

AN EXAMINATION OF BEST PRACTICES IN RETENTION IN THE ASSOCIATE
DEGREE NURSING PROGRAM
IN THE FLORIDA COMMUNITY COLLEGE SYSTEM

by

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ABSTRACT

This mixed-methods research examined student nurse retention methods perceived as *best practice* by directors and coordinators in selected Associate Degree Nursing (AND) programs within the Florida Community College System (FCCS). A critical nursing shortage is expected to worsen over the next twenty years due to the aging workforce and the inadequate supply of qualified nurse graduates. The Associate degree nursing programs supply the majority of nursing graduates to the workforce. Thus, the associate degree nursing programs and student retention measures were studied.

The research was conducted using a Delphi survey of directors of nursing in ADN programs within the FCCS. This survey served as the template for faculty surveys, which were distributed to faculty members under the selected ADN program directors. Students were surveyed with a similar Likert type scale with focus groups to allow for open-ended interviewing.

Following analysis of the data, directors of nursing, faculty, and students in the ADN programs identified eleven best practices. Extensiveness strengthened the research. Resulting information will be helpful for nursing program curriculum and program planning. Future research can examine *best practices* quantitatively. This study can also be replicated at other venues.

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LIST OF ACRONYMS

FCCS	FLORIDA COMMUNITY COLLEGE SYSTEM
ADN	ASSOCIATE DEGREE NURSE
GPA	GRADE POINT AVERAGE
RN	REGISTERED NURSE

CHAPTER ONE

INTRODUCTION

“Nurses are critical to promoting, maintaining, and restoring the health of the nation’s people” (Butters, 2004, p. 2). “Between 1996 and 2000, the number of registered nurses per 100,000 persons declined 2 percent in the United States” (Viterito & Teich, 2002, p. 1). By 2020, it is estimated that the nation will have vacancies for 2,000,000 nurses in the healthcare workforce (Viterito & Teich, 2002). Significant factors at the nexus of the critical nursing shortage include a growing elderly population, aging of the current RN workforce and pending retirements, low retention in nursing programs, funding and capacity issues, and the absence of qualified nursing faculty and educators. The average age of the working nurse is 47 years (Buerhaus, Staiger, & Auerbach, 2000). In 2001, fewer than 30 percent of registered nurses were less than 40 years of age (United States General Accounting Office, 2001). To cope with the nursing shortfall and, in part, because of increasing healthcare demands from a growing elderly population, America is turning to foreign nations to recruit more people to the profession (Li, 2004). In like manner, international nurses from foreign countries are receiving governmental support to attend educational programs in the United States.

Nationally, the American Association of Community Colleges (AACC, 2001) reported that 65 percent of new healthcare workers get their training at community colleges and that 60.4 percent of applicants taking the national registered nurse examination (the *National Council Licensure Examination for Registered Nurses* [NCLEX-RN] to become licensed professional registered nurses) were graduates of

Associate Degree Nursing (ADN) programs. “Growth in new registered nurses can be measured by the number passing the national licensure exam” (Stineman, 2004, p. 1). The National Council of State Boards of Nursing (NCSBN) reported that the number of U.S. graduates taking the NCLEX-RN for the first time declined by 29 percent between 1996 and 2001 (Spratley, et al., 2001). A more telling statistic, however, is the fact that “during the first quarter of 2003, 60 [percent] of the first time candidates taking the NCLEX-RN graduated from associate degree programs” (NCSBN, as cited in Stineman, 2004, p. 3). The Nurse Reinvestment Act of 2002 (Donley, R., Flaherty, M.J., Sarsfeld, E., Taylor, L., Maloni, H., Flanagan, E., 2002), which allows the programs to expand their capacity for nursing students, will possibly affect increased numbers of nursing students and will further necessitate examination of retention concerns in ADN programs.

The Role of the Community College

The National Organization for Associate Degree Nursing stated, “Associate degree nursing (ADN) education provides a dynamic pathway for entry into registered nurse (RN) practice” (N-OADN, 1998). The president of N-OADN indicated that of the 880 ADN programs currently available, over 600 are in community and technical colleges, with the remainder in university and four-year colleges (Tanner, 2004). Reporting findings from a national survey sent to Chief Academic Officers (CAOs) at more than 1,100 community colleges in 2000, Nock and Shults (2001) stated, “registered nursing was the program most frequently reported as hot, both overall and within the allied health field of study” (p. 3). Nock and Shults used the American Association of Community Colleges’ operational definition of “hot” programs: those from which

students are hired immediately upon graduation” (p. 1). Adding to the advocacy of the community college’s role as an integral part of the higher education spectrum, Warford (2004) wrote the following:

Since their inception, American’s community colleges have represented a unique opportunity for all people to benefit from higher education. Today, nearly half of all people who start a college career do so in a community college. Thus, we have a nation of learners who expect us to keep the promise—the promise of access to higher education, better jobs, and a chance for a better life. (p. 13)

“The open-access philosophy of community colleges practically ensures that the students served will differ in their experiences, education levels, and socioeconomic status” (Armstrong, 2000, p. 681). In nursing, however, students enter an identifiable culture.

According to Talbot (2000), “nursing is a practice-based profession requiring students to receive both a clinical as well as an academic knowledge of the discipline” (p. 359). While Talbot stressed that the workload of community college nursing faculty members includes clinical teaching and supervision in addition to classroom teaching, Li (2004) suggested that nursing faculty also employ a variety of teaching strategies to match different types of learners. Faculty and learners engage in multiple interactions through clinical experiences, required volunteer hours and practicum hours, and testing programs that cause nursing students to physically, emotionally and mentally attach to the program. For nursing educators, matriculation within this culture involves selecting the students and then embracing them. Nursing students expect, seek, and need engagement, inclusion, and involvement. In this context, then, retention in nursing in the community college may differ from retention in other programs of study.

Multiple studies (Li, 2004; Stickney, 2002; Stineman, 2004) have focused on significant variables, both extrinsic and intrinsic, that influence student retention and/or persistence in nursing programs at the community college. These studies have typically reported variables that are significantly correlated with retention, and, in turn, the studies have often examined only one community college. These studies fail, however, to examine the retention strategies used at various community colleges. Stickney (2002) concluded her research findings with these suggestions:

A broad study [is needed that] would also reveal what strategies for retention different nursing programs have used. Most studies currently are looking at variables that affect attrition. Through these studies suggestions are given for reducing the attrition levels. Studies need to be conducted to determine which of various retention strategies are effective for ... students. (p. 74)

Statement of the Problem

The availability of qualified nurses and nursing educators continues to decline at a time when the need for quality healthcare is increasing. Reports of increased nursing shortages signal an urgent need to learn about factors and strategies that can promote program retention and graduation in students who are interested in nursing (Butters, 2004). With an increasing number of businesses needing highly skilled workers, though not necessarily those with formal four-year degree, positions requiring an Associate degree are today among the fastest growing nationally.

Currently, community colleges produce the majority of *new* registered nurse candidates and these ADN programs have the potential to aid, with significant impact, the

nation's critical nursing shortage. Community college education is rising in prominence and value nationwide. Accordingly, it is time to revisit the importance of community colleges in nursing education, specifically as these institutions can serve as viable venues for resolving the critical nursing shortage. With a critical nursing shortage looming, it is important for nursing schools to retain and graduate as many students as possible.

Statement of Purpose

This mixed-methods research collectively examined retention methods that are perceived as *best practices* in ADN nursing programs in the Florida community college in system. Retention practices in nursing programs may play a part to allay the critical nursing shortage. The primary purpose of this mixed-methods study was to identify retention strategies of model Associate degree nursing programs in the Florida Community College System.

A model program had high student retention, 79.1 percent or higher, as found in data from the Florida Department of Education and Research (Windham, 2004). Directors of model programs identified factors related to retention in terms of *best practices*. Identification and subsequent dissemination of these *best practices* in nursing education may help to reduce student attrition in ADN nursing programs in the community college.

Theoretical Framework

The study of community college student retention is grounded in many theories; those theories, in many instances, are founded on studies that included

students in university settings. Several studies (Pascarella, et al., 2004; Pascarella & Terenzini, 1978; Terenzini & Pascarella, 1977) have suggested that students who integrate socially and intellectually with their college of affiliation stay at that college and are less likely to voluntarily leave. According to Wild and Ebbers (2002), “The theoretical institutional models that are best known and accepted are Tinto’s (1987) work regarding academic and social integration and Astin’s (1977) study of involvement” (p. 506). Bandura’s theory of self-efficacy can also be intertwined with the retention theory used in this research.

Community colleges are generally nonresidential institutions. The students attending these institutions tend to have external stimuli, including demands of the community, jobs, and family, which can interfere with engagement at the college. According to Tinto, external interaction can be so strong that this engagement may be difficult for the student to accomplish (Tinto, 1993). Astin reinforced the concept of faculty and student interactions, which can encourage engagement at the community college. Regarding ADN programs, Bandura’s theory of self-efficacy is exemplified as the nursing student generally has a specific goal in mind, that of becoming an RN. Behavior, personal, and environmental factors play parts in this goal attainment process. Having family support and interaction with fellow students and with faculty leading to ADN student retention is basis for the theoretical framework of this research.

Research Questions

The primary research question is: *What are the best practices retention methods in Associate Degree Nursing (ADN) programs in the Florida Community College System (FCCS)?* Several secondary research questions were examined to provide definition and

specificity to the possible replication of these *best practices* in the FCCS, as well as nationally. The secondary questions include the following:

1. As identified by a purposive sample of Florida community colleges with comparable tracking mechanisms in place, what is the retention rate of *authentic* nursing students in ADN nursing programs in the FCCS?
2. Based on the Delphi technique, what are the *best practice* retention methods, as identified by ADN and/or nursing program coordinators in the FCCS?
3. Based on survey response methodology, what are the prevailing methods by which ADN nursing programs in the FCCS retain nursing students?
4. Using survey response methodology and focus groups, what are the *best practice* retention methods, as identified by ADN and/or nursing program students (stayers, not leavers) who have successfully completed their nursing program education in the FCCS?

Methodology

Research Paradigm

This study used a mixed-methods research design to identify *best practices* retention strategies of nursing students in the Associate Degree Nursing (ADN) programs in the FCCS. Primary sources of data were three purposive respondent groups of the nursing administrators, nursing faculty, and nursing students at most of the 28-member community colleges in the FCCS. Nursing administrators gather for periodic Deans and Directors meetings. The survey was introduced at this meeting in January 2005 to the 26 who attended.

The community colleges in the FCCS were surveyed to ascertain *best practices* methods of retention in educating nursing students at these institutions. Data collection also investigated the retention rates based on nursing students who are accepted and *authentically* enrolled in two-year ADN programs in the FCCS. Specific to the research questions, mixed-methods included the use of survey research, the Delphi technique, and focus groups. Survey validity was established by use of the Delphi process provision of *best practices* statements of nursing directors from selected ADN programs within the FCCS. Survey reliability was supported by the use of split-halves and Cronbach's alpha rating of items greater than 0.8.

Secondary Research Questions

Secondary Research Question One: Using a Delphi technique methodology, what are the prevailing methods, as perceived by directors and coordinators that ADN programs in the FCCS use to retain nursing students?

Using the rationale espoused by Glass and Oakley (2003), the Delphi technique was used as one of the research methods in this study for several reasons:

- The problem at hand [does] not lend itself to quantitative, inferential statistical analysis, but rather [is] a problem that can benefit from the subjective reasoning of a group of experts.
- These experts [come] from a variety of backgrounds, serve a variety of community colleges, and [have] no ready forum available for such discussion.
- The group size would be unwieldy for face-to-face discussions.

- There would [be] considerable expense in travel and accommodation necessary to bring this group to one location.
- Finally, the heterogeneity of the group participants need[s] to be preserved to assure the validity of the results. (p. 683)

Nursing program coordinators or directors in the FCCS were asked to complete a faculty/staff opinion survey (see Appendix B). The survey asked for administrator perceptions about prevailing methods by which ADN programs in the FCCS retain nursing students. This survey was pilot-tested for content validity and reliability. The nursing program coordinators or directors for the member community colleges (N=28) was used to identify the sampling frame. The sample for this pilot study consisted of four of the 28 community college nursing faculty members in the FCCS. Twenty-three member colleges were identified on the Florida Nurses Association's Web site as having individual sites that pertain to their respective nursing programs (see http://www.floridanurse.org/as_degree.asp).

Based on review of preliminary findings, the sample for this portion of the study consisted of six of the 28 ADN program coordinators in the FCCS. All directors and coordinators were considered experts in their field. These individuals participated in a Delphi process to agree upon the *perceived best practice* retention methods for nursing students. Participants were asked to provide ideas in response to this query: *What are the best practice retention methods for producing Associate degree in Nursing graduates in the Florida Community College System?* Guiding questions included a query of best practice recruitment and tracking of nursing students (see Appendix F).

Dunham (1998) provided commentary, detailing the purpose of the Delphi technique:

[Its] purpose . . . is to elicit information and judgments from participants to facilitate problem-solving, planning, and decision-making. It does so without physically assembling the contributors. Instead, information is exchanged via mail, FAX, or email. This technique is designed to take advantage of participants'

creativity as well as the facilitating effects of group involvement and interaction.

It is structured to capitalize on the merits of group problem-solving and minimize the liability of group problem-solving. (para. 1)

Secondary Research Question Two: Based on survey response methodology, what are the best practice retention methods, as identified by ADN and/or nursing program faculty in the FCCS? *Guiding questions included queries of best practice for recruitment and tracking of nursing students.*

Following completion of the Delphi process, nursing faculty and program coordinators in the FCCS were asked to complete a nursing faculty/administrator survey. It was based on statements from the Delphi process. The pilot was completed before the actual study was performed. The survey asked for the faculty's and administrator's feedback regarding prevailing methods by which ADN programs in the FCCS recruit, track, and/or seek to retain students. The program administrator selected faculty members for participation. At least three full-time faculty members participated in the survey.

Secondary Research Question Three: Using survey response methodology and focus groups, what are the best practice retention methods, as identified by ADN and/or nursing program students who have successfully completed their nursing program education in the FCCS?

Similar to the research of Butters (2004), the study approach involved research of what a select group of students identified as factors and strategies for success in ADN programs at the community college. This portion of the research used those findings as presented by the Delphi process and completed with nursing program coordinators and faculty. This portion also provided an open-ended response section where a focus group of successful nursing students who have graduated from the FCCS (*stayers, not leavers*) identified those perceived factors that are integral to nursing student retention. This portion of the study aligns itself with the theory surrounding epistemological beliefs of community college students and their learning processes, where Schreiber and Shinn (2003), for example, observed that “understanding students’ beliefs and learning processes has become an important component of academic achievement” (p. 707).

Directors of the participating nursing programs selected the student participants for the five focus groups. The five focus groups met at the campus nursing programs at the director’s discretion and this portion of the data collection provided triangulation of the concepts of *best practices* in retention of nursing students from the perspectives of students.

Significance

Multiple studies (Li, 2004; Stickney, 2002; Stineman, 2004) have focused on significant variables that influence student retention and/or persistence in nursing programs at the community college. These studies have typically reported variables that are significantly correlated with retention; however, these studies fail to identify and examine the various recruitment and retention strategies that are actively in use at various community colleges.

This study proposed an examination of the Associate Degree in Nursing (ADN) in the Florida Community College System (FCCS) to reveal *best practice* retention strategies that different nursing programs in the FCCS have used. The study builds upon prior research in an effort to determine which of various retention strategies (e.g., those that support a younger and more diverse population of students) are effective for promoting overall higher retention rates among nursing students.

As the population ages and the health needs and treatments become more complex, healthcare workers—particularly RNs—are aging. Predictions are that they will be leaving the workforce within 5-10 years (Buerhaus, et al., 2000). Because of this mass exodus of qualified healthcare professionals, the nursing workforce will fall short of the required contingent of nurses to provide quality healthcare in the United States. The nursing shortage also has global significance, as Li (2004) reported: “In Taiwan, the nursing workforce is being diminished by a high rate of attrition” (p. 3). Similarly, when studying the experience of community college transfer students in Canadian baccalaureate nursing programs, Cameron (2003) asserted that “the ramification for

educators and their prospective institutions [is] enormous as most of nursing education [is] located in the community college system” (p. 2). Butters (2004, p. 2) addressed the issue of the nursing shortage with profound simplicity: “Identification of problems affecting the nursing field is the first step to finding solutions.” This research aims to establish the need for clear statistical representation and data collection within the FCCS, as it pertains to ADN programs.

This mixed-methods research examined existing *best practices* in retention methods perceived to have substantively influenced and increased the numbers of graduates from ADN programs in the community college. Bernier (n. d.), the President of the National Organization for Associate Degree Nursing (N-OADN) until 2005, encouraged nursing faculty and administrators to publish and become spokespersons for the profession. Directors of nursing programs, coordinators of nursing programs, and faculty within the FCCS are particularly interested in *best practices* retention strategies that may stem the critical nursing shortage. The primary purpose of mixed-methods study was to identify the characteristics of model retention programs in the FCCS. Identification and subsequent dissemination of these *best practices* in nursing education may help to reduce student attrition in ADN programs in the community college.

Assumptions

The following research assumptions were made while investigating the research questions in this study:

1. Nursing program leaders and faculty were honest and objective with self-reports of data.

2. FCCS ADN graduates were identifiable and accessible in sufficient number as a target population for voluntary participation in this study and to contribute to the overall research findings.
3. The state of Florida Department of Educational Effectiveness and Research was able to provide a method of calculating true nursing student retention. That is, the pre-nursing students would be statistically separated from the true nursing students in the FCCS Associate degree nursing programs.

Limitations

1. The researcher's limited professional preparation in the administration of the Delphi Process can be seen as a limitation in this research. The researcher learned of the Delphi Process while taking courses in quantitative and qualitative research but had never performed a Delphi research study in the past. To mitigate this limitation, a pilot study for the Delphi Process was performed. This pilot study, which also supported content validity of the instrument, focused on FCCS ADN programs that would not be included in the actual research. The Delphi process used during the pilot was not changed during the actual study.
2. Data of interest were limited to the Associate Degree Nursing program in the Florida Community College System.
3. Taken together, the limited number of participants, specifically six directors, 60 faculty members, and 26 students, may be considered a small sample size. However, in this qualitative research, the participants were surveyed and/or

interviewed in depth, providing information different from that collecting quantitative data on a large number of subjects.

4. The participants in the Delphi Process were the nursing program directors in the most successful ADN programs with the highest retention rates. Directors with lower retention rates were not part of the Delphi Process or the surveys or focus groups. Omission of programs with lower retention rates could be a limitation as the successful programs may have had the students with highest potential. Therefore, the ADN programs with higher retention rates could possibly have such rates without concern for retention practices. This limitation was overcome, in part, by using programs with lower retention rates in the pilot study. The results of the pilot participant study are reported in this dissertation.
5. The students in the focus groups were not screened with criteria of finding students who have difficulty. The directors of nursing were asked to select successful nursing graduates who met these criteria:
 1. Have a varied ethnic background.
 2. Would be willing to participate in a focus group for one to two hours.
 3. Were successful in their ADN program studies.

Although the directors did not receive instruction to select students who had difficulty during the nursing program, during focus group interviews, many students mentioned the times that they had illnesses, difficulties at home, or failed a test during the nursing program. They also revealed how they coped with these difficult situations.

Definition of Terms

For the purposes of this study, certain terms are operationally defined for clarification:

- *Advanced registered nurse practitioner (ARNP)* means any person licensed in Florida to practice professional nursing in advanced or specialized nursing practice (see Florida statutes, <http://www.flsenate.gov/statutes/>).
- *Approved program* means one conducted in a school, college, or university that is approved by the board pursuant to Florida statute 464.019 for the education of nurses.
- The *Associate Degree in Nursing (ADN)* is typically a five-semester program offered primarily through two-year institutions and community colleges, which prepare nursing students to take the NCLEX-RN. ADN students obtain approximately 70 or more college credit hours in anatomy and physiology, English composition, college algebra, microbiology and pharmacology, as well as nursing courses in all the specialties. Upon graduation, ADN students take the NCLEX-RN.
- *Authentically enrolled nursing student* means one who has been accepted into the closed ADN program and has enrolled in the first nursing course.
- The *Bachelor of Science in Nursing (BSN)* degree can be achieved as the first education attempt in nursing. The graduate of this program will have met the requirements of the Bachelor of Science Program with a nursing major. The graduate then is qualified to take the NLCEX-RN.

- A *community college* is typically a two-year government-supported college that offers an Associate degree; as a caveat, some community colleges in Florida currently offer four-year degrees, and these institutions have been renamed *colleges*, rather than community colleges.
- The *Florida Community College System (FCCS)* is the public community college system of Florida, which is made up of twenty-eight member institutions.
- *Licensed practical nurse (LPN)* means any person licensed in Florida to practice practical nursing (see Florida statutes, <http://www.flsenate.gov/statutes/>).
- The *National Council Licensure Examination for Registered Nurses (NCLEX-RN)* is the national registered nurse examination.
- *Nursing treatment* is the establishment and implementation of a nursing process for the care and comfort of individuals, the prevention of illness, and the education, restoration, and maintenance of health (see Florida statutes, <http://www.flsenate.gov/statutes/>).
- The *Practical Nurse Program (PNP)* is a 13-month Licensed Practical Nurse (LPN) program, which is not offered at many of the community colleges in Florida. Graduates of PNP programs can work as LPNs after passing the NCLEX-LPN exam.
- *Registered nurse (RN)* means any person licensed in Florida to practice professional nursing (see Florida statutes, <http://www.flsenate.gov/statutes/>).

Summary

Nursing student retention is of paramount importance to maintain the level of healthcare provided in the United States. As the population ages and nurses leave active practice because of age or other reasons, the nursing workforce will need to be replenished. A vacancy rate of nursing positions in hospitals is expected to be two million by 2020. This research investigated retention of ADN nursing students as a method to help alleviate this potential disaster to our healthcare system.

Chapter One introduces the study. In this mixed-methods Research, Chapter Two reviews the literature and examines the student attrition theory of Vincent Tinto, the attachment theory of Alexander Astin, and the theory of self efficacy of Albert Bandura. Chapter Three discusses the methodology by which directors, coordinators, faculty, and ADN students within the FCCS were asked to list their ideas of best practices for student retention. Chapter Four analyzes results from the pilot and actual Delphi research, faculty surveys, student surveys and focus groups, and provides a list of best practices for nursing student retention for ADN programs within the FCCS. Chapter Five discusses implications of the research and offers recommendations for further study.

CHAPTER TWO

REVIEW OF THE LITERATURE

A shortfall of registered nurses (RNs) is expected to reach two million by 2020. At the nexus of the nursing shortage in the United States is the introduction of adequate numbers of nursing graduates into the workforce. The Associate degree nursing programs within the Florida Community College System produce the majority of nursing graduates for the state. Therefore, retention of nursing students is an important topic of research. This review of the literature will examine concepts related to (a) healthcare and nursing education in the United States, (b) the uniqueness of nursing students within a community college system (c) recruitment, retention, and attrition in Associate Degree in Nursing (ADN) programs, and (d) the Florida Community College System (FCCS).

Healthcare and Nursing Education in the United States

In those patients using the United States healthcare system, outcomes have been compared in relation to nursing staffing ratios. The higher the ratio, the better the outcome in safety, infection, and mortality rates (Jackson, Chiarello, Gaynes, & Gerberding, 2002). For example, a 2001 *Chicago Tribune* investigation “pointed to the current nursing shortage as a major contributing factor to fatal medical errors.” The investigation concluded that more than 1,700 patient deaths were the result of nursing errors directly attributable to nursing staffing” (Pederson, 2001). Nursing education in the United States includes progressive leveling in degrees of competency and professionalism. Karp (2002) provided the following schematic for levels of nursing education:

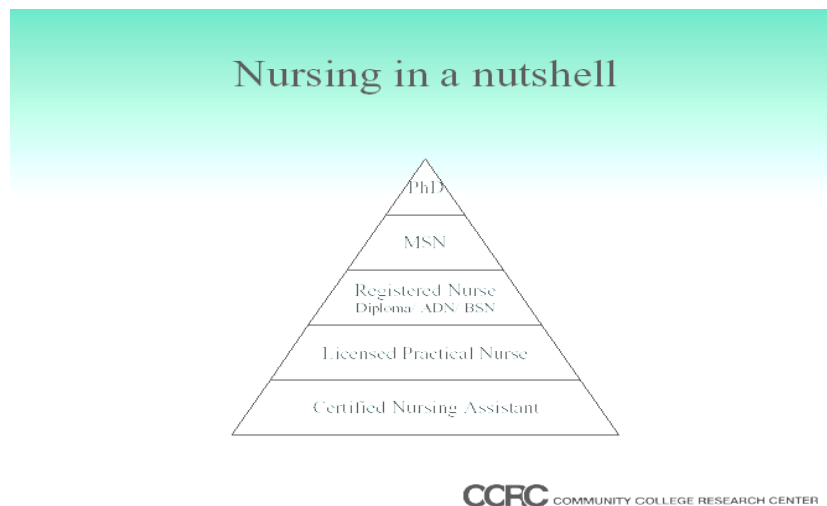


Figure 1: Nursing Levels by Education

Source: Reprint permission granted by Karp, Melinda Mechur (2002, November 6).

Nursing: The push for professionalization and equity. Presentation at Nursing Programs in Community Colleges: Equity, Access, and Workforce Development, CCRC Seminar Series, New York. (Appendix I)

Registered nurses (RNs) obtain education that qualifies them to practice nursing in several ways: (a) through baccalaureate programs, usually associated with universities, (b) through Associate degree in nursing (ADN) programs, usually associated with community colleges and, albeit, rarely, (c) through diploma schools of nursing. “Since 1980, there has been a significant decline in the number of diploma nursing programs based in hospitals” (Butters, 2004, p. 3).

In its policy statement, *Associate Degree Nursing Response to Nursing Shortage*, the National Organization for Associate Degree Nursing (N-OADN, 2001) asserted the following:

Associate degree nursing programs, which exist primarily within the community college system of education, have been and continue to be a strong resource for providing new graduates for RN licensure. Community colleges provide the advantage of being geographically and financially accessible to a broad diversity of students, who plan to stay in their own communities to practice after graduation. (para. 2)

The N-OADN added to its policy statement the following narrative:

Associate degree programs provide a sound foundation for the delivery of safe client care in the current complex health care delivery system. The programs are a reasonable investment of time and money for the student, allowing for licensure and employment in two years from the time of admission to the nursing program. Evidence of this can be seen by: the number of students who seek associate degrees in nursing; the strong passage rate on the NCLEX-RN exam by associate degree nursing graduates, which exceeds or equals that of other graduates; and the success of the associate degree graduates in nursing practice (para. 6).

The Associate Degree in Nursing (ADN) is typically a five-semester program offered primarily through two-year and community colleges, which prepares nursing students to take the NCLEX-RN. Upon graduation, ADN students take the NCLEX-RN state licensing examination. ADN programs, provided by community colleges in Florida, have worked diligently to increase their program effectiveness (e.g., increased retention rate, decreased attrition, and/or higher passing rate on national licensure examinations) in view of the critical nursing shortage being experienced both statewide and nationally (Mahaffey, E., 2002). ADN graduates who complete their study within the FCCS have

been reported to have a higher pass rate than those students who complete their Bachelor of Science in Nursing (BSN) degree requirements at a university (Armstrong, 2002). ADN graduates work with all the responsibilities and abilities of the registered nurse (RN), within the purvey of the Florida Nurse Practice Act, which can be found in Chapter 464 of the 2002 Florida statutes.

The Practical Nurse Program (PNP), a 13-month Licensed Practical Nurse (LPN) program, is not offered at many of the community colleges in Florida. Graduates of the PNP typically work as LPNs after they have passed the NCLEX-LPN exam. Their duties include data collection, such as blood pressure and temperature checks without analysis or assessment of the data. The Florida Nurse Practice Act prevents PNP graduates from performing patient assessments or providing complicated patient instruction. These individuals cannot develop plans of care or direct any other nursing staff. They may follow orders, as authorized by physicians and RNs, and they may administer medications. LPNs cannot, however, perform complicated intravenous procedures (IVs).

Registered nurses enter the workforce as graduates with a Bachelor of Science in Nursing (BSN) degree. Students who complete a state-approved ADN program may subsequently take BSN courses at a university. Certifications, which represent a mechanism for RNs to distinguish themselves as specialists in their particular field (e. g., obstetrics, pediatrics, oncology) are provided through private organizations and are more available to BSN nurses. Some certifications require that the prospective applicant complete a BSN degree before attempting to complete the certification testing process.

Graduate education in nursing is offered in specialties of administration or leadership, research, education and practice areas, including Advanced Registered Nurse

Practitioner (ARNP) or clinical specialist. Since 2001, the ARNP must be nationally certified but is able to act as a provider of care who assesses, medically diagnoses, and treats patients under a supervising physician. The Ph.D. in nursing is also offered at universities. Steefel (2005, May 9) reported that “88 percent of the nation’s 70 existing doctoral programs in the U.S. award Ph.Ds.” There is increasing interest in providing a practice doctoral level degree for ARNPs called a Doctor of Nursing Practice (DNP). Ann O’Sullivan, president of the National Organization of Nurse Practitioner Faculties (NONPF) described the DNP as a practice degree that “prepares graduates to assume full leadership roles in clinical practice, clinical teaching, and action research.” (Steefel, 2005)

The RN is a title used for the Associate degree or Bachelor degree nurse but is also used for advanced level nurses. However, there are various educational backgrounds and practice guidelines for each. Associate level nurses may choose a career in caring for patients at that level or advance in education and responsibility through completion of the doctorate degree.

Uniqueness of the Nursing Student Within the FCCS

The community college was created to provide secondary education to the community members in a convenient location, with lower fees and more open-access than in baccalaureate programs at universities. Community colleges provide technical training, job skill training, learning enrichment, and certificate programs as well as preparatory courses for baccalaureate education in the form of an Associate of Arts degree. According to the American Association of Community Colleges (AACC, 2001),

46 percent of all undergraduates in the United States were enrolled in two-year institutions. Associate of Science degrees are offered at community colleges primarily in healthcare.

Age of Community College Students

The average community college student is older than a student attending university. According to the U.S. Department of Education, National Center for Educational Statistics (2002), 38.5 percent of the students in applied fields of Associate degree students were over 24 years of age. The average age of a graduate Associate degree nurse, according to the NOADN data, is 33.2 years, and for baccalaureate graduates the average age at graduation is 27.5 years (NOADN, 2000). According to Tinto (1993), age can be a negative influence on retention because the older student's commitment to other obligations may be equal to or greater than the student's commitment to college. Moreover, Tinto noted that "commitment to college is influenced by the commitment to work" (p. 77).

Career Goals

The ADN graduate has unique career goals. The LPN graduates, usually from a technical college, with potential earnings of \$10 to \$15.00 per hour. By contrast, the ADN graduate earns \$38,114 per year on average. The ADN graduate will have met competitive admission requirements and will have successfully taken more difficult courses—e. g., mathematics and sciences, including anatomy and physiology, psychology, and microbiology. The baccalaureate nurse will earn approximately the same as the ADN, \$40,343 per year. On average, male RNs earn slightly more at

\$46,629, but make up only 7.5 percent of the ADN graduates and 6 percent of the BSN graduates (NCES, 1999). The RN has more responsibility and will be the delegator of care. Delegates of the RN include the LPN and nurse aides.

Educational Goals

The ADN student, in 45 percent of the cases, will seek to attain the Associate degree to learn job skills. Some 37 percent will plan to go on to a four-year institution (U.S. Department of Education, 2002). About two-thirds of the Associate degree students attend part time (Horn, L., Peter, K., and Maglioni, K., 2002). This is significant because prerequisite courses can be taken slowly, one per semester if the student desires. When the student is selected for admission in to the nursing program, the courses must be taken together, sometimes three or four courses at a time. Thus, students may experience stress associated with need to perform academically, work and home obligations, and time management. Regarding recruiting adult students who take one course at a time, Tinto recommended that the institution provide them proactive intervention, assessment and appropriate learning centers (1993). Astin (1985) recommended including students in formation of individualized learning plans.

Obligations

The Community College Survey of Student Engagement (CCSSE, 2004) reported that 60 percent of two-year college students work more than 20 hours per week. Moreover, study findings were that approximately 33 percent have families with children who depend on them.

Ethnicity

Graduates of ADN program tend to be more ethnically diverse than those who graduate from other nursing programs. According to HRSA data from 2000, as reported in the NOADN Web site, Caucasians make up 85 percent of the general national RN workforce. The ADN graduate RN population is 75 percent Caucasian, 13 percent African American, and 7 percent Asian. The general population of the RN workforce is 5 percent African American and 4 percent are Asian.

The community college student is older and has career and family obligations, attends college part time, and typically experiences a prolonged time to graduation. The educational goal of the community college student may be certification or an Associate degree.

First Generation

Terenzini, Springer, Yaeger, Pascarella, and Nora (1996) researched first generation students who were likely to attend community colleges and found that these students were less academically prepared and less aware of the requirements of the college. Additionally, these students were often from poor families. Financial constraints were tighter for them than for those students who had parents with college degrees. The students from poorer families had other constraints involving transportation and childcare, were more likely to enter community colleges than universities, and had specific and unique needs.

Recruitment, Retention, and Attrition in Associate Degree in Nursing (ADN) Programs

Recruitment

Community colleges offer access to higher education that is not possible in the highly selective environment associated with four-year colleges and universities (Bryant, 2001). Recruiting the most viable candidates is of utmost importance in terms of planning for successful retention. In December 2004, the National League of Nursing (NLN) published a report that 125,037 qualified students were denied admission to nursing programs because of lack of space or faculty.

Tinto, reporting on the American College Testing Program in 1983, 1986, 1990, 1992, noted that colleges requiring a higher score on the Scholastic Achievement Test (SAT) had higher retention rates (Tinto, 1993). The range of students retained through graduation can be from 38.2 percent to 66.2 percent. Therefore, careful recruitment appears to have an effect on retention.

In general, research on attrition of students has been plentiful. Specifically, this research focused on retention practices for ADN students within the FCCS. Before this research effort, Stickney studied retention related to licensed practical nursing students (LPNs). The LPN student is required to have met the same rigorous admission standards as the ADN student; however, the LPN student will have a career goal different from that of the ADN student. As part of a comprehensive retention program to combat high LPN student attrition, Stickney (2002) recommended that community colleges implement program entry strategies, including, but not limited to, the following summary of her responses:

1. More stringent criteria for admission.
2. Survey of pre-entry conditions or variables (individual attributes, skills, life challenges, responsibilities, prerequisite GPA, grades, test scores) that students bring with them upon entry into the program.
3. Recruitment of the most qualified applicants.

The unique learner profile of the community college student may cause the admission committee to find a way to select the most qualified students for the limited access nursing program. The manner in which recruitment occurs can affect the type of student who applies. Moreover, if a nursing program recruits older nurse assistants, the application pool will be different from recruiting pools at high schools. The nurse assistants may have long-term goals different from those of high school students and may have different aptitudes.

Retention

“The first issue in understanding student retention for community colleges is to establish a common definition of student retention for community colleges” (Wild & Ebbers, 2002, p. 505). Community colleges currently train and/or graduate 60 to 70 percent of the nation’s nurses (Armstrong, 2002; Davis, 2002). Pederson (2001) advised that “[I]t was an equally serious nursing shortage in the early 1950s, in fact, that spurred the rapid introduction of Associate’s Degree in Nursing (ADN) programs and the eventual emergence of the community college as the nation’s principal source of nurses.” Retention of students in community colleges, while important in general, resonates with

importance relative to the community college's ability to mitigate the nursing shortage in the United States.

Andreu (2002) observed that research designed to document retention in the community college setting is often problematic. "Experts recognize that the powerful models and research at the university level need to be adapted to community colleges" (Wild & Ebbers, 2002, p. 508). Giving definition and specificity to those variables that are related to retention and to a model that is appropriate for the community college setting can prove challenging, as "the common definitions employed today in academia were developed for retention considerations in university settings" (Wild & Ebber, 2002, p. 505). To effectively identify statewide retention statistics, an operational definition must be determined for the two descriptors: nursing student and retention rate. It is important to standardize *who* is actually counted as a nursing student so that the resulting *retention rate* is uniform for comparative purposes.

In the community college, nursing programs are limited-access programs, meaning that students must meet criteria for entrance, including completion of prerequisite courses, attainment of a specific grade point average, and, in some nursing programs, reaching a certain grade on an entrance examination. When prerequisites are completed, the prospective student may then apply to the nursing program. A student cannot enroll in any nursing courses until the program director or admission committee has accepted him/her into the actual nursing program. Students may say that they are nursing students when their intention is to take prerequisites, but they have not yet taken them or any nursing courses. In ascertaining program retention rates, statistics should be clear, then, in capturing only those students who have actually been accepted into the

nursing program. Those students who have not been accepted in the nursing program are truly "pre-nursing students." The nursing applicant who is accepted into the limited-access program will receive permission to enroll in the initial and subsequent nursing courses, which holds true for all health science professions.

When asked to identify source data regarding student retention in ADN programs at Florida community colleges, Dr. Patricia Windham, Director of the Office of Educational Effectiveness and Research, responded as follows:

The information contained in the community college Student Data Base may provide the data needed to track students in our nursing programs. I say, "may," because determining who is actually officially enrolled in a nursing program versus someone trying to enroll in these programs is not easy. (personal communication, August 28, 2004)

At one community college in the FCCS, the institution has collected data from all students who indicate nursing as a major, and has a retention rate of 56 percent. However, when pre-nursing students are removed from the frequency counts, the retention increases substantively to 88 percent. Windham calculated that Florida's average community college Associate degree nursing program retention rate is 79.1 percent with a range of 59.8 to 92.6 percent (2004). These data were collected on the premise that the students complete the two-year program within three years. Given the pending critical nursing shortage, and current rejection of qualified students, it is reasonable to conclude that retention of existing students should be even higher.

Attrition

Factors that affect student attrition include, but are not limited to gender, age, work, and family, varying educational goals, personal and academic obstacles, and student-faculty relationship (Andreu, 2002). A study of 694 nursing students over a four-year period between 1989 and 1993, (Ehrenfeld., Rotenberg, Sharon, & Bergman, 1997) reported these variables for attrition: male gender, no army service, low English pre-admission grade, low first-year GPA, low second-year GPA. Some personal reasons cited were family problems, student dissatisfaction, health problems, change of profession, low image of nursing, and change of residence.

Based on an empirical study of factors that affect persistence among nursing students at community colleges, Stineman (2004) suggested areas of further research:

1. Identifying if the type of perceived support that students need changes as they progress through their nursing program;
2. Developing methods and specific strategies that will more adequately assess and identify at-risk students at commuter institutions and assist these students to be successful.

In another study of factors affecting attrition of licensed practical nurse (LPN) students, Stickney (2002) reported statistically significant differences between the retained and attrition student groups for the variables of race, pre-admission test scores, and prerequisite courses grades. During nursing program matriculation, Stickney also recommended that community colleges afford a multiplicity of opportunities to the practical nursing student. Suggested strategies are summarized as follows:

1. Orientation sessions to advise prospective students of available assistance.
2. Collection of data on student program entry problems.
3. Exposure of prospective students to the many roles of the nurse; possibly “job shadowing.”
4. Supplemental study skill sessions.
5. Student support groups.
6. Financial support available.
7. Childcare services on campus.
8. Prerequisites to be taken only one time.
9. Counseling students to discover their learning styles.

Associate degree nursing programs that are located in community colleges have demographics similar to those of the community they serve. The nursing programs tend to serve students who are older than the traditional student, are married, have families, and may have had previous careers. These differences may provoke creative thinking regarding preventing attrition, which is associated with intrinsic and extrinsic factors that are not necessarily controllable by the nursing program administration.

The Florida Community College System

In describing the Florida Community College System (FCCS), Wattenbarger and Albertson (2000) asserted the following:

[It] . . . has continued to evolve as the state’s most effective and efficient educational delivery system. The mission of Florida’s Community College

System has also continued to evolve far beyond the vision of providing the first two years (two-plus-two) of the baccalaureate degree. The system provides over 750 Associate in arts and Associate in science degrees, and almost 500 certificate programs of varying lengths. It is a national model for the articulation agreement with the state's universities which provides that all community college Associate in arts degree graduates can enter a state university at the junior level.

Regionally, Florida is ranked among eight of the 10 fastest-growing states that have experienced a proportional decline in the number of RNs (Viterito & Teich, 2002). As of July 2001, Florida had 169,527 licensed RNs, nearly ten percent fewer registered nurses than the state had in 1995 (Florida Hospital Association, 2001). Florida has the highest percentage of elderly in the nation, but it ranks thirty-first in the number of RNs per 100,000 people (a Florida Hospital Association study, as cited in Armstrong, 2002).

Florida's Profile

Florida, Texas, and California enroll over one-third of all community college students in America (Bailey & Morest, 2003). Windham (n. d.) described the Florida Community College System (FCCS) as follows:

The public community college system of Florida is made up of twenty-eight institutions with over 90 main campuses or centers and course offerings at over 2,000 off-campus sites. This vast array of locations brings the first two years of postsecondary education within commuting distance of 99 percent of the state's population. The institutions are under the direct control of local Boards of Trustees

with system-wise coordination provided by the State Board of Community Colleges located in Tallahassee. (para. 1)

The FCCS is considered a model community college system in the United States. Nine of the top twenty producers of Associate degrees in the nation are Florida community colleges. Specific to nursing, Hillsborough Community College (Florida) is the fourth-largest producer of nurses in the nation (Kumar & Ulferts, 2003). Despite this statistic, Hamilton (2001) reported that there are currently 9,000 vacant nursing positions in Florida, and there will be a need for 34,000 more nurses by 2006, reflecting an 18 percent vacancy rate. *Enterprise Florida* (n. d.) added the following:

Florida ranks fourth in the nation in total community college enrollment, with over 300,000 students enrolled in a given year. Of this, about 15,000 Florida students are enrolled in information technology programs to earn Associate in science degrees and college credit certifications. Florida's community college system accounts for almost one in 10 of the degrees conferred in the United States each year, ranking third in the nation. 45,000 Associate degrees and over 10,000 technical certificates are awarded to Florida residents each year.

In addressing the nursing faculty shortage in Florida, J. David Armstrong, Jr., (2002), Chancellor of the FCCS, remarked that “there is a shortage of faculty trained at the Master’s degree level.” Even so, Florida is leading the way in nursing education. Armstrong also asserted the following:

- Twenty-six of 28 Florida community colleges offer Registered Nurse [RN]

- programs.
- Of these 26 programs, four [Miami-Dade Community College, Broward Community College, Florida Community College at Jacksonville, St. Petersburg College [*listing based on rank order*]] are nationally ranked in the top ten for enrollment.
 - Florida community colleges graduated 2,644 nursing students with ADN degrees in 2001-2002. This number represented two-thirds of all professional nursing graduates in Florida for that academic year.

This study aims to add to the body of literature on FCCS ADN programs by examining of archival data and collecting empirical data on the *best practices* influencing the retention and program completion rates for nursing students.

Theoretical Framework

This mixed-methods research of community college student retention was grounded in many theories; those theories, in many instances, are founded on studies that included students in university settings. Several studies (Pascarella, et al., 2004; Pascarella & Terenzini, 1978; Terenzini & Pascarella, 1977) suggested that students who integrate socially and intellectually with their college of affiliation stay at the college and are less likely to voluntarily leave. According to Wild and Ebber (2002), “The theoretical institutional models that are best known and accepted are Tinto’s (1975) work regarding academic and social integration and Astin’s (1977) study of involvement” (p. 506).

Tinto asserted that a student’s sense of engagement is related to social

interaction with peer groups and faculty and that integration into the institution depends on incongruence and isolation. In isolation, there is no interaction; in incongruence, there is a conflict with self-concept and the conceptual framework of others (Tinto, 1987).

Astin (1977) theorized that persistence or retention of students in college is a matter of involvement in the school and school activities. He further described this involvement as interactions in the classroom, as well as interactions with faculty and fellow students outside the classroom. Bandura's social-cognitive theory (1977) can also be associated with learning at the community college level. This theory postulates that learning is a three-way interaction involving the environment, personal factors, and behavior, with learning based on modeling.

Self-efficacy is also inextricably intertwined with learning. This aspect of the student fulfilling his/her own personal goals must be considered when examining retention factors. At the community college, the nursing student typically has a goal of attaining qualifications or certificate or degree completion to become an identifiable professional—for example, a registered nurse. In this case, social interaction and engagement with faculty are important in formulating and solidifying the student's confidence in goal attainment.

The theoretical framework for this study includes retention theory in association with student interaction and an influence of intrinsic factors from self-efficacy theory. The community college student must have a personal belief, family support, and a sense of belonging and friendship, or support from the students and faculty at the institution.

This study examines interaction and intrinsic belief factors through survey of directors of Associate degree nursing programs, their faculty and their students.

Summary

The review of literature highlighted the potential registered nurse shortage that will ultimately affect healthcare in the United States. Community colleges graduate the majority of registered nurses through the ADN program. Retention of students within these nursing programs is likely to have a direct impact on whether or not healthcare standards are maintained through the projected nursing shortfall. Undoubtedly, student qualifications and other intrinsic and extrinsic factors affect retention rates. Tracking can help to identify at-risk nursing students with particular attention to reduction in attrition rates.

Using the theories of Tinto, Astin, and Bandura, this study sought to identify those attributes of nursing programs, as identified by administrations, faculty, and students, which will aid retention of nursing students in the Associate degree programs. This research investigated best practices for retention of nursing students identified by ADN program directors and faculty within the FCCS. Appropriately, graduating nursing students were studied in-depth through both surveys and focus group interviews, which encouraged self-disclosure from the recipients of the perceived best practices. From this extensive combination of research methods, a list of *best practices* for student nurse retention was identified.

CHAPTER THREE

METHODOLOGY

This study used a mixed-methods research design to identify *best practice* retention strategies of students in Associate Degree Nursing (ADN) programs in the Florida Community College System (FCCS). Such an approach is used when pragmatic or pluralistic information is required (Creswell, 2003). This research used qualitative methods with quantitative survey methodology embedded in the qualitative research. Methods of recruiting and tracking student progress through the program are components of retention and were studied as part of this investigation.

Mixed method research is used to “examine multiple approaches” to decrease the risk of biases “inherent in any single method [that] could neutralize or cancel the biases of other methods (Creswell, 2003, p. 15). This study employed the Delphi process, faculty and student surveys, and student focus groups within selected ADN programs in the FCCS.

Before data collection for the major findings reported in this dissertation, a pilot study was performed for the Delphi process. The pilot tested the feasibility of this type of research with the directors of nursing in the ADNs in the FCCS. Additionally, the pilot study helped to establish the validity and reliability of the research process and planned instrumentation. Following completion of the pilot study, the Delphi process was used with the target sample. Research from that group yielded a list of responses, which were used as a template for faculty and student survey data.

Research Questions

To follow is the overarching research question: *What are the perceived best practice retention methods in Associate degree nursing programs in the Florida Community College System?* Inherent in this question are the questions of recruitment and tracking of nursing students. Recruitment of those who are most likely to be successful will probably affect retention rates. Congruence in student feelings of self-efficacy and college atmosphere relate to retention (Tinto, 2002; Astin, 1977). Secondary research questions include the following:

1. Using a *Delphi technique* methodology, what are the best practice retention methods for ADN students, according to coordinators and directors in the FCCS?
2. Using survey response methodology, what are the best practice retention methods for ADN nursing students, according to participating ADN program faculty in the FCCS?
3. Based on survey response methodology and focus groups, what are the *best practice* retention methods for ADN students, according to participating successful ADN graduates?

These research questions are rooted in a framework comprised of theories from Tinto, Bandura, and Astin. The questions sought to identify the best practices of the individual nursing program or institution that have contributed to student retention. According to Tinto and Astin, retention is based on relationships built between students and students or faculty and students that have led to a sense of engagement for the

student. Bandura spoke of one's intrinsic self-efficacy and of behavioral and environmental factors--student finances and other school obligations. Tinto and Astin theorized that these obligations are negative influences on retention.

Data Sources

Primary sources of data were nursing administrators, nursing faculty, and graduating (successful) students from a purposive sample within the 28-member community colleges in the FCCS. Faculty participants in this research were full-time nursing instructors selected by program directors who participated in this study. No other criteria were required other than full-time status for faculty. Directors of nursing programs were also asked to provide successful students of varied ethnic backgrounds and ages to participate in the student surveys and focus groups.

Introduction of the Study to the Director Population

Periodically, nursing administrators (Deans and Directors) who work in the FCCS agree to meet at various locations throughout the state of Florida. The concept of this research and specifics of the Delphi process were introduced at a meeting of FCCS nursing administrators in January 2005 to all those who attended (26 members). Advised of the purpose of the study, directors were told that they might be asked to participate in this study. The amount of required interaction with the researcher was also described.

Delphi Population

Participants in the pilot and the actual study were directors and coordinators of Associate degree nursing programs in the FCCS. Both cohorts were considered experts

in their field and, as such, would be able to identify best practices for student retention in Associate degree nursing programs.

Research Sample

Participants in the Delphi were directors, coordinators, faculty, and graduating Associate degree nursing students within the FCCS. The sample portion of the Delphi consisted of members of the participating community college nursing directors in the FCCS (N=26). These directors were used to identify the sampling frame. Directors of Associate degree nursing programs in the FCCS were contacted by phone to request their participation in the Delphi process in rank order, according to the retention rate as defined by the Florida Department of Educational Effectiveness and Research. These retention rates were defined as the number of nursing students who took the first nursing course after being accepted into the limited-access program and completed the program, or graduated within three years.

Dr. Patricia Windham, Director of the Department of Educational Effectiveness and Research for the state of Florida (Appendix A), was contacted to determine if a list of ADN student retention statistics existed. Retention for ADN programs in the FCCS was definable in terms of course numbers. They were used to define beginning and ending courses in the Associate degree nursing programs. Students enrolled in beginning courses (Introduction or Fundamentals of Nursing) in 2000 and were in the final courses (Advanced Medical Surgical, Practicum or Preceptorship) by 2003 were considered successful. Retention rates were found to vary from 59 percent to 93 percent, with an average of 79.1 percent.

The purposive sample for the pilot study included those ADN programs with less than 79.1 percent retention rates. Since this research focused on successful students and nursing programs, the ADN programs with higher retention rates were reserved for the actual study.

Instrumentation

Four instruments used in this research: Delphi Survey, faculty survey, student survey, and student focus groups. This mixed-methods research used the concept of extensiveness, which strengthened the results as they were derived from multiple levels (Krueger, 2000). Frequency counts were measured and rated according to mean and mode as well as percentage of responses that were positive. Krueger also noted that frequency in combination with extensiveness gives strength to collected responses. The responses were compiled and analyzed to discover convergence in perceived best practices for student nurse retention.

The Delphi survey

Using the rationale espoused by Glass and Oakley (2003), the Delphi technique was used as one of the research methods in this study for several reasons:

- The problem at hand [does] not lend itself to quantitative, inferential statistical analysis, but rather [is] a problem that can benefit from the subjective reasoning of a group of experts.
- These experts [come] from a variety of backgrounds, serve a variety of community colleges, and [have] no ready forum available for such discussion.
- The group size would [be] unwieldy for face-to-face discussions.

- There would [be] considerable expense in travel and accommodation necessary to bring this group to one location.
- Finally, the heterogeneity of the group participants need[s] to be preserved to assure the validity of the results.

The researcher's professional preparedness to use the Delphi process was limited to Master's and doctoral level courses in qualitative and quantitative research. In these courses, the Delphi process was critiqued, but never implemented. The responses from the Delphi process were to be listed as preferred best practices for student retention.

The Delphi survey was developed with guiding questions, which included the expert director of nursing's concept of *best practice* in tracking and recruiting nursing students. Responses pertaining to these constructs were included to stimulate creative thinking in responding to the main question of retention of nursing students.

The Delphi survey was similar to the piloted Delphi survey. The Delphi survey was tested for clarity and understandability during the pilot. Responses were validated through use of the purposive sample of expert participants (ADN directors and coordinators in the FCCS).

The Delphi survey was distributed by email to directors in the participating ADN programs in the FCCS. Responses were received by email. The data received were conceptualized as a substantial list for rating by faculty and successful nursing students.

Faculty survey

The faculty survey used a Likert scale for agreeing or disagreeing with each of the practices selected by the directors of nursing in the participating program. A Likert scale

is an instrument used to assign a numeric score to declarative statements (Polit, Beck, 2006). In this research, the attributes were statements of practices labeled *best practices* for nursing student retention by directors of nursing participating in this study. The survey was constructed from the Delphi responses that were listed. The participating faculty member was asked to rate the practice, agreeing or disagreeing that the item in question was a *best practice* for ADN student retention (Appendix D).

The researcher's experience with creating, distributing, and analyzing the Likert scale surveys is limited to student satisfaction surveys and classroom work in masters and doctoral programs. The survey was strengthened by the items that were developed from the directors' expert responses to the question of student retention measures. The directors of nursing who put them in faculty mailboxes distributed these surveys. A self-addressed stamped envelope was inserted in the survey envelope for the faculty to return the survey to the researcher.

Statistics collected from this survey were frequency counts, means, and modes. The responses were then rank-ordered from highest to lowest according to means and modes. Demographics were also collected on the participating faculty.

Student survey

The student survey (Appendix E) was created from the same responses as the faculty survey. Having a consistent survey with similar survey items based on the expert responses of the Delphi process supported the strength of the research. The students were given the survey to complete when they attended the focus group. They were given time to complete the survey and asked to place it in a brown envelope on a table away from

the researcher to assure confidentiality. Demographic data were also collected on the students including age, ethnicity, and gender.

Interview guide for student focus groups

Qualitative data from focus groups were then analyzed in an attempt to identify the “essence” of the experience of students graduating from the ADN program. Focus groups are helpful when these situations or circumstances exist (Krueger, 2000):

1. The purpose is to uncover factors that influence opinions.
2. The researcher wants ideas to emerge from the group.
3. The researcher is looking for the range of ideas or feelings that people have about something.

Successful, graduating students were invited by their directors of nursing to participate in a focus group to reflect and share their concept of what retention efforts were most helpful in their education. Comments from students in the focus groups were an integral component of study findings that aided data triangulation to seek convergence or reveal disparities in perceptions. Creswell (2003) advised that the principle of extensiveness should be followed in analyzing multiple levels of data.

Although the researcher’s experience working with focus groups has been limited to professional activities and classroom work rather than organized research, the interview guide helped to maintain consistency and organization during the research.

Pilot Delphi

The Delphi technique was piloted before the actual collection of reported data. Piloting the instrument helped to support content validity and reliability of the survey results on retention of Associate degree nursing students in the FCCS. As the Delphi process involves considerable thought and time, expertise was required in earning the trust of participants and nurturing thoughtful responses from them. The pilot allowed the researcher to gain experience and insight into administration of the subsequent Delphi survey. The piloted survey only included the Delphi responses from the directors of nursing in programs participating in the pilot. Pilot participation exempted the director and their program from the actual research.

Pilot Sample

The researcher identified and selected institutions to be included in the pilot study, which were different from those of the actual study. Criteria for the pilot were the following.

1. Selected nursing programs had a relationship or routine interaction with the researcher. Having a relationship may have led to a conflict of interest or a creation of what would look best rather than an anonymous response, especially at the faculty and student survey level.
2. The calculated retention rate was found to be less than 79.1 percent.

Fourteen ADN programs within the FCCS had calculated retention rates less than 79.1 percent. Of those 14 programs, four directors of nursing were willing to participate in the pilot study. Eight agreed when asked by phone; four actually participated. The

Informed Consent form was emailed to the participants (Appendix B), and four forms were returned to the researcher by FAX or postal mail. When these forms were received, Round One was sent by email to the participants.

Table 1: Pilot Delphi Participant Demographic Characteristics.

	Range	Median	Mean	Mode	SD
Age of Participant	58-63	60.5	60.0	58, 63	
Years of experience In higher education	12-24	23.5	20.8	24.0	5.9
Years of experience In community college	12-24	18.0	19.0	N/A	9.6
Years of experience In this nursing program	12-24	18.0	19.0	N/A	9.6
Number of students In the program	36-156	118.0	107.0	N/A	54.9
Years the school has offered nursing ed	4-24	23.0	18.8	N/A	

Pilot Round One

Nursing program coordinators or directors in the FCCS (N=4) were asked to complete a participant profile (Appendix F). This round was a request for demographic information. The demographics of the pilot participants (N=4) are listed in Table 1. All participants in the actual research and in the pilot study were Caucasian and female. Of the pilot participants, 50 percent (N=2) had doctoral-level preparation, and 50 percent (N=2) had master’s level preparation. Three of the participating programs were located in areas with populations less than 100,000; one, in an area of greater than 100,000. The first three research queries were given to individual participants when the demographic and Informed Consent form was returned. The three research items were these:

1. Identify any methods that you use (or your institution uses) to recruit students to your program.

2. Identify any methods that you use (or institution uses) to track students in your program.
3. Identify any methods that you use (or your institution uses) to retain nursing students in your program.

The participants were asked to respond within two weeks. At two weeks, one had not responded but did respond immediately after a reminder. All four responded with lists of *best practices* for nurse student retention to each guiding question.

Pilot Round Two

The informants (N=4) were asked to verify previous responses sent to the researcher to ensure that the information received was what was intended. They were asked to respond within two weeks. All responded within two days. The result was that no changes were made in the responses at this point.

Pilot Round Three

The same informants (N=4) were asked to agree or disagree with each item that was their part of their aggregate concept of *best practice* whether or not they used that strategy within their program. All of the items received from Round Two were consolidated to form one list. The items were listed as the researcher in Round Two received them. The results of this list would form the statements of strategies for a faculty survey if this were the actual study. Round Three was completed two weeks after Round Two ended. The Delphi process associated with the pilot study was discontinued at that time.

Delphi Study

Because this research was focused on identification of best practices for retention in ADN programs, those with higher retention rates were preferred as participants for the study. Associate degree nursing programs with retention rates higher than the average (79.1 percent) were targeted as potential respondents for this purposive sample. Fourteen programs had retention rates greater than 79.1 percent. Eight of these program directors agreed to participate in this Delphi process. Six signed the consent form and participated in the study to completion. These participants were a separate subset of the population from the participants in the pilot study.

Delphi Round One

Round One began after the researcher received the Informed Consent form. The demographics of the participant were requested. They are in Table 2. Five of the six were female; one was male. All were Caucasian. All listed the Master's as the highest degree attained. Three participating nursing programs were geographically located in areas of population less than 100,000; three, in areas with populations greater than 100,000.

Table 2: Delphi Participant Demographic Characteristics.

	Range	Median	Mode	Mean	SD
Age of Participant	42-58	55	55	53.5	5.8
Years of experience in Higher Education	9-31	23	N/A	21.8	7.9
Years of community College Experience	9-31	23	N/A	21.8	7.9
Associate Degree Nursing Program Experience	9-31	23	N/A	21.8	7.9
Annual Number of Students	100-600	260	N/A	285.0	8.4
Years the Community College Has Offered Nursing Education	4-24	23	N/A	18.8	9.9

Table 3: Geographical Locations of Participating Programs

	Pilot	Actual Research
Southwest Florida	1 (25%)	0
Southeast Florida	0	2 (33%)
Central Florida	2 (50%)	2 (33%)
Northwest Florida	1 (25%)	1 (17%)
Northeast Florida	0	1 (17%)

When the demographic form was received, Round One was e-mailed to the participant with a request to respond within two weeks. Since the purpose of this portion of the study was to discover best practice nursing student retention methods, Round One requested administrative perceptions about prevailing methods by which ADN programs in the FCCS identify, recruit, track, and/or retain nursing students.

Participants in the Delphi were asked to provide ideas in response to this query: *What are the best practice retention methods for producing Associate degree in nursing graduates in the Florida Community College System?* Questions of best practice recruitment and tracking at the institution and individual level were guiding questions to increase the depth and creativity of responses. Specifically, in Round One of the Delphi process, participants were asked to respond to the following item:

1. Identify any methods that you use (or your institution uses) to recruit students to your program.
2. Identify any methods that you use (or institution uses) to track students in your program.
3. Identify any methods that you use (or your institution uses to retain nursing students in your program.

These items enabled the researcher to identify attachment factors, and environmental and personal conflicts with retention, as theorized by Astin and Bandura, respectively. Moreover, Tinto's attrition factors— isolation and congruence supported investigation of student selection, student desires and abilities and student relationship-building while in the ADN program.

Delphi Round Two

The participants were asked to confirm their responses from Round One. Participants were asked to respond within two weeks of receiving this email. They made no changes to the initial responses, indicating that the initial responses were exactly what they intended them to be. The confirmations were received within two days.

Delphi Round Three

The four sets of responses were consolidated to form one list, and the participants were asked to identify the most important retention factors whether or not their school used them. The iterative process reduced the list of responses by asking participants to identify only those methods that were perceived *best practices* whether or not their school used them. This study continued with the faculty and graduating student survey along with graduating student focus groups.

Survey Participation

The purpose of the survey was to examine the *best practices* for student nurse retention as perceived by the faculty and by successful graduating students in the programs participating in this research. The faculty and student surveys were based entirely on the responses received from the directors responding to the Delphi process. The Delphi process from directors of FCCS Associate degree nursing programs sought to identify perceived *best practices* in retention of their nursing students in their programs. This list served as the template for the survey. To validate the faculty survey and ensure clarity in the questions and format, the survey was field-tested with faculty from nonparticipating nursing programs and laypersons. The student survey was field-tested in the same manner.

The faculty and student surveys were submitted to the University of Central Florida Institutional Review Board (UCF IRB) and approved (see Appendix G). The surveys were distributed to coordinators and faculty at the participating nursing programs. Distribution to the faculty was under the discretion of the director who distributed

surveys manually by putting them in the faculty or coordinator mailboxes. Sixty-eight faculty surveys were distributed to faculty members, and sixty faculty surveys were returned for an 88 percent response rate. The survey requested the faculty's or coordinator's perception of the best practices for student retention using the options selected by the directors (APPENDIX D).

Faculty Survey

Sixty faculty members answered the survey. The demographics of the faculty are as follows: the ages ranged from 33-67 years with a mean of 55.8, median of 56 and with no mode; all participants were female; eight were African American (14 percent); two were Asian/Pacific Islander (5 percent); eight labeled themselves "Other or Mixed" (14 percent); 70 percent were Caucasian. The number of years experience in the nursing program ranged from 2 to 38 with a mean of 14.5 years, a mode of 13 (3 members), and a median of 13.

Student Survey

The student survey (Appendix E) was distributed to twenty-six graduating students in the participating ADN programs. The directors of these programs were asked to identify students who were in the last semester of the nursing program, to choose students with varied backgrounds and ages, and to choose these students for participation in the survey and a focus group. A student was considered successful students for two reasons.

1. They were in their last semester and had successfully reached the point of being one to two months from graduating.

2. They were selected by their nursing program director to participate in the survey and would be participating in the focus group.

The survey was distributed immediately before convening the focus group. Twenty-six of the surveys were distributed, and all were completed and returned. The students who participated completed the survey and stayed for the focus group. Therefore, the students completing the surveys were the same students who participated in the focus groups.

Similar to the research of Butters (2004), the study's approach encompassed research regarding factors and strategies cited by a select group of community college students who had been successful in an ADN program. This portion of the research used those findings as presented by the Delphi process completed with nursing program coordinators and faculty. It provided an open-ended response section where a focus group of successful nursing students who have graduated or are graduating from the FCCS (*stayers, not leavers*) identified perceived factors that are integral to student nurse retention. This portion of the study aligns itself with the theory surrounding epistemological beliefs of community college students and their learning processes, where Schreiber and Shinn (2003), for example, observed that "understanding students' beliefs and learning processes has become an important component of academic achievement" (p. 707).

The demographics for the graduate participants are as follows. All students stated they had been in the program two years. The Associate degree nursing program in the FCCS is a two-year or two-and-a-half-year program, depending on the school and whether the students and faculty have the summers off. Of the twenty-six students, all

were Caucasian except one Pacific Islander and one African American. Three (11 percent) were male. The ages ranged from 20 to 57 years with a mean of 39.6 years, median of 39.5. No mode existed.

Focus Group Instrumentation

Richard Krueger (2000) suggested that focus group questions be easy to pose, clear, short, open ended, one-dimensional, and sequential. The protocol used for all interviews is included in Appendix H. After three focus groups, a pattern in student responses was discovered with apparent redundant themes emerging. Therefore, the sixth focus group would have been unnecessary (Krueger & Casey, 2000). Often with interview or focus group data collection, interview questions are changed based on previous responses. The responses received were so uniform that changes in the interview protocol were not needed during this research.

To organize the focus group, the researcher contacted program directors by telephone. The researcher requested that graduating students be gathered at a time and place convenient for them. The director was counseled to provide successful graduating or recently graduated students for this focus group and was advised of its purpose: to gather successful students' perception of nursing program best practices that aided ADN program completion. The directors invited the purposive sample of successful students and notified the researcher of the scheduled time and location. The researcher emailed and phoned the director the day before the intended focus group to confirm the date, time, and location.

The researcher met the students in each focus group in a classroom within the nursing program buildings. In each case, the graduating students arrived on time and for discussion of nursing student retention strategies. Two groups had seven students, one had five, and two had four. The ideal number of participants for academic focus groups is six to eight, but fewer participants can be sufficient (Krueger, 2000).

The researcher provided light refreshments, including fruit, sandwiches, and cookies to allow for a casual, relaxed atmosphere. Furniture was arranged to facilitate face-to-face interaction and to allow for snacking and movement. The focus groups were tape-recorded so this arrangement prevented any one person from being too far from the recorder. As the participants arrived, the researcher greeted them. Introductions were performed, and the participants were offered a beverage and a seat.

The researcher recorded field notes. Recording began when students began to arrive. The notes were completed immediately following each focus group. They consisted of verbal descriptions of the building, classroom used, table arrangement, people involved, reception, and organization of the focus group.

The Informed Consent form was distributed first (Appendix C). The participants were asked to complete the written Informed Consent and to place it in a folder at the end of an adjacent table, which assured participant confidentiality. The participants were further advised that confidentiality would be maintained so that they would feel free to engage in the discussion. The graduates placed their signed consent in the folder on the adjacent table and they were then asked to complete the student survey (Appendix E). They were instructed to place the completed survey in the folder with the consent forms.

The focus group discussions commenced after all participants had arrived, signed the Informed Consent, completed the survey, and appeared relaxed. Krueger (2000) advised that the moderator show a caring nature regarding respondent participation and the topic at hand. The researcher has had eight years of experience working with nursing students as Coordinator of a large Associate degree nursing program and had informally discussed issues related to student retention during those eight years. Moreover, as interviewer, previously learned communication skills were used to create a calm, safe environment. Krueger (2000) recommended that focus groups begin with purposeful small talk to promote thinking about the topic, and that snacks be served to the participants.

When all were seated and ready to proceed, the participants were reminded that the discussion would be audio-recorded. Each focus group progressed in accordance with Krueger's pattern: welcome, overview, ground rules, and then the first question (Krueger). The researcher was also cognizant of avoiding biased responses such as "good" or "excellent" or vigorous head nodding and tried to maintain an encouraging mien. The focus group in each case lasted one hour and ten minutes.

Data Analysis

The purpose of this mixed-methods study was to discover perceived *best practices* for student retention in the FCCS Associate degree nursing programs. Retention also encompasses recruitment measures of students with the best potential. Tracking measures of nursing students help identify those who may require further assistance to retain them to graduation. Analysis of the data used a triangulation of

results from the Delphi process, faculty and student surveys, and student focus group transcriptions. This study is predominantly qualitative with nested quantitative survey data.

Faculty and student surveys were developed from the Delphi survey of ADN experts who were identified as directors of successful nursing programs in the FCCS having retention rates greater than the average of 79.1 percent. This survey was customized in language, but not in content for students and for faculty. Both faculty and student surveys were field-tested for clarity, reliability, and validity. From the Delphi process, expert respondents agreed upon 36 perceptions of *best practice*. The faculty survey results were compared with the general themes using triangulation methods and the study used a convergent nested model of analysis.

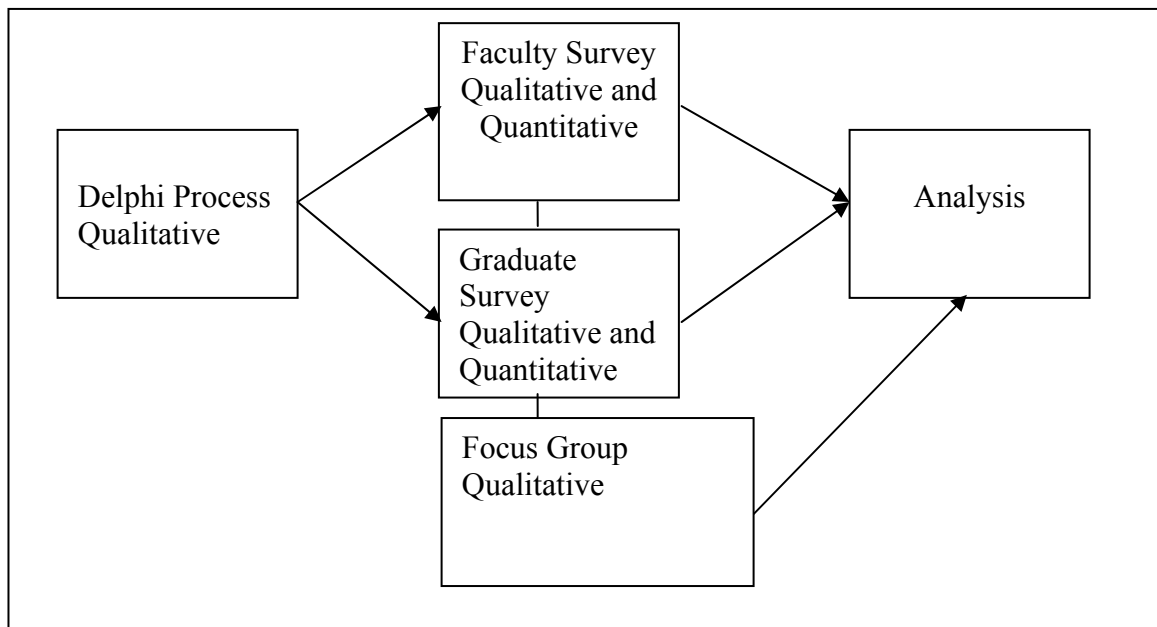


Figure 2 Diagram of the Data Analysis Process

Creswell (2003) recommended quantifying qualitative data in mixed method research. Triangulation of the data seeks to facilitate this convergence. In this study, codes were given to themes that emerged from each portion of the data collection. As the faculty and graduate surveys were completed, themes were compared with focus group themes in an effort to develop a list of perceived *best practice* strategies for student nurse retention. Frequencies were collected from both data collection procedures. The phases of theme development followed the process outlined by Creswell (2003, p. 221). These are (1) initial themes and specific statements, which were defined during the Delphi process; (2) statements were used as themes for the faculty and graduate surveys.

Therefore, these steps were followed to analyze the data:

1. The Delphi process results were coded into themes for each research question.
2. Faculty survey results were coded into themes for each research question.
3. Student survey results were coded into themes for each research question.
4. Focus group interviews and field notes were parsed for themes and consolidated.
5. The codes were then quantified; that is, the number of times text data occurred for students and faculty were recorded.

The numbers were compared to seek repetitive responses and to develop a rank order list of *best practices* for retention of student nurses. This model also provided extensiveness of resulting best practices. That is, the responses were converged from various levels within the ADN program—directors and coordinators, faculty, and students—thus strengthening the merits of the *perceived best practices* found.

Focus Group Analysis

Immediately following each focus group, the researcher transcribed, verbatim, the conversations and began to analyze the raw data. Nuances were also noted, like facial expressions, changes of position, loudness or softness of the voice, laughing or other vocalizations. Field notes were completed. Overall, 124 pages of transcription and field notes were recorded.

Themes were extracted from typed transcriptions of the focus group interactions and field notes. Krueger (2000) suggested the long table approach where each focus group is transcribed and printed on a different color of paper to identify the source of the data. Each line of transcript was cut apart. Categories were labeled with the research questions:

1. What are the best practices for recruitment of nursing students?
2. What are the best practices for tracking of nursing students?
3. What are the best practices for retention of nursing students?

If the response did not fit in any category, it was put aside. When duplicate responses occurred, they were assembled in a pile. From the initial analysis of the focus group participation, twenty themes emerged. Frequency of a response (Krueger, 2000, p. 136) was less impressive than specificity. Extensiveness or the variety of respondents, was important, giving more strength to the overall responses. Reflecting on the themes, as the researcher is closely tied to this area of study, required bracketing of personal opinions and areas of sensitivity (Creswell, 1998).

Summary

This mixed-methods study examining *best practices* for retention within the FCCS Associate degree nursing programs used the Delphi process, survey methodology, and focus groups to identify program directors', program faculty's, and successful students' perceptions of *best practice* for retention of students. Six nursing program directors took part in the research, which required their thoughtful participation, securing cooperation from the faculty, and organizing of successful graduates from the nursing program for the focus groups.

The study used quantitative techniques to reveal central themes. Particular attention was given to themes repeated on different levels and appearing in the director Delphi survey, faculty survey, student survey and focus groups. Sixty faculty and 26 students participated in this study.

CHAPTER FOUR

DATA ANALYSIS

Primary Research Question: What are the perceived best practices for student nurse retention within the ADN programs in the FCCS?

The purpose of this mixed-methods research was to discover the *perceived best practice* retention methods for nursing students in the FCCS ADN programs. Inherent in this question were the *perceived best practices* for recruitment and tracking of the ADN students. Therefore, recruitment and tracking of ADN programs were retained as part of this investigation as guiding questions. This research endeavored to achieve depth and validity by querying directors of Associate degree nursing programs in the FCCS, faculty and coordinators, as well as successful graduating students in the participating ADN programs.

In this study, items that were considered *best practices* were those rated highest by the directors of nursing, the faculty, and the students. Quantitative survey data were rank-ordered according to frequency and means of responses on a Likert-type scale. The summary of these outcomes and conclusions combined qualitative and quantitative data to develop a well-supported list of perceived *best practices* for nursing retention in ADN programs within the FCCS.

Participant Selection

The initial participants in this multifaceted study were the six directors of a purposive sample of FCCS Associate degree programs in nursing. With a mean of 20.8 years of experience, these directors were representative experts in the field of nurse student retention. Having experts as participants was critical to the integrity of the study, which was based on responses to the Delphi process. For this Delphi study, the directors

were selected by calculating the retention rates of the nursing students in the FCCS. Parameters for calculations involved researching enrollment of nursing students who took the first nursing course, by common course numbering, and then the last nursing course, by common course numbering, within a three-year period from 2000 to 2003. Those students who completed the program within this time were considered successful.

With the assistance of Patricia Windham, Director of the Department of Educational Effectiveness and Research for the State of Florida, the 28 FCCS programs offering the Associate degree in nursing were rank ordered according to their calculated retention rate. The National League of Nursing accredited twenty-three of these programs at the time of data capture. The average (mean) student retention rate was 79.1 percent. Those ADN programs whose retention rate was higher than 79.1 percent were contacted to participate in the actual research. There were eight programs meeting those criteria. Six directors of Associate degree nursing programs in the FCCS participated in this research to completion.

Secondary Research Question 1: What are the best practice retention methods as perceived by directors and coordinators for producing Associate degree in nursing graduates in the Florida Community College System?

Pilot Delphi Study

A pilot study was performed before collection of the actual study data to support content validity and reliability of the actual Delphi process. The researcher identified and selected schools to be included in the pilot study. Criteria for participation in the pilot were the following.

1. Selected program was not accredited by the National League of Nursing.
2. Selected nursing program had a relationship or interaction with the researcher.
3. Selected nursing program had a retention rate, as defined by the researcher and Patricia Windham, Director of Educational Effectiveness and Research for the Florida Community College System, lower than 79 percent.

Because the population from which to select a sample consisted of only 28, the directors of programs with the highest retention rates were excluded from participation in the pilot and were targeted for inclusion in the actual Delphi study. The pilot participants (N=4) were all Caucasian females, two aged 58, and two aged 63. Two participating Associate degree programs were from more rural areas with populations fewer than 100,000, and two were from urban areas with populations over 100,000. Two of the directors had attained doctorate. The others had Master's degrees in nursing.

Table 4 Pilot Participant Demographics

	Range	Median	Mean	Mode	SD
Age of Participant	58-63	60.5	60.0	58, 63	9.9
Years of Experience in Higher Education	12-24	23.5	20.8	24	5.9
Years of Experience in Community College	12-24	18.0	19.0	N/A	9.6
Years of Experience in This Nursing Program	12-24	18.0	19.0	N/A	9.6
Number of Students in The Program	36-156	118.0	107.0	N/A	54.9
Years the school has offered nursing ed	4-24	23.0	18.8	N/A	9.9

Geographical Location	
SW FL	1 (25%)
SE FL	0
Central	2 (50%)
NW FL	1 (25%)
NE FL	0

The results of the pilot Delphi were tabulated and rank-ordered. Results of Round One included sixteen institutional recruitment factors, five individual recruitment factors, five tracking practices, eight individual tracking measures, seven institutional retention measures, and sixteen individual retention measures. The second iteration, Round Two, was a verification of the participant's response. In Round Three, the respondents were asked to select the practices that they perceived as *best practice*, whether or not their school used them. The pilot study concluded with this list, the *perceived best practices*.

Table 5: Pilot Delphi Results

<u>Category</u>	<u>Practices</u>
<u>Individual Recruitment Practices</u>	<ol style="list-style-type: none"> 1. Counseling by appointment 2. Email or other correspondence 3. Personal interviews with interested students or applicants
<u>Institutional Recruitment Practices</u>	<ol style="list-style-type: none"> 1. Health career fairs at local schools or in the community 2. Application materials published on college Web site
<u>Individual Tracking Practices</u>	<ol style="list-style-type: none"> 1. One-to-one advising and counseling with clinical instructor and lead instructor

2. Department record-keeping and graduation evaluations

Institutional Tracking Practices

1. Cohort data analysis regarding NCLEX-RN rates
2. Cohort data retrieval on demographic data
3. GPAs and graduation rates

Individual Retention Practices

1. One-to-one evaluation sessions regarding their performance (class and clinical)
2. Advisement opportunity with clinical instructor and program director as needed to meet learning needs of students
3. Assistance for those who need help by the instructor
4. Open lab hours with a lab assistant for tutoring as needed.
5. Identification of students, as soon as possible, who fall behind. Remediation, extra hours in nursing skills lab and extra assignments as needed
6. Identification of students at “high risk” for failure. Institute remediation as needed

Institutional Retention

1. A clinical group ratio on average of ten students to one instructor

Delphi Process

The purpose of the use of the Delphi process is to achieve consensus in response to an open-ended question. This process offers the respondents an opportunity to respond to the same questions over time, allowing for thoughtful and creative responses. Paramount to the Delphi process is the provision that the respondents are experts in their fields. Directors of the ADN programs in the FCCS with the highest retention rates were considered experts for this research, which seeks to identify *perceived best practices* for student nurse retention in ADN programs in the FCCS. Therefore, programs with the highest retention rates were invited to participate in this research.

Delphi Participants

Six participated to completion: five female; one male. All were Caucasian. All listed a Master's as the highest degree attained. Three participating nursing programs were geographically located in an area of less than 100,000; three were located in areas with populations greater than 100,000. Initially participants were asked to provide ideas in response to this query: *What are the best practice recruitment, tracking, and retention methods for producing Associate degree in nursing graduates in the Florida Community College System?*

Round One

Participants were asked to specifically respond to the following research items:

1. Identify any methods that you use (or your institution uses) to recruit students to your program.

2. Identify any methods that you use (or your institution uses) to track students in your program.
3. Identify any methods that you use (or your institution uses) to retain nursing students in your program.

Forty-six responses were received within all the categories during Round One. Lengthy descriptions of the retention practices used were received. The directors had been contacted by phone to request their participation and initiate the discussion. One benefit of the Delphi process is that the pacing of the questions allows for thoughtful consideration over time, which allows for deeper thought and discussion on the subject at hand.

Round Two

Participants were asked to verify that the responses received were the intended responses. In this study, there were no changes to the initial responses. Each participant (N=6) agreed with the reiteration of his or her response. The participants were thinking of their own comments and had not yet seen responses from other participants during this round.

Round Three

Responses of all six participants were consolidated onto one survey and returned to the participants requesting that they select their *perceived best practice*, whether or not their nursing program used this strategy. The primary goal for this phase of the Delphi process was to create a list of perceived best practices for nursing retention overall, not

just in a participant's program. The following is a list of the 36 responses in rank order according to the frequency they were selected by the participating Delphi respondents.

Table 6: Delphi Ranking Table

Student Recruitment

<u>Rank</u>	<u>Topic</u>	<u>N</u>	<u>Frequency (%)</u>
1	One-to-one interviews with faculty advisors	6	100
1	Recruiting information on the college Web site	6	100
1	Recruiting information in the college catalog	6	100
1	Nursing program guide for interested students	6	100
2	Newspaper ads regarding the nursing program	4	66
3	High school career days	3	50
3	Community job fairs	3	50
3	Monthly open house	3	50
4	Informational “Teddy Bear” sessions for elementary students	2	33
4	Use a “call center” for inquiries	2	33
4	Public service announcements	2	33
4	Recruitment information in college or foundation periodicals	2	33
5	No recruitment needed	1	17

Student Tracking

<u>Rank</u>	<u>Topic</u>	<u>N</u>	<u>Frequency</u>
1	Department maintains demographic data on students	6	100
1	Department tracks students once they are enrolled	6	100
1	Department maintains records on GPAs and graduation rates	6	100
2	Faculty meets with all first-semester students with a failing grade at midterm to evaluate their plan for improvement and to encourage them to seek help.	3	50

2	Faculty complete documentation forms and keep summary notes on meetings with students. These notes are kept in the student files.	3	50
3	College keeps a database for all inquiries by major code	1	17
4	Tracking students is not necessary	0	0

Student Retention

Rank	Topic	N	Frequency
1	Face-to-face office hours	6	100
1	Student progress notes to allow instructors to follow-up on what was implemented	6	100
1	Faculty counsels students to identify stressors and develop a plan for success	6	100
1	Tutoring by faculty	6	100
1	Identifying students at-risk and developing a plan to assist them	6	100
2	An Instructional support person (RN) available to assist students who are having difficulties with theory content or needing clinical skill assistance.	4	67
2	College-wide retention programs	4	67
2	On-line tutorials	4	67
2	Class review sessions held for difficult courses	4	67
2	Exam reviews following testing to explain answers and rationale	4	67
2	Faculty placement of students in mandatory support groups conducted by mental health faculty	4	67
4	Peer tutor programs that help in assisting students with theory and clinical skills	1	17
4	Tutoring by students	1	17
5	Separation semesters into mini-mesters ; the first, lab; the second, clinical	0	0

Delphi Themes

The directors found four items that were *perceived best practice* for recruiting students as related to retention of nursing students: (1) one-to-one interviews with students; (2) information in college Web sites; (3) information in college catalog; and (4) the use of a nursing program guide, which allows students to know what courses to take each semester. According to these directors, *best practices* in tracking include maintaining demographics, grade records (GPAs), and graduation rates. The *best practices* in the area of retention included offering face-to-face hours with instructors; maintaining student records to allow for follow-up between faculty; tutoring by identifying students at-risk and developing a plan to assist them.

Individual attention

The theoretical framework of this research is exemplified in individual attention and is a theme in each category: one-to-one interviews, face-to-face office hours, tutoring by faculty, identifying stressors, and developing a plan for success. The pilot study continued this theme with ten items reinforcing the benefit of individual attention by faculty. The importance of individual attention came through in each of the research question categories recruitment, tracking, and retention. Astin and Tinto both theorized that attrition is related to incongruence of the student's need for interaction as compared to the interaction the student felt. A lack of interaction leads to attrition.

Classroom Assistance

Classroom assistance was seen in the areas of tracking and retention. The faculty is defined as the person who will be most helpful in assisting the student in the classroom. Tutoring by faculty (100 percent) was rated as more important than tutoring by students (17 percent) or peer tutors (17 percent). Tutoring may be important as the community college ADN student is unique, given age and responsibilities of family and work. Mentoring or tutoring programs can alleviate the lack of confidence from being out of school. Tinto has discovered that cooperative “learning settings are more likely than traditional classrooms to engage the adult students”(Tinto, 1993, p. 189).

Nursing Program Structuring

The nursing program structure seemed to be a less important measure, according to these directors. Structuring of the department was seen in the creative scheduling of mini-mesters . However, the processes involved in tracking students are part of the nursing program structure and are important in this category. Structuring includes scheduling ratios of faculty and students at one to ten or fewer students to facilitate instructional opportunities.

Faculty Help

This Delphi process points to faculty as having the most importance in their relationship with students, and in the ability to help them. This interaction was seen in the high ranking of class review sessions, face-to-face office hours, examination reviews, identifying students at-risk, and developing a plan to assist them. The directors perceived

that student interaction with faculty was important in every category. The theories of Tinto and Astin support the interaction of faculty and students.

Research Question Two: What are the best practice retention methods, as perceived by faculty, for producing Associate degree in nursing graduates in the Florida Community College System?

The faculty and student surveys were developed from the concepts found in the Delphi process. These sixty surveys were analyzed for frequencies. The results of the surveys were coded and entered into the statistical software program, SPSS, to find frequencies and means and mode for the various practice responses from the Delphi Process. The following are the results to the faculty survey.

Table 7: Faculty Survey Results

<u>Practice</u>	<u>Frequency of Agree or Strongly Agree</u>	<u>Mode</u>	<u>Mean</u>
<u>Student Retention</u>			
An Instructional support person (RN) assists with theory and clinical	60	5	4.8
Tutoring by faculty	58	5	4.8
Professor is available for face-to-face	57	5	4.7
Identification of at-risk students with a set plan to assist them	60	5	4.6
Instructors maintain student progress notes			
For subsequent instructors	60	5	4.4
Peer tutors	60	4	4.4
Class review sessions held for difficult courses	56	5	4.3
Use of mini-mesters with laboratory preceding clinical	57	4	4.3
Counseling of students to identify stressors	51	4	4.3
Exam reviews follow testing	58	2	4.2
Tutoring by students	33	5	3.5
Professor is available for online tutorials	18	4	3.5
College provides student service/retention programs	27	3	3.5
Mandatory support groups	15	3	3.0
Professor is available for virtual hours	15	3	2.6
<u>Student Recruitment</u>			
Recruiting information on the college Web site	60	5	4.9
Use of a "call center" for inquiries	57	4	4.9
One-to-one interviews with faculty/advisors	54	4	4.6
Nursing Program Guide for students	56	4	4.6
High school career days	56	4	4.4
Monthly open houses	33	4	3.8
Public service announcements	24	3	3.8
Community job fairs	30	4	3.7
Recruitment information in the college catalog	30	3	3.7
Informational "Teddy Bear" sessions for elementary students	35	3	3.7
Newspaper ads regarding the nursing program	21	3	3.6
No recruitment needed	0	1	1.2
<u>Student Tracking</u>			
Department tracks students once they are enrolled	56	4	4.8
Department maintains records on GPAs and graduation rates	60	4	4.8
Faculty maintains progress notes on students in the student file	60	4	4.8
Department maintains a database on current nursing students	60	4	4.8
Faculty meets with all first semester students with a failing average at midterm to evaluate their plan for improvement	60	5	4.6
Department maintains demographic data on students on students	55	5	4.5
College keeps a database for all inquiries by major code	36	4	3.1
Tracking students is not necessary	0	1	1.0

In the category of retention, the faculty ranked having an instructional person (RN) to assist with theory and clinical, tutoring, and face-to-face office hours as having the highest agreement with a mean of over 4.

In the category of recruitment, the faculty ranked recruiting on the college Web site, use of a “call center” for inquiries, one-to-one interviews, and nursing program guide for students. High school career days were also rated with a mean of over 4, signifying more agreement than disagreement.

In the category of tracking, the faculty agreed with the departmental tracking of the student demographics and grade point averages, and the faculty felt that it was important to watch for students with failing grades to assist them with a plan.

Secondary Research Question Three: What are the best practice retention methods as perceived by graduating students, for producing Associate degree in nursing graduates in the Florida Community College System?

Table 8 Student Survey

<u>Practice</u>	<u>Frequency of Agree or Strongly Agree</u>	<u>Mode</u>	<u>Mean</u>
<u>Student Retention</u>			
Professor is available for Face-to-face	26	5	4.7
Exam reviews follow testing	26	5	4.7
Class review sessions held for difficult courses	26	5	4.6
Professor is available for virtual hours	23	5	4.5
An Instructional support person (RN) Assists with Theory and Clinical	23	5	4.4
Tutoring by Faculty	21	4	4.4
Peer tutors	15	5	4.1
Tutoring by students	9	4	3.5
Counseling of students to identify stressors	18	4	2.6
Mandatory support groups	9	2	2.4
Professor is available for online tutorials	15	5	2.3
Identification of at-risk students with a set plan to assist them	6	3	2.0
Instructors maintain student progress notes for subsequent instructors	3	2	1.2
College provides student service/retention programs	12	2	1.9
Use of mini-mesters with laboratory preceding clinical	6	2	1.8
<u>Student Recruitment</u>			
Nursing Program Guide for students	22	5	4.2
One-to-one interviews with faculty/advisors	18	4	4.2
Recruiting information on the college Web site	15	4	4.0
Use of a "call center" for inquiries	12	4	4.0
Recruitment information in the college catalog	18	4	3.7
Newspaper ads regarding the nursing program	18	4	3.8
Informational "Teddy Bear" sessions for elementary students	12	3	3.7
Public service announcements	18	4	3.2
High school career days	12	4	2.1
Community job fairs	18	3	2.1
Monthly open houses	6	3	1.8
No recruitment needed	12	1	1.9
<u>Student Tracking</u>			
Faculty meets with all first semester students with a failing average at midterm to evaluate their plan for improvement	24	5	4.6
Department maintains records on GPAs and graduation rates	24	3	4.5
Faculty maintains progress notes on students in the student file	21	5	4.2
Department maintains a database on current nursing students	12	4	4.2
Department maintains demographic data on students	18	4	4.1
College keeps a database for all inquiries by major code	18	4	3.8
Department tracks students once they are enrolled	12	3	2.0
Tracking students is not necessary	0	1	1.3

A mean of over 4.0 is considered an agreement with the item. That is, if the mean is 4.0, there is greater agreement than disagreement with the item. The Likert scale labeled 1 as “Strongly Disagree” and 5 as “Strongly Agree.” The items with means of 4.0 or higher can be compared as these are positive responses or “agree or strongly agree.” A mode of 4 or 5 indicated that the majority of participants agreed that this practice is perceived as best practice for student nurse retention. There were areas of concurrence between faculty and students, as well as some areas of dispute.

Table 9: Comparison of Means

<u>Practice</u>	<u>Faculty Mean</u>	<u>Student Mean</u>
<u>Student Retention</u>		
Professor is Available for Face-to-face	4.8	4.7
Exam reviews follow testing	4.8	4.7
Class review sessions held for difficult courses	4.7	4.6
Professor is available for virtual hours	4.7	4.5
An Instructional support person (RN) assists with theory and clinical	4.8	4.4
Tutoring by Faculty	4.8	4.4
Peer tutors	4.4	4.4
Tutoring by students	4.3	3.5
Counseling of students to identify stressors	4.3	2.6
Mandatory support groups	4.2	2.4
Professor is available for online tutorials	3.5	2.3
Identification of at-risk students with a set plan to assist them	4.6	2.0
Instructors maintain student progress notes for subsequent instructors	4.4	1.2
College provides student service/retention programs	3.5	1.9
Use of mini-mesters with laboratory preceding clinical	4.3	1.8
<u>Student Recruitment</u>		
Nursing Program Guide for students	4.6	4.2
One-to-one interviews with faculty/advisors	4.6	4.2
Recruiting information on the college Web site	4.9	4.0
Use of a "call center" for inquiries	4.9	4.0
Recruitment information in the college catalog	3.7	3.7
Newspaper ads regarding the nursing program	3.6	3.8
Informational "Teddy Bear" sessions for elementary students	3.7	3.7
Public service announcements	3.8	3.2
High school career days	4.4	2.1
Community job fairs	3.7	2.1
Monthly open houses	3.8	1.8
No recruitment needed	1.2	1.9
<u>Student Tracking</u>		
Faculty meets with all first-semester students with a failing average at midterm to evaluate their plan for improvement	4.8	4.6
Department maintains records on GPAs and graduation rates	4.8	4.5
Faculty maintains progress notes on students in the student file	4.8	4.2
Department maintains a database on current nursing students	4.8	4.2
Department maintains demographic data on students	4.5	4.1
College keeps a database for all inquiries by major code	3.1	3.8
Department tracks students once they are enrolled	4.8	2.0
Tracking students is not necessary	1.0	1.3

The areas of agreement between student and faculty were the areas having a mean of 4 or higher in each category. In the area of retention, the faculty and students disagreed in the areas of tutoring by students and counseling to identify stressors, professor availability for online tutorials, identification of at-risk students with a plan to help them succeed, instructors maintaining progress notes for future instructors, college providing student retention programs, and mini-mesters. Faculty responses reflected greater agreement on best practice retention factors than those responses from surveyed students.

In the area of recruitment, the faculty agreed with the students in all areas except: high school career days, community job fairs, and monthly open houses. In some areas, the means were the same.

Tracking is explained as the college or program maintaining a database of students by major code. The faculty rated tracking lower than the students did. In the area of department tracking of students, once they are enrolled, the faculty ratings reflected more agreement (mean=4.8) than the students' mean (mean =2).

Reliability and Validity of Survey Data

Validity is the degree to which the instruments, in this case, the faculty and student surveys, measure what they are supposed to measure (Polit, Beck, 2006). The validity of the faculty and student surveys was established through the use of the experts from the participating ADN programs in the FCCS who selected the items for the survey by identifying best practices in the subsets: recruitment, tracking, and retention of ADN nursing students. In total, thirty-six items were identified.

Reliability is defined as the consistency with which the instrument (surveys) measures an attribute (Polit, & Beck, 2006). After checking for readability of the survey questions with three readers who had no knowledge about the subject of student nurse retention, the split-half technique was used to measure reliability of the survey items. The faculty survey was pre-tested with five nursing faculty not involved with the survey. The student survey was tested with five students who were not otherwise involved in this research. The split halves were employed and then analyzed with Cronbach's alpha. In using Cronbach's alpha, the split half correlation was tested for all ways to measure internal consistency. In each subset, the Cronbach's alpha was calculated at a range between .8 and 1.0. Questions, therefore, were not changed as they showed internal consistency, and the survey was employed after receiving IRB approval.

Table 10: Cronbach's Alpha

	Faculty	Student
Recruitment of Nursing Students	.83	.95
Tracking of Nursing Students	.88	.94
Retention of Nursing Students	.96	1.00

Focus Groups

The focus groups were analyzed with a qualitative approach. The initial steps of the phenomenological approach involve bracketing the researcher's feelings, biases, and prejudices (Creswell, 1998). The researcher has been a nursing instructor in a community college for eight years and is now a coordinator of an ADN in the FCCS. The researcher's opinions and intuition regarding nursing student retention were set aside so that the students in the focus group would not withhold feelings, comments, or emotions.

Research Bracketing

The beliefs of the researcher, a perennial student and an instructor in a community college nursing program, were bracketed. The first of these beliefs is that some of the reason for the student success is intrinsic motivation. If the student wants to succeed, there must be an inner drive. Going to school and learning require effort, organizational skill, expense, and hard work. The student can rarely achieve an education in isolation. To succeed, there must be family support and faculty support.

The researcher has also seen many capable students who were not able to succeed even with a strong family backing and faculty support. These are some of the most difficult students to assist as they do not succeed even after all assistance and effort have been exhausted. In that case, the student and faculty must accept the fact that they were not meant to be in that field, in this case, nursing.

Focus Group Participation

Five focus groups were held in the participating nursing programs. Two of the focus groups had seven students and three had four, totaling twenty-six students. In each focus group, the students knew one another well and had been in the nursing program together for two- or two-and-a-half years. Some had not seen one another in several months, however, as they were in different hospitals for their clinical rotations or were assigned to different sections of a course. This focus group served as a reunion for some. Remarks such as “I haven’t seen you since Professor Dodd’s class,” were frequently heard.

These students were described as successful graduating students in the six FCCS Associate degree nursing programs participating in this research. The groups were selected and organized by the directors of nursing. Successful students were selected because this study sought best practices for the retention of nursing students. Because they have witnessed fellow students who failed and others who overcame challenges successfully, their strategies and abilities were of interest in the focus groups.

For academic purposes, Krueger (2003) recommended six to eight participants for each academic focus group. However, according to Krueger, for in-depth interviews, fewer may be appropriate. Three of these focus groups had four students: two, seven students. The graduates arrived prepared to discuss their successful nursing program strategies and characteristics that they perceived as helpful. The interview protocol was developed before the first focus group to give some structure to the groups and to allow for consistency between the five focus group discussions. This protocol was shielded from the participants' view.

Analysis of the Focus Groups

Immediately following the focus group, which was audio-taped in each instance, the researcher completed field notes and transcription of the raw data. The initial attempt in organizing responses was to characterize responses into similar categories as done in the surveys, such as recruitment, tracking, and retention. The focus groups allowed for an open-ended discussion where new categories could be discovered. The long table approach outlined by Krueger (2003) was used initially with the large number of responses. As the sorting evolved, new categories emerged. The responses were then

sorted, using an Excel spreadsheet to categorize the comments that made up the data.

This process verified the initial results, supporting validity and reliability.

Field notes were gathered and written by the researcher, beginning with arrival at the focus group location. When the focus group began, writing field notes was suspended until immediately after the group discussion ended. Notes were transcribed and attached to the audiotape from the focus group.

This discussion will begin with themes found in each category and then reveal other categories as they appeared in the focus group interviews. The responses were creative and were directed to the problem at hand. Occasionally there were five second pauses, especially right after the researcher asked a question. There were several times when the conversation strayed, but the researcher was able to bring the group back to the task quickly. In each group, one student spoke more than others, and there was consistently one quieter participant. The researcher practiced gate-keeping to ensure all members were able to speak.

Recruitment

When asked what actually brought the student to that particular community college nursing program, the comments were related to practical situations that are consistent with the needs a nonresidential, older-than-traditional student. The first topics that surfaced related to convenience and cost. One student stated, “I can go for a two-hour drive or a 20-minute drive every day.” Location of the community college could mean saving time, money, and energy. Along with convenience was the cost of the community college nursing degree as compared to that of the university degree. Almost

everyone mentioned that cost and convenience were the major draws for attending their community college.

Without advertising, the school's reputation was established. No student could remember where he or she had heard about the college, but all students thought that if they went to this community college, they would succeed and would pass their licensing examination, NCLEX-RN, which allows them to work as an RN in the state of Florida. They seemed proud of their schools and felt they were getting a better education and would be able to get a job easier than had they attended a university to become an RN. One student said, "I am not getting any younger, I want the best opportunity, and I want to get it done quickly." Another common comment was "I know my technical skills are better than if I went to a university."

When questioned further, one focus group began describing the reasons that they went into nursing altogether. Reasons like those in the Johnson & Johnson advertisements airing on television, which depict RNs as those who help others, are knowledgeable, do good work, and are in great demand in the workforce, were brought up. However, specific advertising by the college was not mentioned in any focus group.

Tracking

When initially asked, the students generally did not know what tracking was or if it was being done. In fact, several students stated, "No one watches over students." Another student said, "You watch out for yourself and fellow students." Asked "Did you have an advisor?" they were able to respond with more understanding. A few students mentioned that they had seen an advisor in the beginning of the program. When

asked if he/she was helpful, the comments were that the course plan was helpful, but they never saw the need to go back to the advisor. In fact, many said they did not know where the advisor office was. A couple of the students from separate campuses stated that they felt comforted that the advisor was there but that they did not stop in. In summary on advisors, the students remarked, "I guess they are there if you need them."

Retention

Retention was seen as a struggle for the graduating students. The major areas of struggle were these: the program (course) requirements, faculty interactions, family member needs, and finances. Certain comments were almost verbatim throughout all the future focus groups.

Regarding course requirements, the students stated that some instructors seemed to "avoid helping the students in any way." One group of students stated that if they did poorly on a test, one instructor would call them in to the office and ask what they were planning to do to improve their grade. The students would respond and leave the office. Another instructor reviewed information after each lecture with "You got it" handouts to summarize and highlight important information for the students. This instructor received nods and smiles when her name was mentioned. The most commonly reported recruitment assistance was that the students help and support one another. Volunteer study opportunities and groups that they informally set up were popular in all the focus groups. Some professors throughout Florida reportedly used reviews before examinations. Reviews following examinations were reportedly used rarely. Only one institution's students mentioned a professor using reviews after examinations. The

students explained that they could not use such reviews because the examinations were on computers and could not be accessed again.

Students in the focus groups stated they were not often recognized by their professors by name or noticed if they were having a hard time. They also felt neglect when they were struggling with their studies. One of them stated, “We helped ourselves.” They agreed that fellow students were their primary support. The students were divided into groups of 10 to 12 students for clinical rotations. Most stayed within the same groups through school, and these members became a support.

Family involvement in the student’s activities came up in every focus group. Some stated that the student could not fail because her “family would not let me.” Some were given extra help by parents or spouses while in school. One graduate stated his mother made his breakfast and lunch every day. A married male student said his in-laws provide financial support so that he would not have to work while in school. Some said family members were helping with childcare. All said they could not have succeeded without family support.

Finances were an important issue, but at the point of graduation, financial difficulties related to school costs were behind them. Students mentioned that financial aid was slow and that the worry over finances took too much time from studying. A female graduate stated that she was having so much trouble with finances that she asked her professor to help her to complete the financial aid process. She was impressed when her professor solved her problem within two days.

Overall Analysis

Research Question: What are the best practice retention methods for producing Associate degree in Nursing graduates in the Florida Community College System?

Secondary Research Question One: What are the best practice retention methods from the directors and coordinators of ADN FCCS programs for producing Associate degree nursing graduates in the Florida Community College System?

In this mixed-method study, those practices at all the levels were considered the most valid strategies to retain students within the ADN programs in the FCCS. The directors, faculty, and students agreed perceived *best practices* for student retention are these:

1. One-to-one interviews provide information to prospective a student, which was validated in the focus groups repeatedly. They were given interviews and advisement in the beginning. The students stated they always knew “Advisors were there if we needed them.” Some stated they did not even know where their offices were anymore. Some stated they visited the advisor every semester.
2. Information available about the nursing program on the college Web site. A few in the focus groups mentioned that this type of information was of help in deciding to come to that community college.
3. Information available in the college catalog. Although the college catalog is available for the student to view before taking courses, few of the students in the focus group remembered using it more than once. Nursing courses are closed

courses, and the students are told which course numbers to register for and, therefore, no catalog is necessary, once they are in the program.

Secondary Research Question Two: What are the best practice retention methods as perceived by faculty in the ADN programs in the FCCS, for producing Associate degree nursing graduates within the FCCS?

Tracking students through the program was considered an important strategy in three areas for retention of nursing students.

1. Department maintain demographic data on students. Perceived maintenance of demographic data was important for the students.
2. Department tracks the students once enrolled. In this case, tracking involved making sure all of the courses were taken in order. All students in the focus group mentioned that they were given a course plan or program guide before beginning the program and that they followed that plan. They were unsure whether they were being tracked.
3. Department maintains records on grade point averages (GPAs) and graduation rates.

Although tracking of students is considered a *best practice*, the faculty did not consistently select “faculty maintain progress notes on students in the student file,” which may be interpreted to mean that the records should be kept in the department but not by the faculty.

Secondary Research Question Three: What are the best practice retention methods, as perceived by successful graduates, for producing Associate degree nursing graduates within the FCCS?

1. Professor availability for face-to-face office hours.
2. Student progress notes to allow instructors to follow up on what was implemented.
3. Faculty counseling students to identify stressors and develop a plan for success.
4. Tutoring by faculty.
5. Identifying students at-risk and developing a plan to assist them.

The students also chose class review sessions for difficult courses, examination reviews, and peer tutors, pointing to the concept that the students were looking for more instructional interaction and support. All but the directors suggested that an “instructional support person (RN) assists with theory and clinical.” The students also discussed clinical instruction at length. During the focus groups, many graduates stated that clinical experience in the hospital provided the opportunity to apply all skills learned, and students considered this experience most helpful for their sense of mastery. It is interesting to note the student/teacher ratio is generally less than 12 to one. Close interaction between instructor and student is inherent in the clinical setting.

Summary

Six directors of nursing, sixty nursing instructors, and twenty-six students from ADN programs in the FCCS participated in this research. It began with a Delphi study, faculty and student surveys, and student focus groups. Participants were from the most successful (retention rate calculated at least 79.1 percent) ADN programs within the FCCS. Students selected were the graduates of these programs.

From these experts, eleven strategies were identified that promote nurse student retention. Most were strategies that community colleges can easily follow. Professor interaction and student support emerged as important factors to retain students. Extrinsic factors were primarily related to faculty-student interaction. Intrinsic motivation was apparent from observation of the students and from their comments. These strategies are informative for ADN programs and can stimulate future research. If employed, these strategies can increase retention rates in ADN nursing programs and help to alleviate the imminent nursing shortage.

CHAPTER FIVE

DISCUSSION OF FINDINGS

Associate degree programs, usually located in community colleges, are the source of the majority of new nurses in the field. Associate degree nursing programs (ADN), therefore, should be looking for *best practices* to retain students. Although student retention research has been focused on attrition in the past, this research took a positive look at factors associated with the matriculation experiences of the most successful nursing students. Understanding that these community college students are unique (older, working, ethnically diverse, and with responsibilities), this research sought to find what contributed to student success in the Associate degree programs with the highest retention rates in the Florida Community College System (FCCS).

Summary of Findings

Recruitment

Most of the ADN directors reporting in this mixed-methods study listed multiple ways that they recruit students, such as public information and one-to-one interviews. Also listed were recruitment measures in elementary and high schools. The students in the focus groups were generally unsure where they heard about the program they were in initially. Their drive came from wanting to become a nurse. That inner drive propels the prospective student to look for a program that meets his/her goals. The focus group participants uniformly listed three reasons for choosing their programs: convenience, cost, and reputation. The reputation was defined by the results of the graduates as

reflected in the NCLEX-RN pass rates. One student spoke to the director of nursing informally at a health fair and was impressed with her. He was inspired by her, began taking courses at that community college, and eventually was accepted into that nursing program. He confessed that that one influential personal interaction led him to the program. The directors, students, and faculty all agreed that the personal relationships were the *best practice* for recruitment of students.

This example is consistent with Tinto's theory that congruence with the student's needs and expectations will lead to a greater chance of retention of the student.

Bandura's theory can also be seen in this example as the personal and environmental experiences that help the student self actualize will lead to a greater chance of retention.

Tracking

The students' responses during the focus groups and surveys regarding tracking were most striking. The students generally did not seem to be aware of any tracking methods. The directors and faculty did select *best practice* measures in tracking students: tracking GPAs, following students' progress, and documenting assistance received.

When students were questioned further, they did state that tracking measures may have helped them if tracking meant that someone (faculty) would have reached out to them if they failed a test or barely passed a course. However, their knowledge of tracking was not verbalized within the focus groups.

Retention

Findings are congruent with those of Vincent Tinto, who categorized reasons for attrition. Tinto (1993) noted that departure from college is related to intention, commitment, adjustment, difficulty, congruence, isolation, obligations, and finances. These findings were evident in the focus groups, especially, as the successful graduating nursing students discussed each of these topics in depth. An interesting look that this study provided was the sensitivity that appeared with the directors in the Delphi process and the faculty. Both listed eleven strategies important in retaining students.

Intention

The students also mentioned that their inner drive and family support contributed greatly in their efforts to reach their goal of becoming a registered nurse. The community college student is typically nontraditional and has commitments. Often the intention to become a nurse, according to these graduates, was intrinsic. These students sought the best program that was also convenient. They made sure to take prerequisite courses. Their intention to become a nurse required a commitment long before they entered their first nursing program.

Commitment

These graduate students were committed to the nursing program goal. In many instances, during the focus groups, the students mentioned that the clinical groups themselves were supportive. The students became committed to one another. They made comments such as their fellow students noticed when someone was having a problem or needed extra help and “We take care of ourselves.” Many stated that these nursing

school relationships will “last all our lives.” The faculty may have noticed the commitment that the students had for one another, as they were in agreement with peer tutors as a student retention strategy. Assigning study groups was not considered *best practice*. It seemed that the students expect that they will develop their own relationships and support network.

At the same time, the directors and faculty listed items showing their commitment to the students as *best practice*. These were seen in the importance given to “face-to-face office hours,” and “faculty tutors.” Regarding recruitment, directors and faculty saw “one-to-one attention” as best practice. Faculty agreed with ten of the retention methods. The faculty seemed to have a sense of responsibility toward the students. Tinto suggested that office hours and availability are not the only catalysts that cause students to seek support from faculty. As important, the classroom atmosphere helps to set the relationship to encourage those interactions.

Adjustment

When the students add a full-time, demanding, educational program to their already full lives, adjustments must be made. The successful students believe they can handle the commitment. Nursing is demanding emotionally as the novice-nursing student learns to deal with illness, dying, and other difficult situations, along with learning pathophysiology, pharmacology, as well as psychological and clinical skills. According to Bandura (1997), if the students do not have the skills to make adjustments to meet their goals, they will not succeed.

The successful students in the focus groups were able adjust their lives to meet the challenges of the nursing program. One 50-year-old student said she had gotten a divorce before starting the program. She then decided to enter the Associate degree nursing program and achieve her lifelong dream of becoming a nurse. As she started the program, she met fellow students who had similar educational goals. She stated that she felt she would not have done as well without this new supportive group of friends.

Difficulty

Each of the students described a difficulty that they encountered and how they overcame it. Some of the difficulties were due to lack of adequate preparation to enter higher education. In the nursing program, the student's strengths and weaknesses should be identified. The program is entered after meeting criteria such as taking and passing the prerequisite courses, or sometimes taking an entrance exam. Still the nursing program is stringent in its requirements. In some of the Associate degree nursing programs, the numerical grade levels are higher than the rest of the campus. In other words, the nursing student often must earn 77 percent on tests to earn a C; for the rest of the campus, a minimum C grade is 70 percent or 75 percent. All students confessed that they had had a difficult test that they failed or nearly failed, but they explained that they were at fault, and this one failure was not discouraging.

Congruence and Isolation

Astin (1977) and Tinto (1993) theorized that the more interaction the student has with fellow students and with faculty, the more likely they are to stay in school. Faculty efforts to interact with students and students with one another were the primary topics

that were listed by directors, faculty, and students regarding congruence and isolation. The students in the focus groups remembered a “faculty member from each semester” as being helpful, but overall stated that their relationships and interactions were primarily with one another. Still the students seemed to long for interaction with faculty, for all retention factors involving interaction with the professor were labeled “strongly agree” or “agree.” This type of interaction was rated high within the faculty and the students as well. Tinto (1993, p. 69) wrote that “Wide-ranging contact with faculty, especially outside the class, is associated with heightened intellectual and social development.” These traits will facilitate the student’s persistence in the nursing program.

Obligations and Finances

Community college students are often older and have already been self-supporting. They are coming to the college for a change of career and lifestyle. The students often need to continue to work, care for their children or other family members, maintain a house, and carry out household chores. These obligations can easily overwhelm the busy nursing student. The successful students in the focus groups all seemed to have had families that helped them. Nursing students generally have had one or more years of prerequisites and, during this time, may have settled the issues related to their obligations.

In the pilot study, a director mentioned having a fund to help a student with child care or a rent payment. None of the actual research participants suggested such assistance.

Summary of Findings

The directors of nursing, faculty, and successful students agreed on eleven strategies characterizing *best practice* for student nurse retention. Most of these strategies were based on human interactions, primarily faculty and student relationships:

1. One-to-one interviews providing information to prospective students.
2. Information available about the nursing program on the college Web site.
3. Information available in the college catalog.
4. Department maintaining demographic data on students.
5. Department tracking the students once enrolled.
6. Department maintaining records on grade point averages (GPAs) and graduation rates.
7. Professor available for face-to-face office hours.
7. Student progress notes to allowing instructors to follow up on what was implemented.
9. Faculty counseling students to identify stressors and develop a plan for success.
10. Tutoring by faculty.
11. Identifying students at-risk and developing a plan to assist them.

An additional observation during this study is the ease with which the students were organized and their willingness to participate. They mentioned repeatedly that it “felt good” to tell someone about how they succeeded in nursing school. Their experiences in the focus groups were reported as positive and often they stayed together and talked among themselves. Their attention was with the group the entire time. Their body

language was alert and participative, giving more credence to the authenticity of the general concepts resulting from this research. The students crave individual attention, especially by faculty.

Implications for Practice

Directors of nursing programs, coordinators, and faculty can learn from this study that student interaction with the faculty and with other students in the nursing program is associated with student perception of success. According to the surveys, faculty agreed that their attention to the student's needs is something that can increase student success and retention.

To facilitate the interactions, the faculty should be allowed to schedule time for these interactions. The faculty should also use techniques that open communication between them and the students. The focus groups repeatedly mentioned that they did not feel self-supported by the faculty and that the students took care of each other.

Some of these *best practices* are easy to achieve. Information about the nursing program can be placed on the college Web site and in the college catalog. Some of the concepts have to do with faculty availability and helpfulness to the nursing students. It is also important that the nursing program faculty and administrators understand that recruitment of students who are likely to succeed will increase retention rates. Therefore, individual consultations or interviews before admission may help clarify congruence for the student.

Areas for Future Investigation

This study can be expanded to investigate other levels of education, primarily nursing students in university settings. Retention practices in other nursing programs could validate the findings from this study—that is *best practices* focused on the student-faculty and student-student interaction. Quantitative methods could seek congruence between beliefs of students and faculty regarding retention strategies.

Future studies can replicate this study. Selection of students may include specific requirements like grade point averages, and specific ethnic or age requirements for the focus groups and student surveys. These criteria may give more strength to the results.

Program development can be geared toward the provision of increased student and faculty interaction. Programs such as these would require financial support, creative thought, more faculty time, and involvement, and may incur additional costs.

Longitudinal case studies can be done to observe student interaction within programs using strategies that encourage individual attention from faculty and association with outcome data such as the NCLEX-RN success rates.

The faculty survey rate of return in this study was 88 percent. From that statistic, it can be inferred that nursing educators have important information that they would like to share regarding student retention. Future studies regarding student retention should focus on ways that the instructor can encourage student attachment and interaction with other students in and outside the classroom. Research can be quantitative and qualitative to investigate teaching strategies that facilitate interactions and open relationships for all students in the program.

Other quantitative data that could be investigated are the selection of students for the nursing programs. Incidental to this research and in the development of relationships required for the performance of the in-depth surveys and focus groups, the researcher discovered that selection of students has been a topic of debate and indecision. Student selection should be researched as to whether or not grade point average, preadmission interviews, or preadmission testing results in better student retention. Nursing programs have limited enrollments and have large numbers of applicants. As the nursing shortage continues, students will continue to apply in larger numbers. The directors and coordinators must select the best candidates. Researching nursing student selection would be a good complement to this retention research.

Recruitment of nursing students and selection of student nurses can also be researched. Recruitment of nursing students is closely tied to Tinto's theory of congruence and Astin's attachment theories. When the student's attitudes and desires are congruent with the educational program or college, retention is more likely. Community colleges support diverse, yet paradoxically, unique students. Recruitment practices for this unique population of college students can be researched further.

Qualitative data are never completely exhaustive. Focus groups of students early in their programs would give more information as to how or if the student's coping abilities change, and whether the desire for faculty interaction occurs early or later in the program, as the student begins to separate from the school through graduation.

Conclusion

The nursing shortage is reaching critical levels. At the nexus of the problem is the production of nursing graduates. As community colleges produce the majority of nursing graduates and applications for the state licensing examination (NCLEX-RN), it is logical to research retention strategies used by the Associate degree programs in this institutional setting that have the highest retention rates.

Sources of data for this research began with directors of nursing in the ADN programs in the FCCS with retention rates higher than 79.1 percent through a Delphi process. Sixty faculty from these programs participated by responding to a Likert type survey based on the results of the Delphi research. Twenty-six graduating nursing students were selected from these programs by their directors to participate in a similar study based on the Delphi process. These students also participated in focus groups to encourage open discussion of their viewpoint on *best practices* for nursing retention in Associate degree programs.

From this study, it is apparent that nursing students who enroll in Associate degree nursing programs in the Florida Community College System want to succeed and persist until graduation. Nursing directors, faculty, and students were studied with multiple methodologies to find the *perceived best practices* for retention in these programs. Integration of the results of these studies showed eleven strategies constituting *best practice*. Congruent with Tinto's theory of student retention, these practices, overall, indicated that student interaction with faculty and students offered invaluable support to them that is needed to stay in the nursing program.

APPENDIX A

LETTER TO DR. PATRICIA WINDHAM

From: Mary Lewis <mlewisarnp@comcast.net

To: Pat.Windham@fldoe.org <Pat.Windham@fldoe.org

Sent: Sat Aug 28 09:42:02 2004

Subject: Nurse Student Retention Dissertation

Dr. Patricia Windham,

As the Director of the Office of Educational Effectiveness and Research, I wonder if you can lead me towards any site for data, surveys or information regarding student retention programs for Associate degree nursing programs in Florida. I am a doctoral student at UCF in Orlando just beginning to work out a proposal for a dissertation on student retention in the nursing programs at community colleges. I am the coordinator of the Edison College nursing program in Lee County and have a special interest in this topic. The research question will be related to what ADN programs are doing well to keep students in the programs. The focus is the "stayers" not the "leavers." I would like to compare or gather data from several nursing programs regarding types of students, selection, and recruitment efforts. I would be particularly interested in comparing nursing student retention between colleges and program evaluation regarding retention efforts in those colleges. I know you are a very busy person, but I do appreciate your assistance. I would hope this study would provide some insight to reduce the impact of the nursing shortage.

APPENDIX B

INFORMED CONSENT FOR NURSING LEADERS AND EDUCATORS

Informed Consent for ADN nursing leaders and educators

November 15, 2004

Dear Florida Community College System Administrator:

I am a doctoral student in the College of Education at the University of Central Florida, Orlando. Currently, I am completing my dissertation research and thesis through a mixed methods research study. My faculty supervisor and doctoral advisor is Dr. Ruby Evans, Associate Professor, Higher Education and Policy Studies, and the Program Coordinator for the Community College Specialization area in the College of Education, University of Central Florida, Orlando, 32816-1250, who can be contacted at (407) 823-1129, E-mail: revans@mail.ucf.edu

For my dissertation research, I am interested in conducting research that pertains to retention of associate in science nursing students. I anticipate that the research findings will enable nursing administrators, faculty, learners, and graduates to explore data that will aid student recruitment, retention, and learning, both present and future students. Your participation is completely voluntary and the results will be used to support student learning, retention, and academic success, so that ADN programs in the Florida Community College System, as well as other community college, may benefit by such changes and more effectively address the nation's critical nursing shortage.

I will personally summarize and analyze the data collected from your individual survey. I will remove any identifiers during retrieval of this information from your survey responses and your identity will be kept confidential. Additionally, in my final report, your identity will not be revealed. There are no anticipated risks or compensation benefits to you as a participant for taking this survey. You are free to withdraw your consent to participate and may discontinue your participation during the survey at any time. If you have any questions about this research project, please contact me at 239-489-1361 (cell), 239-691-0603 (Home), 239-489-9214 (Office) or via E-mail mlewis@edison.edu, or my faculty mentor/supervisor, Dr. Evans. Questions or concerns about research participants' rights may be directed to the UCFIRB office, University of Central Florida Office of Research, Orlando Tech Center, 12443 Research Parkway, Suite 207, Orlando, FL 32826. The phone number is (407) 823-2901. Please sign and date this consent form in the appropriate spot to indicate your participation. A second copy is enclosed for your records. By signing this form, you give me permission to report your responses in the final dissertation thesis manuscript and/or research report and/or potential articles for publication that may report and disseminate the findings of this research. Thank you for your participation in this important research study involving the community college.

Sincerely,
Mary Lewis, Doctoral Candidate

Sincerely,
Ruby Evans, Ed. D., Advisor

_____ I have read the informed consent described above for the FCCS ADN study, and I voluntarily agree to participate in the study.

Participant Signature

/_____
Date

APPENDIX C

INFORMED CONSENT FOR FCCS AND PROGRAM GRADUATES

Informed Consent for FCCS ADN program graduates

November 15, 2004

Dear Florida Community College System Associate Degree in Nursing (ADN) Program graduate:

In addition to my professional role as Nursing Program Coordinator at Edison College (Florida), I am a doctoral student in the College of Education at the University of Central Florida, Orlando. Currently, I am completing my dissertation research and thesis through a mixed methods research study that focuses on best practices in retention of ADN students in the Florida Community College System (FCCS). My faculty supervisor and doctoral advisor is Dr. Ruby Evans, Associate Professor, Higher Education and Policy Studies, and the Program Coordinator for the Community College Specialization area in the College of Education, University of Central Florida, Orlando, 32816-1250, who can be contacted at (407) 823-1129, E-mail: revans@mail.ucf.edu

For my dissertation research, your knowledge and feelings about nursing student retention is invaluable. Enclosed you will find a set of initial survey questions, which are focused on your experiences as a student who participated in learning experiences through a state approved ADN program in the FCCS. I would also like to solicit your participation in a focus group in which you describe your experiences. Your participation is completely voluntary and the results will be used to support student learning, retention, and academic success, so that other ADN community college students like you, may benefit by such changes and more effectively learn.

I will personally summarize and analyze the data collected from your individual survey and interview. I will remove any identifiers during retrieval of this information from your survey responses and your identity will be kept confidential. Additionally, in my final report, your identity will not be revealed. There are no anticipated risks or compensation benefits to you as a participant for taking this survey. You are free to withdraw your consent to participate and may discontinue your participation during the survey at any time. If you have any questions about this research project, please contact me at 239-489-1361 (cell), 239-691-0603 (Home), 239-489-9214 (Office) or via E-mail mlewis@edison.edu, or my faculty mentor/supervisor, Dr. Evans.

Questions or concerns about research participants' rights may be directed to the UCFIRB office, University of Central Florida Office of Research, Orlando Tech Center, 12443 Research Parkway, Suite 207, Orlando, FL 32826. The phone number is (407) 823-2901. Please sign and date this consent form in the appropriate spot to indicate your participation. A second copy is enclosed for your records. By signing this form, you give me permission to report your responses in the final dissertation thesis manuscript and/or research report and/or potential articles for publication that may report and disseminate the findings of this research. Thank you for your participation in this important research study involving the community college.

Sincerely,

Mary Lewis, Doctoral Candidate

Sincerely,

Ruby Evans, Ed. D., Advisor

_____**I have read the informed consent described above for the ADN study.**

_____**I voluntarily agree to participate in the ADN study.**

_____**I am 18 years of age or older.**

_____/_____
Participant Signature Date

APPENDIX D
FACULTY SURVEY

Nursing Faculty Survey

As nursing faculty, your views on student retention are important. This survey will be used to discover your perceptions of student satisfaction. It is hoped that the results of these surveys will assist colleges in recruitment and retention of nursing students at a time where there is a critical nursing shortage.

Student Retention

Please rate the level of importance that these topics have for you. In rating level of importance:

1-Strongly Disagree

2-Disagree

3-Neutral

4-Agree

5-Strongly Agree

	1	2	3	4	5
	(strongly disagree)				(strongly agree)
1. Peer Tutor programs are helpful in assisting students with theory and clinical skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. An Instructional support person (RN) available to assist students who are having difficulties with theory content, or needing clinical skill assistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Class review sessions held for difficult courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Virtual hours with professor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Online tutorials with professor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Face-to-face office hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Exam reviews following testing to explain answers and rationale.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Student progress notes to allow instructors to follow-up on what had been implemented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. College-wide retention programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Identifying students at-risk and developing a plan to assist them..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Separating semesters into mini-mesters ; the first is lab and the second is clinical.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Faculty counsels students to identify stressors and develop a plan for success.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Faculty places students in mandatory support groups conducted by mental health faculty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Tutoring by faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Tutoring by students.

Student Recruitment

Please rate the following recruitment activities according to your agreement that they are effective for student nurse recruitment where:

1-Strongly Disagree

2-Disagree

3-Neutral

4-Agree

5-Strongly Agree

	1	2	3	4	5
	Strongly disagree				Strongly agree
16. High school career days.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Community job fairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Monthly open houses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Public service announcements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Newspaper ads regarding the nursing program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Recruitment information in the college or foundation periodicals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Recruiting information on the college Web site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Recruiting information in the college catalog.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. One-one interviews with faculty/advisors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Informational “Teddy Bear” sessions for elementary students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Use of a “call center” for inquiries.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. No recruitment is needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. A Nursing Program Guide for interested students on all campuses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student Tracking

Please rate the following based on the extent to which you agree with the following statements where:

1-Strongly Disagree

2-Disagree

3-Neutral

4-Agree

5-Strongly Agree

	1 (strongly disagree)	2	3	4	5 (strongly agree)
29. Department maintains demographic data on students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. College keeps a database for all inquiries by major code.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Department tracks students once they are enrolled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Department maintains records on GPAs and graduation rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Faculty meets with all first semester students with a failing average at midterm to evaluate their plan for improvement and to encourage them to seek help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Faculty complete documentation forms and keep summary notes on meetings with students. At the end of the semester, these notes are filed in the student's record and can be reviewed by subsequent instructors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Department has a database program for each student with all relevant program-related information. Faculty can review a student's history.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Tracking students is not necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell me about yourself.

1. My relationship with the community college is: _____ Faculty or _____ Student
2. I have been in the nursing program for: _____ years.
3. What is your gender?: _____ Male or _____ Female
4. What is your ethnicity?
 - _____ Hispanic
 - _____ African American
 - _____ Caucasian
 - _____ Asian/Pacific Islander
 - _____ Other or multicultural
5. What is your age? _____ years.

APPENDIX E
STUDENT SURVEY

Nursing Student Survey

As a nursing student, your views on student retention are important. This survey will be used to discover ideas of what practices enhance student retention. It is hoped that the results of these surveys will assist colleges in recruitment and retention of nursing students at a time where there is a critical nursing shortage.

Please rate the level of importance that these topics have for you. Use the following scale.

- 1-Strongly Disagree
- 2-Disagree
- 3-Neutral
- 4-Agree
- 5-Strongly Agree

Student Retention

	1	2	3	4	5
	(Strongly disagree)				(Strongly agree)
1. Peer Tutor programs are helpful in assisting students with theory and clinical skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. An Instructional support person (RN) assists students with theory and clinical skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Class review sessions held for difficult courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Professor is available for virtual hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Professor is available for online tutorials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Professor is available for face-to-face office hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Exam reviews following testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Instructors maintain student progress notes for subsequent instructors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. College provides student service/retention programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Identification of at-risk students with a set plan to assist them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Use of mini-mesters with laboratory preceding clinical.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Counseling of students to identify stressors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Mandatory support groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Tutoring by faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Tutoring by students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student Recruitment

Please rate the following recruitment activities according to your agreement that they are effective for student nurse recruitment. Use the following scale.

1-Strongly Disagree

2-Disagree

3-Neutral

4-Agree

5-Strongly Agree

	1 (Strongly disagree)	2	3	4	5 (Strongly agree)
16. High school career days.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Community job fairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Monthly open houses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Public service announcements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Newspaper ads regarding the nursing program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Recruitment information in the college or foundation periodicals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Recruiting information on the college Web site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Recruiting information in the college catalog.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. One-one interviews with faculty/advisors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Informational “Teddy Bear” sessions for elementary students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Use of a “call center” for inquiries.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. No recruitment is needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. A Nursing Program Guide for interested students on all campuses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student Tracking

Please rate the following student tracking activities according to your agreement that they are effective for student nurse recruitment. Use the following scale.

- 1-Strongly Disagree
- 2-Disagree
- 3-Neutral
- 4-Agree
- 5-Strongly Agree

<u>Student Tracking</u>	1 (Strongly disagree)	2	3	4	5 (Strongly agree)
29. Department maintains demographic data on students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. College keeps a database for all inquiries by major code.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Department tracks students once they are enrolled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Department maintains records on GPAs and graduation rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Faculty meets with all first semester students with a failing average at midterm to evaluate their plan for improvement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Faculty maintain progress notes on students in their student file.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Department maintains a database on current nursing students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Tracking students is not necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell me about yourself.

1. My relationship with the community college is: _____ Faculty or _____ Student

2. I have been in the nursing program for: _____ years.

3. What is your gender?: _____ Male or _____ Female

4. What is your ethnicity?

- _____ Hispanic
- _____ African American
- _____ Caucasian
- _____ Asian/Pacific Islander
- _____ Other or multicultural

5. What is your age? _____ years.

APPENDIX F
DELPHI LETTER AND ROUND I

**Delphi Study
Initial Survey
Mary Lewis, Researcher**

Thank you for volunteering to serve as an expert participant in this **Delphi study**, that focuses on:

**AN EXAMINATION OF BEST PRACTICES IN RETENTION IN THE
ASSOCIATE DEGREE NURSING PROGRAM
IN THE FLORIDA COMMUNITY COLLEGE SYSTEM**

Your participation in this **Delphi study** is voluntary. There is no compensation for your participation and you may withdraw from the process at any time.

As an initial step in this **Delphi study**, I am asking that you provide basic demographic information about yourself as a participant-volunteer. I will not share your information with any of your fellow participants or anyone else, and it will remain in the exclusive custody of my dissertation research supervisor and me. Your identity will furthermore remain anonymous throughout the Delphi process.

If you have any questions about this research project, please contact me at 239-489-1361 (cell), 239-691-0603 (Home), 239-489-9214 (Office) or via E-mail mlewis@edison.edu. Thank you again for your participation in this **Delphi study**, which is a precursor to my formal dissertation research.

Please complete and return this survey to the researcher via email attachment on or before April 15, 2005.

Personal Information

1. Name: _____
2. Phone number: _____
3. Email address: _____
4. Age: _____
5. Gender: _____
6. Job title/rank: _____
7. Years of experience in higher education: _____
8. Years of experience with nursing education: _____
9. Years of practical experience [teaching or administrative in nursing field] exclusively at a community college: _____
10. Years of experience working in any capacity in the community college setting:

11. Highest nursing degree earned:

Institutional Information

1. Institution name: _____
2. Campus Location: _____
3. Primary Assignment (Faculty or Administrator): _____
4. Estimated number of enrolled nursing students in your program area on a semester basis: _____
5. Estimated number of students in Associate Degree in Nursing (ADN) program on an annual basis: _____

6. Number of years that your community college has been offering courses in nursing education: _____

7. Highest degree possible in Nursing at your institution:

8. Identify any methods that that you use [or the institution uses] to **recruit** students to your program. Clarify whether the method is individualized or institutionalized.

9. Identify any methods that you use [or the institution uses] to **track students** in your program. Clarify whether the method is individualized or institutionalized.

10. Identify any methods that you use [or the institution uses] to **retain** students in your program.

Clarify whether the method is individualized or institutionalized.

APPENDIX G

IRB FORMS



Office of Research & Commercialization

January 18, 2005

Mary Lewis, MBA,MSN
5603 Amoroso Dr.
Fort Myers, FL 33919

Dear Ms. Lewis:

With reference to your protocol # 2260 entitled, "An Examination of Best Practices in Retention in the Associate Degree Nursing Program in the Florida Community College System" I am enclosing for your records the approved, expedited document of the UCFIRB Form you had submitted to our office.

Please be advised that this approval is given for one year. Should there be any addendums or administrative changes to the already approved protocol, they must also be submitted to the Board. Changes should not be initiated until written IRB approval is received. Adverse events should be reported to the IRB as they occur. Further, should there be a need to extend this protocol, a renewal form must be submitted for approval at least one month prior to the anniversary date of the most recent approval and is the responsibility of the investigator (UCF).

Should you have any questions, please do not hesitate to call me at 407-823-2901.

Please accept our best wishes for the success of your endeavors.

Cordially,

A handwritten signature in cursive script that reads "Barbara Ward".

Barbara Ward, CIM
IRB Coordinator

Copies: IRB File



THE UNIVERSITY OF CENTRAL FLORIDA
INSTITUTIONAL REVIEW BOARD (IRB)

05-2752

IRB Addendum/Modification Request

INSTRUCTIONS: Please complete the upper portion of this form and attach all revised/new consent forms, altered data collection instruments, and/or any other documents that have been updated. The proposed changes on the revised documents must be clearly indicated by using bold print, highlighting, or any other method of visible indication. The Addendum/Modification must be sent the IRB Office: ATTN: IRB Coordinator, 12443 Research Parkway, Suite 301, Orlando, FL 32826, Email: IRB@mail.ucf.edu, Phone: 407-823-2901, Fax: 407-823-3299.

▪ **DATE OF ADDENDUM:** 7/19/2005 to IRB# 2260

PROJECT TITLE: AN EXAMINATION OF BEST PRACTICES IN RETENTION IN THE ASSOCIATE DEGREE NURSING PROGRAM IN THE FLORIDA COMMUNITY COLLEGE SYSTEM

▪ **PRINCIPAL INVESTIGATOR:** Mary Lewis

▪ **MAILING ADDRESS:** 5603 Amoroso Drive, Fort Myers, Florida 33919

▪ **PHONE NUMBER & EMAIL ADDRESS:** (Home) 239-489-1361; (Cell) 239-691-0603; (Office) 239-489-9214

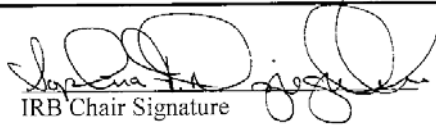
▪ **REASON FOR ADDENDUM/MODIFICATION:** Survey was developed from Delphi Process and was not evaluated by IRB initially.

▪ **DESCRIPTION OF WHAT YOU WANT TO ADD OR MODIFY:**

▪ The Delphi Process is followed by focus groups of faculty and focus groups of graduating nursing students from participating nursing programs. They will be asked to complete this survey during the focus group. See attached.

SECTION BELOW - FOR UCF OOR/IRB USE ONLY

Approved Disapproved
 Full Board Chair Expedited


IRB Chair Signature

7/27/2005
Date

APPENDIX H
INTERVIEW PROTOCOL

Student Interview Protocol

Please answer the following questions. You do not have to respond to any question you do not want to answer. Please be aware that in signing the consent form this interview will be audio recorded and the discussion will be transcribed from the recording. All information discussed will be confidential and only known to the researcher and the focus group attendees.

Probes	Guiding Questions	Desired Information
<u>Recruitment</u>		
1. What are the institutional recruitment methods that attracted you to this nursing program? Were there any recruitment methods attracting you to this program?	1. How did you and your friends find out about the nursing program?	1. Perceptions of recruitment methods used by the institution.
2. What was the most influential recruitment method used attracting you to this nursing program?	2. What was the most attractive quality in your decision to attend this nursing program?	2. Student's perception of the best quality of this program.
3. What about this nursing program attracted you? Was there something in particular that attracted you to this program?	3. Describe how you felt when making your decision to attend this nursing school.	3. Student's perception of the quality of the decision to attend this nursing program.
4. Were there any specific benefits provided to you if you attended this program? Were there scholarships, associated employment or other benefits?	4. Were there any financial or economic gains to attending this nursing school?	4. Perception of importance of finances in planning for nursing education.
5. Prior to your admission to the nursing program, did you receive a nursing program guide? Was there a Web site or phone call that provided	5. What advertisement was used to recruit students that influenced you to attend this nursing program?	5. How did the student hear about this nursing program, Internet or printed materials.
6. Were there any activities presented to you like career fairs that attracted you to this nursing program?	6. Were there any presentations or fairs that attracted you to this program?	6. Whether any career fairs or other educational fairs attracted these nursing students to this program.
7. Did you have an interview before starting this nursing program? Was it helpful in planning your education?	7. Would you have liked to have had an interview with nursing advisors or faculty before enrolling in this nursing program?	7. Student's perception of importance and value of a personal interview in planning for nursing education.

Tracking

1. Are you aware of any methods that the institution tracks your progress?

1. Does the institution maintain student records or in any other way keep track of your progress?

1. Perception of the students that the institution tracks their progress accurately.

2. Does the nursing program keep track of your progress through the program?

2. Does the nursing program maintain student records or in any way keep track of your progress?

2. Perception of the student that the nursing program tracks their progress accurately.

3. Does anyone in the nursing program guide you through the program to help ensure your success and progress?

3. Is there guidance through the program to ensure your graduation and progress?

3. Perception of the student that there is a place to go to for guidance that can help them progress.

Retention

1. Are there any institutional efforts that you are aware of that help to make sure you stay in school?

1. Do you know of any institutional programs to help you to be successful at this college?

1. Perception of the student as to whether there are any institutional programs to help the student to succeed.

2. What are nursing faculty or program methods used to retain you as a nursing student?

2. Does the nursing faculty or nursing program have any methods or ways to help you to be successful in the nursing courses?

2. Perception of the student as to whether the nursing program has any assistance for the student.

3. Are there any methods to identify at-risk students?

3. How are students who have difficulty identified? By the student him/herself or by the faculty or by the program?

3. Whether the student feels the school watches them and assists them when they are having difficulty.

4. What are reasons that you were able to stay in school? Was anything the school or nursing program did helpful in your continued progress through the nursing program?

4. How were you able to manage going to school while maintaining your home and working responsibilities?

4. Student's perception of how they managed to overcome obstacles before finishing the nursing program.

5. Is the program set up, semesters or mini-mesters helpful in your ability to stay in the program?

5. How flexible is the program in being able to meet your needs? Can you give any examples?

5. Whether the program faculty, coordinators and directors hear the needs of the students.

6. Do you have enough time with your nursing professors?

7. Are there peer tutors or faculty tutors available?

8. Are there any support groups available for the nursing students?

9. What methods are used in the classroom?

10. What is the most important reason you have been successful?

6. Does your faculty offer time to spend with students?

7. Are there any tutors of any type in this nursing program?

8. What other types of support is available to nursing students?

9. Do you have test reviews?

10. What is the most important reason you have been successful?

6. Perceptions of having enough face-to-face time with the nursing instructors.

7. Discover whether tutors that are students or faculty are available and helpful for the nursing students?

8. Perception of whether there are support groups available for the nursing students.

9. Whether the students perceive that exam reviews are done in the classroom and whether teaching methods are helpful.

10. Perceptions of the student as to their success, whether their drive was extrinsic or intrinsic.

APPENDIX I

PERMISSION FOR REPRINT OF NURSING EDUCATION SCHEMATIC

November 14, 2005

Mary,

Feel free to use this schematic in your dissertation; I'm glad you find it helpful. The image comes from a presentation on nursing I made a few years ago. If you need to cite it, the complete citation is:

Karp, Melinda Mechur (2002, November 6). Nursing: The push for professionalization and equity. Presentation at Nursing Programs in Community Colleges: Equity, Access, and Workforce Development, CCRC Seminar Series, New York.

Good luck with your dissertation. Please keep us updated on your findings—ADN student retention is an important topic.

Melinda

Melinda Mechur Karp
Research Associate
Community College Research Center
Institute on Education and the Economy
Teachers College, Columbia University
212-678-3430

APPENDIX J
RESEARCH SUMMARY

RESEARCH SUMMARY

RESPONDENT	QUESTION	METHODS	INTENDED RESULTS
<p>Sample: Directors of the FCCS ADN (N=6) programs with a calculated retention rate of 79.1 percent or greater (Windham)</p>	<p>1. What are best practice recruitment methods for ADN programs? 2. What are best practice tracking methods for ADN programs? 3. What are best practice retention methods for ADN programs?</p>	<p>Delphi Process: Round 1: Demographics And First Questions Round 2: Verification of information received Round 3: Summation of results and delineation of best practices.</p>	<p>To develop a consolidated list of best practices as determined by the directors of nursing in the ADN programs in the FCCS.</p>
<p>ADN faculty (N=60)</p>	<p>1. What are the best practice recruitment measures of ADN nursing students from the list on the survey? 2. What are the best practice tracking measures of ADN nursing students from the list on the survey? 3. What are the best practice retention measures of ADN nursing students from the list on the survey?</p>	<p>Survey with items taken from the Delphi process.</p>	<p>Clarification from faculty point of view of frequency of responses of each of the listed practices.</p>
<p>Graduating Students (N=36) who have been successful in the ADN nursing program.</p>	<p>1. What are the best practice recruitment measures of ADN nursing students from the list on the survey? 2. What are the best practice tracking</p>	<p>Survey with items taken from the Delphi process. Focus group.</p>	<p>Determine from the survey and focus group the extent to which the survey responses agreed with student perceptions. The focus group allows</p>

	<p>measures of ADN nursing students from the list on the survey?</p> <p>3. What are the best practice retention measures of ADN nursing students from the list on the survey?</p>		<p>the student to insert any other topics they feel are important for the retention of nursing students in the ADN program.</p>
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