several online nursing programs. Most I have found are at private universities and the cost is prohibitive to attend. Most were between \$20,000 - 30,000 a year to attend. I would be very interested in a program offered at a public institution."
17. "There are tight restrictions at the hospital where I am employed that will not allow promotions to the next level when a nurse stays at the bedside to do patient care. The nurse has no motivation to actually obtain a higher degree as they have to move into management to be eligible for any monetary compensation after graduation. I have been a bedside nurse for over 30 years and am not interested in

management. Also the hospital where I am employed will not give any tuition assistance at this time to obtain a degree higher than a BSN. At my age 58, I have no motivation to go back to school.....tuition reimbursement for the doctorate is not available.....no incentive for a doctorate as this is not a requirement for promotion for the next level.....There is no incentive for the nurses to obtain a higher degree than a BSN unless they want to leave the bedside. As well the management positions are limited. Good luck on your project and I admire your dedication to higher education. This leads to another problem, teaching does not pay well. All the instructors I know have part-time jobs to make ends meet.”

18. “financial aide: Web-based programs seem to be as expensive as traditional programs”

19. “expense of tuition”

20. “I have recently found out that one could teach LPN’s with an ASN degree.....while I enjoy tutoring, I hesitate spending \$30,000 dollars plus for a degree that I may find later I do not like....”

- **Quality Concerns**

1. “Primary concerns are accessibility to instructor and poor response time in terms of feedback. Both of these concerns depend upon the instructor rather than the fact that the course is web-based.”

2. “As a student with disabilities, I have a hard enough time in school, the online courses I was forced to participate in were poorly done, did not have actual lectures just pages and pages of notes which is more like a correspondence course than education led by an instructor.”

3. “I think the quality of the program would be my main concern.”

4. “I believe that most graduate programs in nursing are currently not as rigorous and challenging as the programs were many years ago. I have concerns that strictly online degrees would add to the problems we already have with “watered down” graduate nursing education. I favor a combination of web-based and onsite graduate education.”

5. “Generalized lack of, unclear or untimely communication from the faculty and administration of university. Web-based courses work only as well as the faculty who teach and manage them.”

6. “(1) a program not recommended by the LSNA, (2) a program not practiced in Louisiana, and (3) a university with low state board pass/fail ratings.”

- **Electronic Communication Concerns**

1. “Since more than 90% of communication is “non-verbal,” there are inherent difficulties in communicating only through electronic means.”

2. “I find web-based learning boring. It did not keep me focused while I was enrolled in my MSN program. I find it to be busy work.”

3. “(1) You have assumed that the nurses interested in a web-based program do not have a visual or hearing impairment. (2) Part of graduate education is networking, and although you can do it on the Internet, it misses the human interaction which is a large component of nursing. (3) There is too much “value” placed on web-based learning...does it really make a difference positively? I can’t answer that. The web-based program would not work for me.”

4. “I was in a web-based master’s level graduate program. I did not like the computer as the only avenue of learning. There was no option of ever having a classroom setting. I did well in the class but it was not a learning environment that I felt totally confident about.”

5. “Web-based graduate nursing programs do not integrate individualized assessment of theoretical and practical application of knowledge.”

6.” If an instructor requires you to be on the computer at a specific time, it may not be convenient.”

- **Respondent Nearing Retirement Age**

1. “getting ready to retire”

2. “Eight years from retirement.”

3. “.....How close are you to retirement?”

4. "I am too close to retirement to be interested in another degree. If web-based education had been available years ago when I was rearing my children, I would have taken advantage of it. At this point in my life, I would not work enough years to even recoup what it would cost me to get a terminal degree. Had I been able to do it without leaving my family, I would have done it 10-15 years ago."
5. "At my age 58, I have no motivation to go back to school..."
6. "retirement age and time to complete degree"
7. "I am near retirement thanks."
8. "A psychiatric Nurse Practitioner program. I have been a practicing therapist for 30 years. My age is also a deterrent."
9. "I retired from Psychiatric Nursing in 2006, and retired from all nursing in 2008."
10. "At this point in my career, I am not sure it is worth the time, effort and expense."

- **No Deterrents to Participation**

1. "I have no deterrents. I completed my post-masters certification program in an online program and had a better experience than in a traditional setting. It allowed me to work and participate in the program on a time table that worked for me. Everyone was very motivated and there was more participation than in a traditional setting."
2. "I think web-based educational programs are excellent. I am presently working to obtain a Doctorate in Health education through a 100% online program."
3. "I already have a doctoral degree earned before the use of totally online courses and I teach graduate nursing courses in a totally web-based curriculum."
4. "I am currently enrolled in an online program to obtain a MSN - HCSM and plan to graduate Spring 2010."
5. "I completed by MSN online and would recommend it to any self directed nurse."
6. "I am currently enrolled in an online graduate nursing program for FNP"

7. "...I teach in an online program..... I live and breathe online so I had to disagree with most statements!"
8. "I just graduated with my Master's from an online program and was very happy with it and would attend school that way again."
9. "Interested in post doctoral web-based courses or ability to audit.."
10. "I completed my MSN as a NP through a web-based program. I will complete my DNP through a web-based program in August of this year. I fully support web-based courses/programs. Without them, I don't know if I would have taken the time to go sit in a classroom. Web-based programs provided the opportunity to be in school full time while continuing to work full time. As an older mature learner, I do not need the stimulation of a classroom setting. I have enough self discipline to do web-based courses on my own. I would also welcome the opportunity to be a nursing instructor for web-based courses/programs."
11. "I have taught and coordinated a graduate nursing program that provided online courses, although all coursework was not entirely online. I have taught several online courses, and learned to do so better each time. Many students require considerable initial support; some did not avail themselves of opportunities to learn to manage online (by attending onsite orientations or by completing online orientation assignments.) the ones who participated fully, seemed to learn to manage well. It will be interesting to learn the outcome of your study! How might we obtain a copy?"
12. "I completed my graduate study in a traditional classroom setting and enjoyed it very much. I tried to think how I would feel about web-based study and although it would be scary - it would have been helpful for me with work and family responsibilities."
13. "already in a web-based program"
14. "I am already teaching in a nursing school and I am currently enrolled in a full time ACNP-DNP nursing program that is 100% web-based."

15. “.....I have participated in an online graduate program (MSN) and have taught in at least partially web-based courses.”
16. “....I am a doctorate prepared faculty and teach in a 100% web-based program”
17. “Completed PhD, have taught web-based courses, and currently I do not work or anticipate returning to the workforce.”
18. “...am a faculty member who teaches a graduate course online. I also completed the didactic portion of a program online to prepare myself as a nurse-midwife.....”
19. “I am both a full time MSN nursing faculty member and part-time NP. I completed my NP/CNM with an online distance learning program. I am planning to complete a DNP with the same institution.”

VITA

Suzanne Carpenter is the daughter of John and Vera Howard. As a child she was a frequent pediatric patient at Hotel Dieu Hospital in New Orleans, Louisiana. It is probably these early experiences of getting to know the sisters of Hotel Dieu, who were also nurses, which nurtured ideas of becoming a nun or a nurse. A call to the vocation of marriage and children replaced the idea of becoming a nun, but studying nursing became a reality. Suzanne attended St. James Major Catholic Elementary School and St. James Major Catholic Girls High School graduating in 1977. She earned a Bachelor of Science in Nursing degree from Louisiana State University Medical Center School of Nursing in 1982. She married Ware Carpenter that same year and worked as a registered nurse, certified in critical care nursing for 10 years at the Baton Rouge General Hospital. They have three children, Laura, Andrew and Matthew. Suzanne earned the Master of Science in Nursing degree from Southeastern Louisiana University in 1994. Her master's research thesis was titled: Job Satisfaction among Clinical Nurse Specialists in Louisiana Hospitals.

Suzanne began working in nursing education as a part time clinical instructor at Our Lady of the Lake College in 1992, while still working in the critical care units of the Baton Rouge General. When a full time position as a teaching assistant at the college became available, she accepted it. Since receiving her master's degree, she has taught pharmacology and clinical nursing at every level, for seventeen years at Our Lady of the Lake College, where she still serves today. She was promoted in academic rank from part time clinical instructor in 1992 to full time teaching assistant in 1993, to instructor in 1994, to assistant professor in 1996 and finally to associate professor in 2000. During her 27 years as a registered nurse in Baton Rouge, Suzanne has been blessed to receive many honors. She was honored locally with the Baton Rouge District Nurses' Association's Outstanding Nurse Award in 1994. She was honored nationally with the American Association of Critical Care Nurses' "Excellence in Caring Practices Award" in 1997. She was also nominated for the American Association of Critical

Care Nurses' Outstanding Nurse Educator Award in 2000. She was awarded three endowed professorships at Our Lady of the Lake College. The first one was awarded to write a manuscript on Pope John Paul II's apostolic constitution *ExCorde Ecclesiae*, which was hand delivered to Pope John Paul II just 6 months before he died. The second endowment was awarded to publish the manuscript as a book. The book was then hand delivered to Pope Benedict XVI. This endowment was also used to travel to Rome to pray at the tomb of Pope John Paul II, and to attend the general audience of Pope Benedict XVI. The title of her book is "New Hope for Catholic Higher Education: ExCorde Ecclesiae, A Lay Perspective." Suzanne received a letter from both Pope John Paul II's nuncio and Pope Benedict's nuncio thanking her for her book. The third endowment enabled her to travel to Alaska to participate in a conference given by a Catholic professor from Georgetown University on integrating faith and medicine, and to travel to Ohio to participate in a conference on the Scholarship of Teaching and Learning.

In 2005, Hurricane Katrina greatly affected Suzanne and her family. She lost her childhood home, and her beloved father died six months later. To help with her grief, she began doctoral studies in the summer of 2006, but chose not continue in that program. Instead, she became certified in distance education from the Louisiana Consortium for the Advancement of Distance Education. In 2007 she began a new program of doctoral studies in the Department of Human Resource Education and loved the philosophy of the program. In 2008, she passed the national certification exam given by the National League for Nursing and became a Certified Nurse Educator (C.N.E.). In this same year, she was also inducted into the Gamma Sigma Delta Honor Society at Louisiana State University. She successfully defended her dissertation on December 2, 2009. The degree of Doctor of Philosophy will be conferred by Louisiana State University at the May 2010 commencement ceremony.