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**NO NURSING STUDENT LEFT BEHIND: NON-COGNITIVE  
SCREENING**

by

Letty Piper

A Dissertation  
Submitted to the  
Department of Educational Leadership  
College of Education  
In partial fulfillment of the requirement  
For the degree of  
Doctor of Education  
at  
Rowan University

Dissertation Chair: Burton Sisco, Ed.D

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## **ABSTRACT**

Letty Piper  
NO NURSING STUDENT LEFT BEHIND: NON-COGNITIVE SCREENING  
2011/12

Burton R. Sisco, Ed.D.  
Doctorate in Educational Leadership

With the growing shortage of nurses, the continuing flow of an adequate number of nursing students is important to the healthcare system. In an attempt to identify the non-cognitive factors, which influence attrition, a mixed-method, cross-sectional study was conducted. Students who had dropped out of a BSN program and those still enrolled were given a survey containing scales of self-efficacy, nursing professional alignment and Margin in Life. The students then participated in focus groups. The attritional students were found to have a significantly lower Margin-in Life score than those who had succeeded, and there was a correlation between the Margin in Life score and successful progression. Both sets of students identified that the need for margin was particularly important, as they transitioned into the first professional level courses. Students described being unprepared for the changes inherent in this transition. Enhancing transition skills, available at the time of entry into professional courses, could reduce the number of students who do not successfully transition by increasing their Margin-in-Life scores as a result of preparation and anticipation. This successful transition would increase the number of BSN graduates and the number of available nurses.

## **DEDICATION**

*To my husband Arthur*

*who has believed in me from the beginning. His warmth, support, patience and caring have made this document possible.*

*To Mary Ardelia Meadows*

*who raised me to believe that all things were possible, that I had something to offer the world and who stood by Me when others left. She was the rock on which I am built.*

*To Sydney and Freda Orlofsky*

*my parents who never had the opportunity to see me graduate, but who have been with me each time.*

## **ACKNOWLEDGMENTS**

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I want to acknowledge Lola Ames , my fellow searcher who from my first day in class became my partner and friend. I have learned so much from her that she could qualify as one of my professors. Thank you Lola for keeping my eye on the prize.

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## **Chapter I**

### **Introduction**

Remarks about the nursing shortage are by now commonplace. Since 20-25% of entrants to schools of nursing withdraw during the first year, reducing this attrition rate would alleviate the shortage. (Katzell M. , 1968, p. 154)

Despite the efforts of the nursing profession to reduce the attrition rate from schools of nursing, the shortage of nursing school graduates, discussed by Katrell (1968) as far back as 1968, remains and actually may have increased. The Health Resources and Services Administration (HRSA) predicts that the United States will need to graduate 90% more nurses to meet the growing demand (HRSA, 2006). The projected demand for new nurses from 2000 to 2020 is predicted to be 2.8 million (Buerhaus, Staiger, & Auerbach, 2000).

There are many reasons for the continuing shortage, an increased demand for care (Auerbach, Buerhaus, & Staiger, 2007) and a limited capacity for production of new nurses (PA Department of Health, 2010). The number of baby boomers who require care is rising as the average life span lengthens and there are more survivors of disease. The aging of patients has increased not only the number of patients but also the complexity of care (Barter & McFarland, 2001; Cameron, Roxburgh, Taylor, & Lauder, 2011a&b; Deary, Watson, & Hogston, 2003). This added complexity requires a higher level of nursing education and more nurses (Auerbach et al., 2007).

The educational path of nurses, to care for these more complex patients, is increasingly moving to universities where the process toward degree attainment takes longer (AACN, 2011). At the same time, nurses are finding work in fields other than direct care positions, such as for insurance companies, medical equipment vendors, and information systems developers. Women, the traditional source of the vast majority of nurses, are now entering other occupations at a rate greater than men are entering nursing (Kuehn, 2007). This is not just a problem in the United States but impacts the nursing profession globally (Bowden, 2008; Cameron et al., 2011; Dante et al., 2011; Glossop, 2002).

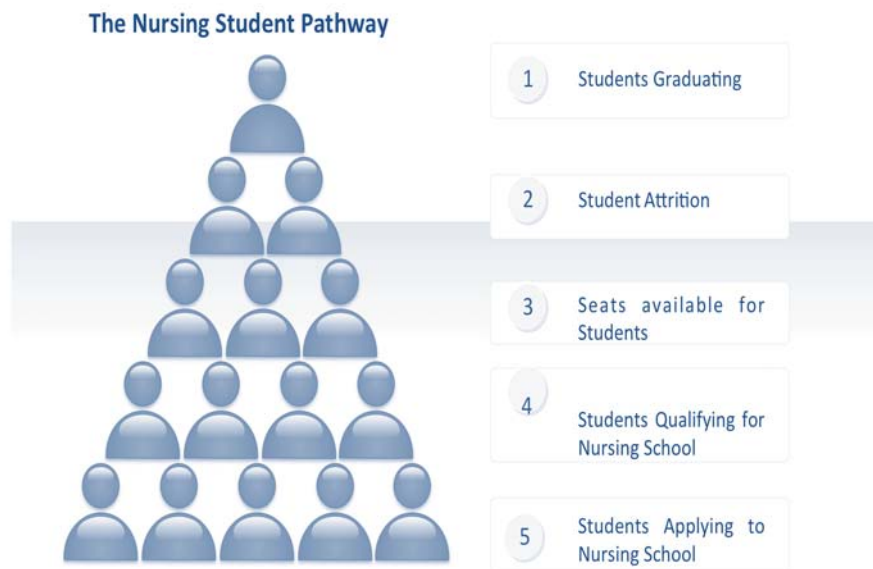
The average registered nurse is now close to 50 years of age (AACN, 2011). This upwardly creeping statistic predicts a severe shortage in approximately 20 years when the baby boomer nurses retire in greater numbers. Without a source of increased production or graduations, the healthcare system will face difficulties caring for the population.

### **Background of the Problem**

The National League of Nursing (2010) reports, that during the academic year 2008-2009, the attrition rate in baccalaureate nursing programs across the country was approximately 20%. The perseverance of student nurses is an important component of any solution to the current shortage of nurses (Crow et al., 2005; Jeffreys, 2007; Papes & Lopez, 2007; Rudel, 2006). A conservative estimate of the number of additional Registered Nurses needed by 2020 is 350,000 (AACN, 2001; Auerbach et al., 2007).

**Nursing shortage.** This shortage of Registered Nurses is a worldwide problem (Dante et al., 2011; Jeffreys, 2007; Kantek, 2010), for example in the United Kingdom the student nurse attrition rate was reported by the Royal College of Nursing as 20%

(Last & Fulbrook, 2003). One study reported a rate of 7% in Turkey (Kantek, 2010). In Italy it is reported that there is a shortage of over 60,000 nurses, with 2.4 applicants for each seat in the Colleges of Nursing (Dante et al., 2011). Figure 1 demonstrates the pathway of nursing students and the factors that reduce the number of individuals involved at each step, beginning with application to school.



*Figure 1.1.* The Nursing Student Pathway, An illustration of the decline in numbers of individuals involved in each step of the Nursing Student Pathway. Note this is solely a representation of a process, it is not proportional to actual numbers of persons involved.

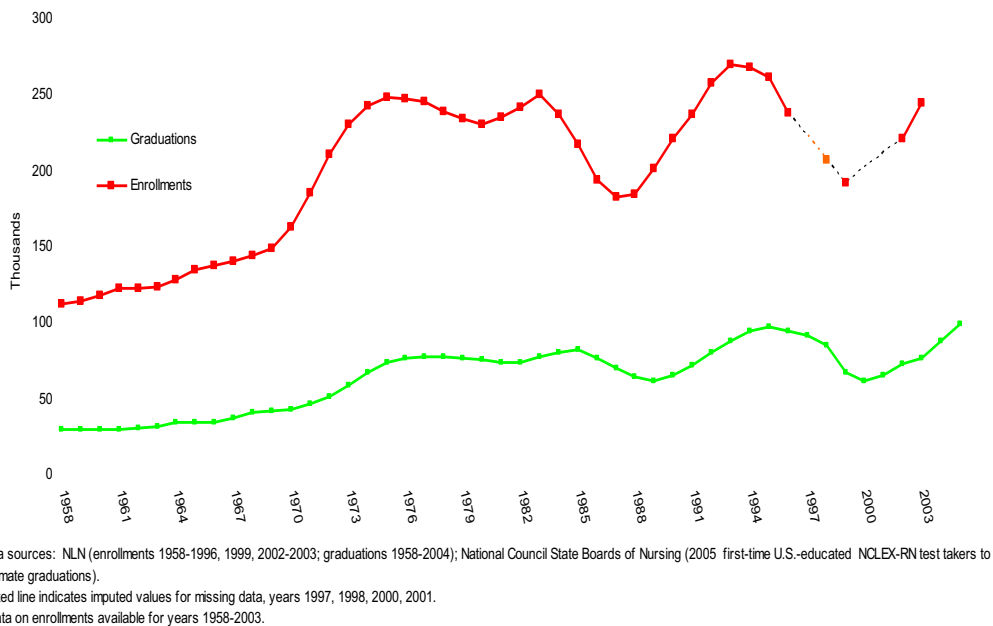
**Faculty shortage.** One solution to solving the shortage might be to increase the production of nurses. Unfortunately there are factors inhibiting this solution. There is a shortage of nursing faculty (AACN, 2001) and the average age of faculty members is their mid-fifties, with many approaching retirement. Moreover those nurses, who are prepared at the masters and doctoral level for educational roles, are being recruited to advanced nurse practitioner positions as well as administrative roles. The competition for



these highly prepared nurses is strong and the salaries in the non-academic environment are higher (Kuehn, 2007). This places a great strain on the available faculty.

Along with the shortage of faculty members there is a shortage of clinical sites for training due to the decline in the number of hospitals and hospital beds during the last 30 years (U.S. Census Bureau, 2007). The number of community hospital beds per 100 thousand population dropped from 436 in 1975 to only 280 in 2003 (Kaiser Family Foundation, 2006). Two hundred and thirty eight general medical-surgical hospitals closed between 1997 and 2007 in the United States (U.S. Census Bureau, 2007).

Concomitant with the closure of hospitals, numerous closures of hospital-based nursing schools have occurred. Nursing schools in the United States originated in the 1870s in hospitals, following the model developed by Florence Nightingale. These schools were operated by the hospitals and by the middle of the 20<sup>th</sup> century there were as many as 1300 diploma programs. These programs were essentially apprenticeships. With the advent of community colleges and the growth of baccalaureate nursing programs the number of diploma programs in the United States has declined to 69. They now produce only six percent of the nations nurses (Vicky, 2007). All non-diploma schools must negotiate with hospitals for the opportunity to use their clinical sites. These hospitals may be reluctant to provide such opportunities (AACN, 2011). The schools of nursing have turned increasingly to simulation as a way of providing needed critical experiences (Nehring & Lashley, 2009). Increased graduation rates would require growth in faculty, increased clinical experiential sites, and a reduction in attrition among nursing students. The necessary increase in faculty and the development of clinical alternatives will be time consuming and costly. If there is a concentration on prevention of attrition, there may be a faster and less expensive way to increase the current production of nurses.



*Figure 1.2. Data Demonstrating the Gap Between Enrollments and Graduations (Aiken & Cheung, 2008, p. 16)*

Attrition from a school of nursing produces an "empty airline seat" once the cohort has begun, due to the sequential nature of the programs. Although schools of nursing screen for aptitude and scholarship prior to admission, it appears from the unchanging attrition rates that there is a screening that nursing schools are missing (Aiken & Cheung, 2008; Grossbach & Kuncel, 2011; McNelis et al., 2010; Wolkowitz & Kelley, 2010). Figure 2 demonstrates the admissions and graduations from American nursing schools since 1958, the gap between the admissions and graduations or attrition remains essentially constant despite the increase in both numbers.

**Non-cognitive elements.** An additional screen for non-cognitive elements of perseverance may lower attrition. After enrollment, for some students, the nursing profession may not meet their expectations (Cameron et al., 2011a; Cameron et al.,

2011b; Crow et al., 2005; Gilchrist & Rector, 2007; Mulholland, Anionwu, Atkins, Tappern, & Franks, 2008; O'Donnell, 2011; Rudel, 2006). For some they will find that their major is more rigorous than they expected, that it is more academic than vocational (Cameron et al., 2011a; Cameron et al., 2011b; Gardner, 2005a & 2005b; Gilchrist & Rector, 2007; Jeffreys, 2007; Mulholland et al., 2008; Newton & Moore, 2009; O'Donnell, 2011; Rudel, 2006). Some may find that the workload is too great and the time management too difficult when school is added to family and childrearing responsibilities, jobs, and financial demands (Cameron et al., 2011; Cameron et al., 2010; O'Donnell, 2011; Jeffreys, 2007; Rudel, 2006; Wells, 2007). Attrition may be due to academic failure or impending failure (Cameron et al., 2010; Gilchrist & Rector, 2007; Newton & Moore, 2009). All of these reasons have to do with dissatisfaction or lack of fit.

When Mildred Katzell (1968) published her findings from her doctoral dissertation work, she referenced work by R.A. Katzell, Barrett, and Parker (1961) to explain how attrition was related to dissatisfaction with the current situation and a belief that an alternative would be better. Katzell (1968) also relied on March and Simon (1958) who used the concepts of "rewards and contributions and suggested that the difference be estimated from measures of satisfaction, since the greater the excess of rewards over contributions, the greater should be satisfaction" (Katzell, M., 1968, pp. 154-155).

To further explain these causes of attrition, Kibrick (1963) examined dropouts from nursing schools and found that:

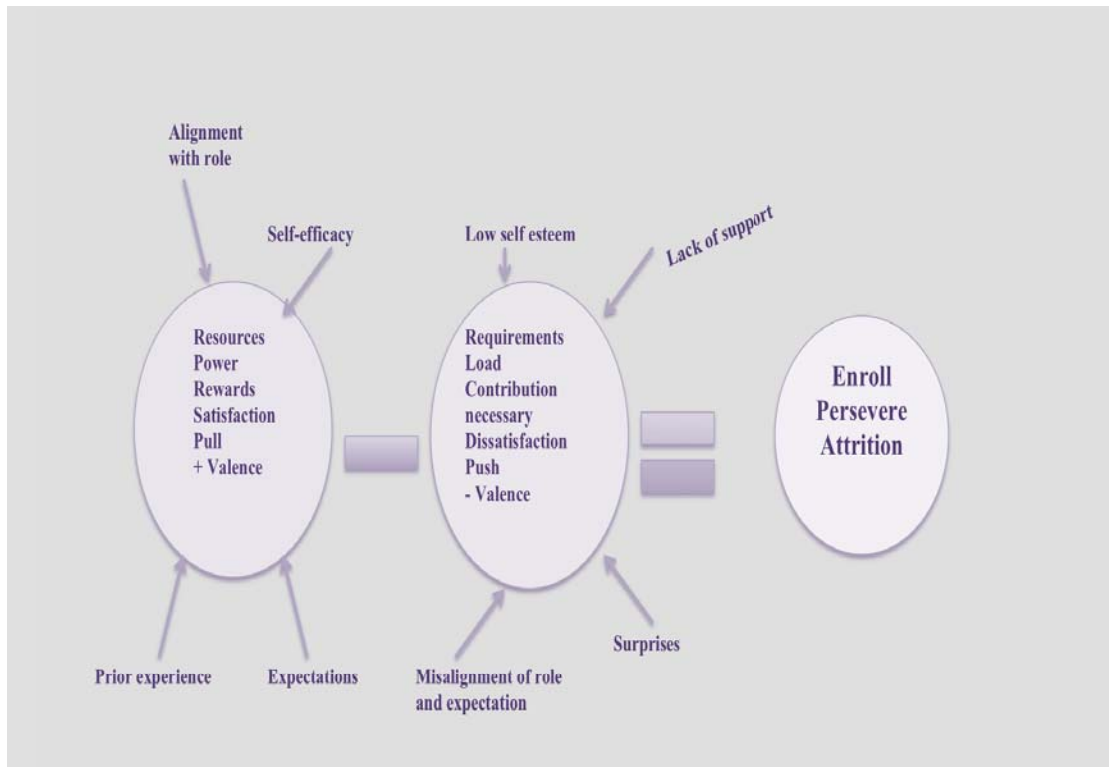
the literature indicates that aptitude tests, achievement tests and previous school records when combined do serve to eliminate some students who could not

complete the program. These selection devices on the other hand fail to screen out approximately one third of those admitted. There is probably no way a school can control the number who withdraw because of personal reasons, but there may be a means of reducing those withdrawals due to dislike for nursing, disappointment in nursing, or personalities not suited to nursing. It is not unlikely that many dropouts attributed to academic failure are due to such factors as well as the reality experience of the first few months. (p. 140)

As another way of looking at the issue, Kibrick and Tiedeman (1961) explored the concept of self and the perception of role in nursing school. They studied nursing students in a school where they were previously screened for a nursing aptitude and intelligence. The development of a concept of self in relation to a vocation means that the individual compares him or herself to their ideal image of that vocation. If there are discrepancies, they decide if they can be overcome. The writers assert, "perceptual distortion of self or of anticipated requirements predisposes towards termination of the desire for a particular vocation objective" (p. 63).

Many researchers have discussed a basic calculation performed by an individual to determine if they possess the necessary skills and energy to continue in their current path, or to enter a new path. Bandura (1977), Main (1979), McClusky (1971), Vroom (Gyurko, 2011), O'Donnell (2011), and Wells (2007) all describe this equation with different terms, but the essential elements are the resources of the individual minus the stress placed on the individual by the alignment of their goals with the resources necessary for goal achievement. This conceptual framework is shown in Figure 1.3. If the result of the equation is positive or demonstrates excess resources, the individual is likely

to persevere and make the necessary adjustments. If there is a perceived deficit, individuals are likely to attrition or not enroll. "The decision to enroll is a decision to initiate an experiment, a possible outcome of which is to dropout" (Montmarquette, Mahseredjian, & Houle, 2001, p. 475).



*Figure 1.3.* Continuous Calculation Conceptual Framework. Synthesized from Bandura (1977), McClusky (1971), Vroom (Gyurko, 2011), March & Simon (1961), Young, Lockyer, & Glogowska (2006), concepts of persistence.

Self-efficacy, by an individual, is unique to that individual. To understand that uniqueness requires a multitude of lenses by which to explore the foundations of the individual. This study uses multiple but related lenses to investigate elements that impact attitudes. The lenses include McClusky's (1971) power-load-margin, Vroom's expectancy valence (Gyurko,2011) and Katzell's (1963) satisfaction and dissatisfaction theories. It

explores the student's attitudes of self and the ideal nurse and examines how misalignment can influence attrition.

The conceptual framework for this study, displayed in Figure 1.3, is a synthesis model of these lenses and the literature about what influences nursing student attrition. It establishes the elements of the continuous calculation of a person's ability to persist. The calculation is performed prior to enrollment, during enrollment, and upon entry into practice. It is not important whether the term resources, power, satisfaction or valence is used to describe the ability of the individual to believe that they are capable of the task. This determination of ability is influenced as O'Donnell (2011) states by self-efficacy, prior experiences in life and schooling, perception of the goal, and others expectations.

The ability to succeed is measured against the requirements, load, dissatisfaction, negative valence or contribution necessary to achieve the goal. This portion of the equation is influenced by low self-esteem, lack of support, misalignment of reality, and surprises. When the pull of these factors is greater than or close to the push of the determination of ability, an individual is likely to choose not to persevere. This is likely a continuous calculation (Chapman, 1981) that is done prior to engaging in attaining a goal and as the self receives feedback while seeking the goal.

McClusky (1971) offers a model calculation in his power-load-margin theory. The theory states that an individual determines the power available within themselves and their environment and subtracts the load or stress that is involved in achievement of a goal. Figure 1.4 represents Stevenson's (1980) interpretation of the formula. Load is defined as external and internal load. External being environmental factors and internal being physiological and intellectual, such as self concept. Power is defined as the opposite of load, any source of energy that permits one to accomplish tasks. Margin is

what is required to meet new demands of life. A certain level is required to be available for the unexpected situations of life (Stevenson, 1980).

$$1.0 \text{ (or 100\%)} \text{ minus } \frac{\text{LOAD(I)}}{\text{POWER(I)}} = \text{MARGIN}$$

*Figure 1.4.* Margin in Life Calculation. Source: (Stevenson, 1980, p. 52)

Stevenson (1980) describes the result of this equation is the margin available to undertake a new or ongoing task. Many researchers use a similar formula or paradigm to discuss how individuals persevere or attrition. Vroom (1964) discusses positive and negative valences that act upon the individual. Marsh and Simon (1958) discuss reward, contribution, and participation. Katzell (1963) discusses satisfactions, dissatisfactions, and attrition propensity. Young, Lockyer, and Glogowska (2006) use the concept of a push and pull mechanism at work on students.

### **Statement of the Problem**

There is and continues to be a critical shortage of nurses throughout much of the globe for the next 30 years (Buerhaus et al., 2000; Glossop, 2002; Kennedy, McIsaac, & Bailey, 2007). Attrition in schools of nursing contributes to this shortage (Canadian Nurses Association, 2009). The cognitive testing currently utilized by a majority of nursing schools to screen admission, consistently fails to identify the 20-30% of students who will attrition (Katzell, M., 1968; Kibrick & Tiedeman, 1961; McNelis et al., 2010; Timer & Clauson, 2011). Table 1.1 presents a timeline of facts related to Nursing Schools and Graduations. For example in their meta-analysis of student nurse success covering 1981 to 1990, Campbell and Dickson (1996) examined 47 articles in the literature, 94% showed the correlation between GPA and graduation, only a little over 5% of the studies

looked at self-concept/esteem as a graduation, retention or *National Council Licensure Examination* (NCLEX) success predictor.

Table 1.1

*Timeline of Facts about Nursing Schools*

Variable	1960s	1970s	1980s	1990s	2000s
<b>Attrition Rate<sup>1</sup></b>	36%	33%	26%	46%	23%
<b>Schools of Nursing</b>	Dip- 85%		BSN- 450 31% <sup>5</sup> DIP- 225 16% <sup>5</sup> ADN- 775 53% <sup>5</sup>	BSN- 650 38% <sup>5</sup> DIP- 70 4% <sup>5</sup> ADN- 950 58% <sup>5</sup>	
<b>Admissions to Nursing School<sup>5</sup></b>		110,000 per year	118,000 per year	129,000 per year	166,000 per year
<b>Graduations from Nursing School<sup>5</sup></b>		75,000	70,000	92,000	90,000
<b>Applications to Nursing School<sup>6</sup></b>		240,000	240,000	255,000	349,000
<b>Scholars</b>	Kibrick Katrell Durkheim	Spady Tinto Bandura Pascarelli & Terenzini	McClusky Munro Bean & Metzner Stevenson	Aiken Buerhaus	Glossop Jeffreys Ofori Sadler Wells
<b>Average Age of RN</b>		33.4 <sup>2</sup>	37 <sup>3</sup>	42 <sup>3</sup>	48 <sup>7</sup>

*Note:* 1. (Aiken & Cheung, 2008); 2. (Hixson, Boehlert, Reid, & Rodgers, 1981); 3. (HFMA, 2000); 4. (Elgie, 2007; National League for Nursing, 2008); 5. (National League for Nursing, 2008); 6. (Institute of Medicine (IOM), 1983) 7. (AACN, 2001).

In more recent years nursing researchers have attempted to identify the non-cognitive factors such as self esteem, that influence student behavior. They have pointed out that stress levels, self-efficacy, and conceptual alignment are all components of the



problem (Cameron et al., 2010; Deary et al., 2003; Glossop, 2002; Jeffreys, 2004; O'Donnell, 2011; Wells, 2007).

Most schools of nursing, and particularly the university that was utilized in this study, use the applicants' academic history to predict success. The *Scholastic Aptitude Test* (SAT), high school and college GPA in the sciences and mathematics are measured. These have been tested (Grossbach & Kuncel, 2011; McNelis et al., 2010; Wolkowitz & Kelley, 2010) and determined to be predictive of passing the NCLEX. These scores predict ability to persevere through licensure but may not predict likelihood of perseverance. This study examined non-cognitive factors that influenced the perseverance decisions of student nurses. Prediction of these factors could reduce the attrition rate and raise the graduation rate in schools of nursing.

Attrition propensity is the construct that this research sought to clarify. If applicants for a nursing school could be identified as having a propensity for attrition, a low margin-in-life, a low level of self-esteem, a negative valence with regard to nursing, these findings would contribute to the selection of qualified students more likely to persevere. It appears that there is more to qualifying for nursing school than the cognitive tests currently reflect. Aptitude and achievement are important components of successful completion but it appears, through the unchanging attrition percentage, that there is something more to avoiding attrition. It may be a non-cognitive factor or combination of factors such as unrealistic expectations, self-concept, nursing concept, health, financial security, or a stable support system. While the current research has pointed to certain factors in attrition, there is little research into the interaction of these factors. This gap in the literature is important to fill and may provide a cost effective way to increase perseverance and graduation rates.

## **Purpose of the Research**

The purpose of this research was to examine attrition in nursing applicants. The study proposed that if applicants for a nursing school could be screened for having a propensity for attrition, defined as, a low margin-in-life, a low level of self efficacy, or a negative valence with regard to nursing; these findings would contribute to the identification of otherwise qualified students who are less likely to persevere. These qualities were defined as non-cognitive.

The long-term goal was to reduce the attrition of nursing students so that more will graduate and more will enter the Registered Nurse ranks. This would help to resolve some of the shortage of nurses. By screening students on application, it was hoped that other students, equally qualified cognitively, could be enrolled. The larger the initial cohort of students, and the lower the attrition, then the greater the number who will graduate.

## **Operational Definition of Terms**

1. Attrition: Having taken at least one nursing course (NURS prefix) at Salla University nursing program and being currently enrolled in a non-nursing program at Salla University within 2010-2012 academic years.
2. Attrition Propensity: A likelihood of attrition from a nursing program prior to graduation due to non-cognitive factors, excluding finances, health or family emergencies (Aiken & Cheung, 2008).
3. Barrier: An obstacle to achievement of a goal. It may be institutional, situational, dispositional, or environmental.
4. BSN: A baccalaureate degree in nursing at an accredited school of nursing.

5. Cognitive: Pertaining to processes of perception, memory, judgment, and reasoning.
6. Diploma School: A school of nursing owned and operated by a hospital.
7. External Load: "factors in the environment: the usual task of life related to family, work or community. Socio economic status, educational level and religious practices" (Stevenson, 1980, p. 52) are included.
8. Internal Load: "includes factors within the person: physiological functioning, intellectual development, self-concept and goals" (Stevenson, 1980, p. 52).
9. Margin: The "vitality (in the physiological sense) and the modicum of freedom (in the sociocultural sense) that each person must have to meet new demands" (Stevenson, 1980, p. 52).
10. MIL: The *Margin-in-life* scale developed by Joanne Stevenson (1982) to measure the Power Load ratio described by Howard McClusky (1971).
11. NSDF: *Nurses Self-Description Form* developed by Dagenais and Meleis (1982) to measure alignment of a student's relation to others in the profession.
12. NSES: *New Self-Efficacy Scale* developed by Chen, Gully, and Eden (2001) to measure self-efficacy based on Bandura's self-efficacy beliefs (Bandura, 1977; 1997).
13. Non-Cognitive Factors: Factors pertaining to self-efficacy, margin-in-life, and professional congruency as defined by students participating in the study.
14. Paradigm: A lens or world view.
15. Perception: The analysis of group events and emotions which an individual establishes to describe the occurrence.

16. Perseverance: Having achieved the rank of a senior student at Salla University nursing program during 2010-2012 academic years.
17. Power: "any source of energy that can be used to accomplish the work required by a particular load" (Stevenson, 1980, p. 52).
18. Power-Load-Margin: The ratio of load to power, the vibrancy necessary to engage in a new effort.
19. Professional or Nursing Self-Esteem or Self-Efficacy: The acquired set of beliefs about the self in relation to ideal nurse as measured by NSDF.
20. Salla University: A pseudonym for the name of the university where the study was conducted.
21. Satisfaction: Is an output variable (satisfaction or dissatisfaction) based on the input of the individual's expectations and the perception of reality.
22. Self-Efficacy and Self Concept: Used interchangeably in this study to refer to the acquired set of beliefs about the global self.

### **Assumptions and Limitations**

This research assumed that students would voluntarily agree to complete the instruments. Also, it was assumed that the students would understand the questions on instruments and the process for completing the instruments, and that the students, in the study would be truthful and honest in their responses.

The limitations of this research are that it only included students at Salla University who have either attained the rank of seniors or have transferred out of the School of Nursing and into the School of Health Studies after taking at least one course,

during the 2010-2012 academic years. Along with its homogeneity, the sample was selected at convenience and therefore cannot be generalized to a total population.

The number of participants involved is also a limitation. A total of 102 students or approximately 50% of the population, completed the instrumentation. Only 9 of the 102 participants were involved in the focus group. The sample also included students over the age of 18 and who were able to read English. This limited sample makes it impossible to extrapolate to the total population but it does allow for testing to what extent non-cognitive factors influenced perseverance.

I also acknowledge the potential for researcher bias due to my age, ethnicity, education, and social position. I am a 65 year old, female, white, well-educated, middle-class, nurse educator. I am not of the participant's generation, and in some cases not of their race or gender. I am a parent to children older than the participants. This bias was held in regard as the analysis was conducted. Also, my position as a faculty member may inhibit truthful completion by students, despite the fact that I do not teach in the sample's program.

### **Research Questions**

This study sought to address the following research questions:

1. Is there a difference in the mean scores for the NSES total score, NSDF total score, and PLM ratio of the NS and TS groups?
2. Is there a significant difference in the NSES total score, NSDF total score, and PLM ratio of NS and TS?
3. If a significant difference in mean scores exists, in which subscales or indicators was the difference significant?

4. Is there a significant relationship between the NSES total score, NSD total score, and PLM ratio of NS and TS?
5. What do students perceive as the non-cognitive barriers they faced while enrolled in the school of nursing?
6. What do students perceive as the techniques they utilized to attempt to overcome the non-cognitive barriers?

### **Potential Contribution of Study**

The potential contribution of this study to the nursing evidence base is that there may be additional screening techniques that could assist in choosing candidates for the limited number of nursing school seats. This additional screening could reduce student attrition and increase graduation rates. It could also improve the social justice of the nursing school admission process by permitting a greater number of students likely to graduate. This should reduce the number of qualified students who are currently denied or delayed admission to a nursing school, as well as the emotional pain associated with denial and delay (O'Donnell, 2009; Wells, 2007).

O'Donnell (2009) points out how the current process imposes significant mental hardship on those denied admission as well as those who attrition. Wells (2007) believes that "the consequences of student attrition are realized by the student, the college of nursing and the nursing profession" (p. 440). I would suggest that it is the instructors as well who share the pain of those who attrition. Their loss to the profession is profound in its impact on the delivery of care. The goal of educators is the success of students. The pain that I felt, working with students who faced attrition, contributed to my desire to explore this research.

This research is designed to contribute to the understanding of non-cognitive screening of applicants to the profession I so dearly love. Nursing has been a perfect fit for me from the first day and has brought me untold joy. My greatest hope is that more students will find their way to that same joy.

### **Overview of the Study**

The second chapter of this study covers the initial literature review conducted to develop the conceptual framework and the research questions. Additional literature review was conducted following the focus group sessions and is included in Chapter V. The third chapter is an exploration of my leadership platform and my nursing credo, which was important to my preparation for the study. The fourth chapter describes the methodology employed and the fifth chapter presents the findings of the study and answers the research questions. The final chapter defines how taking the data derived from the study, I was able to make meaning for myself and for future research.

## **Chapter II**

### **Literature Review**

#### **Introduction**

According to Urwin et al.(2010), attrition and persistence are part of:  
a complex phenomenon, relating to education and social development of the student prior to commencement; to the social and academic engagement between the student and the institution; and the clarity and commitment of purpose placed on being at the University by the student. (p. 206)

This literature review focuses on studies that have analyzed the phenomenon of attrition and persistence. Emphasis is placed on studies that attempt to identify the factors that influence attrition and/or persistence in baccalaureate education and specifically baccalaureate nursing programs (BSN). Since the shortage of nurses is a worldwide issue (Cameron, Taylor, & Lauder, 2011; Deary et al., 2003; Glossop, 2002; Kanteek, 2010), it has been reviewed in journals around the world. This literature review includes domestic and international studies conducted by both nursing and non-nursing researchers. This review has demonstrated a gap in the literature related to a nursing student's attrition propensity due to non-cognitive factors.

The non-cognitive factors identified by numerous authors (Cameron et al.,2011; Campbell & Dickson,1996; Dagenais & Meleis, 1982; Deary et al., 2003; Glossop, 2002; Jeffreys, 2004; Last & Fulbrook, 2003; Munro 1980; O'Donnell, 2009; Wells, 2007) are



explored as well as traits that cause such factors. This is accomplished by using the various lenses by which the factors can be viewed. Moreover there is a discussion of tools available to measure the factors identified in the literature review. This review begins with the root of the issue, the nursing shortage, and looks at ways to improve the graduation of student nurses by improving the screening of those students.

### **Shortage of Nurses**

The persistence of nursing students is an important component of any solution to the current shortage of nurses (Crow et al., 2005; Jeffreys, 2007; Papes & Lopez, 2007; Rudel, 2006). A conservative estimate of the number of registered nurses needed by 2020 is 350,000. This is a result of the combination of aging nurses, the baby boom population aging, and the increased intensity of nursing care required (Kuehn, 2007).

In 2002, Health Resources and Services Administration (HRSA) developed a demand and supply model which used empirical data and used input from experts in the field. They calculated a demand in the year 2000 for 2 million registered nurses demonstrating a shortage of 110,000 nurses or 6% shortage. Using the factors of a growing elderly population and retiring nurses, HRSA projected that at the current nurse production rate there will be a 29% shortage by 2020 (Robertson, Canary, Orr, Herberg, & Rutledge, 2010).

Nursing has become a very desirable goal for first and second career students due to its relatively high salaries, its flexible hours, and its many and diverse work locations (Candgelosi & Whitt, 2005). One response might be for schools of nursing to just increase output. Unfortunately schools of nursing in the United States turned away an estimated 42,000 qualified applicants in the 2007 school year due to limited faculty,

classroom facilities, and clinical placement sites (Kuehn, 2007). Yordy (2006) describes the aging of nurses by pointing out that with the average age of practicing nurses in their late 40s and the average age of nursing faculty in the mid 50s, and the average retirement ages in the 60s, the shortage will not be solved quickly. There will be a high demand and unmet need for many years.

The colleges, unfortunately, find that there is stiff competition for qualified nursing faculty. Competition comes not only from other universities but also from the hospitals that have raised experienced nurse's salaries to attract the brightest and the best. These salaries are significantly higher than general faculty salaries (Kuehn, 2007). In addition, colleges compete with each other for available clinical experiences in health care institutions. Since nursing is no longer taught in hospital-based schools, hospitals are often independent of the college. Hospital facilities are in high demand as clinical sites.

### **Attrition**

Attrition and persistence are difficult terms to define and even more difficult to track (Robertson et al., 2010). Nursing students can be very mobile and their course of study is not always continuous. Many authors have tried to define the terms but alas even with definitions the statistics are difficult to obtain (Jeffreys, 2007; Papes & Lopez, 2007; Robertson et al., 2010).

What is evident is that the rate of nursing school attrition has not varied substantially in over 50 years (Aiken & Cheung, 2008; Katzell, 1968). Katzell reported a 20-25% attrition rate of student attrition in 1968, which continues to this day. In analysis conducted by the State of Pennsylvania (Pa Department of Health, 2010) demonstrating a

24% nursing student attrition rate, in the academic year 2008-2009, they found the following mix of reasons given by the schools (Table 2.1):

Table 2.1

*Pennsylvania Nursing Education Programs: Reasons for Student Attrition (N=120)*

Reason	RN- BSN	RN- Diploma	RN- ADN
Academic Failure	50%	54%	53%
Financial Issues	3%	3%	3%
Change in career goals	22%	14%	9%
Health	2%	8%	5%
Relocation	3%	1%	1%
Other	20%	20%	18%

*Note.* Data from responding Programs in Pennsylvania in 2008 (PA Department of Health, 2010).

In their assessment of nursing workforce for Organization for Economic Co-operation and Development, Aiken, and Cheung (2008) determined that "the national shortage (of nurses) could be largely addressed by investments in expanding nursing school capacity to increase graduations by 25% annually and the domestic applicant pool appears sufficient to support such an increase" (p. 35). This goal would require a number of steps, one of which would be to reduce the number of students who attrition due to academic failure and change in career goals. Changes in these categories would not require more faculty or more clinical sites. It would require a better process of screening student applicants. It would provide a quick return on investment and could be implemented without too much additional cost. The challenge is to identify the factors that may contribute to these reasons for attrition.

Similar findings in Canada demonstrated that the nursing school attrition rate contributed to its nursing shortage (Canadian Nurses Association, 2009). In a study of the reasons for nursing student attrition the Canadian Nurses Association report found that many researchers pointed to the students' lack of professional alignment with the faculty and practicing nurses in the clinical sites. These were noted in addition to academic, financial, and health-related reasons for attrition. The Canadian study did not find substantially different reasons from those found in the United Kingdom, Ireland or the United States. Studying this global phenomenon requires starting with basic higher education attrition theory.

**Foundational studies of attrition in higher education.** The logical beginning for a literature review of factors contributing to attrition is with the foundational studies of student attrition conducted in the 1970s and 1980s by Spady (1970), Tinto (1975), Pascarella and Terenzini (1979), Bean and Kuh (1984), and Bean and Metzner (1985). They help lay the groundwork for understanding the early work in general higher education student attrition.

Spady (1970) examined attrition through the lens of Durkheim's theory of suicide. Durkheim (1966) felt that the likelihood of suicide was inversely related to one's social integration. Spady (1970) suggested that the reasons for attrition would lie in the influences, expectations and demands placed upon students as they enroll and progress through the undergraduate process. He felt that both the academic (cognitive) and social and emotional (non-cognitive) environments influenced their behavior.

Van Gennep (1960) published his *Rites of Passage*, which identified three sub divisions, the rite of separation, transition, and incorporation (Holland, 1999). Tinto

(1975; 1997; 2003) built on these concepts of transitions to develop a linear model that included both social and academic integration between the student and the educational institution. Tinto described how over the course of time students reacted differently to these interactions. He believed that different students and different university environments required different solutions. Tinto studied how student characteristics and university characteristics influenced the attrition. He built on Spady's (1970) analogy with suicide and pointed out that Spady only explained the social interaction and not the academic interaction portion of the equation. Tinto used these two domains to distinguish between voluntary and involuntary attrition. He demonstrated that involuntary attrition could be a result of a failure in the academic domain, while there is full integration in the social domain.

**Bandura's theory of self-efficacy.** During around the same time period, Bandura (1977) was exploring self-efficacy or one of the non-cognitive attrition factors. He believed that a certain amount of academic failure could be explained by the student not having the self-efficacy to believe that they could achieve academically or could overcome academic setbacks. He believed that this could cause withdrawal as well as failure.

"Perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Tinto's (1975) model considers self-efficacy, in that it begins prior to enrollment and takes into account the personal and educational characteristics that the individual student brings to the undergraduate setting. It moves through the individual's adjustment to the undergraduate environment socially and academically. He examines the student's

commitment to graduation as well as the institution, and a measure of the willingness to persist.

Tinto (1997) continued to refine his theory to include the importance of learning communities in supporting persistence. He stressed the importance of developing peer support groups during the transition period to college. He explained that the academic and social demands on the student were often in conflict; having a peer support group reduced the tension between the two demands. Tinto did not ignore the importance of student-faculty interaction; he felt that pedagogy was more important than frequent contact.

**Student faculty interaction.** Student faculty interaction that Vygotsky (1978) describes as essential to learning, was identified as positively associated with persistence. Bandura (1977) also felt that the student may not have the self-efficacy to participate in social interaction with the faculty, especially if they were experiencing academic problems. Later Tinto (2003) added the need for a personal support system to the formula for persistence. He stressed again that student involvement in learning, through interactive classroom environments, and student peer relationships encouraged persistence. Tinto's body of research is core and fundamental to the work of many other educational and nursing researchers.

Pascarella and Terenzini (1979) tested Spady (1970) and Tinto's (1975) early research and found that the quality and quantity of student faculty interaction was a strong positive predictor of persistence. Pascarella and Terenzini controlled for the demographic student characteristics that contribute to attrition according to the research

by Spady and Tinto. The variables in their study were persistence and scales of peer group and faculty concern for students.

**Predictability of attrition.** Pascarella and Terenzini (1979) point out that the relative utility of any one factor in predicting attrition or persistence was too simplistic an answer for a complex phenomenon. They suggested further research that should include individual characteristics with the ratings of peer and faculty concern. Student characteristics which were cognitive and non-cognitive.

Bean and Kuh (1984) tested both Tinto (1975) and Pascarella and Terenzini's (1979) concept that the highly cognitive measure, grade point average (GPA), a symbol of academic integration, was related to student-faculty interaction. They questioned whether the relationship, that Tinto and others found between the variables, could be based in the fact that student's with a high GPA are more assertive and confident. That confidence could make them more likely to interact with faculty.

Bean and Kuh (1984) found no significant reciprocal relationship between GPA and faculty interaction. They discussed the fact that there is a relationship, but it is not clear in what sequence it occurs. They suggested that faculty may be attracted to successful students and unsuccessful students may avoid faculty contact. Their conclusion was that there was no predictive value associated with the variables in either direction.

Non-traditional students. To examine today's nursing student motivation it is important to remember that the average student at graduation is 30.5 years old (HRSA, 2008). Bean and Metzner (1985) felt it necessary to update the Tinto theory by examining the growing population of non-traditional students. They initially described them as

older, part time, commuting students and identified that their attrition rate was higher than traditional college students. The researchers wanted to develop a conceptual model that would explain the high attrition rate among nursing students.

These non-traditional students tended to be less concerned about socialization because their primary source of socialization is outside the college campus. They experience fewer interactions with faculty and peers. The utilitarian aspect of the academics was more important to non-traditional students than the degree. Therefore, the need to persist to graduation may be viewed differently. This would not be the case in nursing, as without a degree, they cannot obtain licensure (Bean & Metzner, 1985).

Despite their acknowledged difficulty in categorizing the non traditional student Bean and Metzner (1985) conclude that the non traditional student:

- is older than 24, or
- does not live in a campus residence, or
- is a part-time student, or some combination of these three factors;
- is not influenced by the social environment of the institution; and
- is chiefly concerned with the institution's academic offerings. (p. 489)

This essentially eliminated the social interaction influences of Spady (1970), Tinto (1975), and Pascarella and Terrezini's (1979) models. Bean and Metzner (1985) boiled the factors of their model of attrition down to four major categories. The first was academic performance, the second was intent to leave, the third was background characteristics, and the fourth was environmental factors. Academic performance can trump all factors since failure may necessitate attrition or prevent persistence.



Bean and Metzner (1985) defined poor academic performance as not doing well in course work; the intent to leave as the will to see the task through, the self-efficacy factor. The background characteristics were previous academic history, usually high school academics or community college success. The environmental factors were things unique to the individual, age, sex, stress, utility of the program, family situation, finances, etc. Family situation was a variable not used by Tinto (1975) and Spady (1970) because they were researching attrition at residential institutions.

Bean and Metzner (1985) provide an extensive analysis of each variable and the research studies in which they have been included. They list the academic variables as study habits, academic advising, absenteeism, major certainty and course availability. The environmental variables include finance, hours of employment, outside encouragement, family responsibilities, and opportunity to transfer. The background variables are age, enrollment status, residence, educational goals, high school performance ethnicity and gender. Each of their variables or a combination of them may be predictive of persistence or attrition in college students. The researchers define attrition or dropping out as a situation in which "any student who enrolls at an institution one semester but does not enroll the next semester and has not completed his or her formally declared program of study" (p. 489).

Since today's nursing student is not the traditional 18 year-old, Jeffreys (2004) defines non-traditional students as meeting one or more of these criteria: over 25 years old, commuting to school, enrolled part time, male, member of an ethnic or racial minority group, speaks English as a second language, has dependent children, and holds a general equivalency diploma. Since 1995, the average age of a graduate from all nursing

programs has been over 30, this demonstrates a rise of seven years in age from the early 1980s (HRSA, 2008). Nontraditional students over age 30 make up 14% of BSN student, 40% of Diploma students and 49% of Associate Degree programs (ADN) (National League for Nursing, 2009) Understanding the non-traditional nursing student increasingly requires understanding adult education and the characteristics unique to adult students in higher education. So many adult and second career students carry with them responsibilities and stresses not influencing traditional residential students. The non-traditional student has complex and conflicting demands on their time, energy, and resources. Bringing together the theories of Tinto (1975), Spady (1970) and McClusky (1963) may shed light on the attrition of today's nursing students.

**Durkheim.** Spady (1970) used the work of Durkheim (1966) who theorized that there are different types of suicide, one being social suicide. He considered the external situation of the individual, and concluded that there are so many variables and intensities of variables that it is impossible to predict a suicide based on a combination of circumstances. The same circumstances in separate individuals or at different life points produces different outcomes. This concept can be applied to understanding attrition.

Durkheim (1966) also examined the social structure in which the individual was living. He concluded:

that the social suicide-rate can be explained only sociologically. At any given moment the moral constitution of society establishes the contingent of voluntary deaths. There is, therefore, for each people a collective force of a definite amount of energy, impelling to self-destruction. (p. 299)

This concept compliments the work of Wells (2007) on accumulated barriers and McClusky (1971) on power-load-margin. It reflects the concept that there is an accumulation of unique factors, both personal and environmental that lead individuals to dropping out of a given situation. Durkheim believed that any combination of factors can cause suicide depending on the intensity of the factors. This supports the concept of weighting each factor based on whether it was a support or detractor as suggested by Stevenson (1982) in her development of the Margin-in-Life scale

Durkheim (1966) proposed that the constancy of the number of suicides in a society was due to the fact that approximately the same number of individuals faced the same circumstances each year. He believed that the number of suicides would only change when the environment or society changed. Abstracted to nursing education, the constancy of the attrition rate was due to consistency in the environment, potentially the selection process. Nursing educators may be able to change the rate of attrition if action is taken to modify the population of student nurses to include more students chosen for non-cognitive traits in addition to the cognitive achievements. These non-cognitive factors would include a high self-efficacy and an accurate vision of work of a nurse.

## **Nursing Studies**

**Investigation of non-cognitive factors.** Studies of nursing school attrition utilized the work of the early theorists. One of the early fundamental studies of nursing school attrition was by Barbara Howard Munro (1980). She built her theoretical framework on the work of Spady (1970), Tinto (1975), Bandura (1977), and Pascarella and Terenzini (1979). Munro (1980) found 27% of her ADN and 41% of the BSN students in her study changed from nursing to another field of study.

Munro's (1980) findings demonstrated that socioeconomic status; ethnicity, self-esteem, and locus of control were indicators of potential attrition. Those in lower socioeconomic status, with low self-esteem, an external locus of control and/or non-white race were more likely to not complete a program. Success in high school academics was found to be the best predictor of academic integration. High educational aspirations correlated with persistence. These relationships may occur because aspirations, self-esteem, and locus of control are often related to the reinforcement attained from past success.

What motivates educational aspirations may have changed for women in the 21<sup>st</sup> century. Munro's (1980) work was completed at the beginning of the women's movement when professional schools other than nursing became available in greater numbers to female college students. The traditional female fields of education and nursing were no longer the limit for talented undergraduates. They were now considering careers in previously male dominated professions (Wootton, 1997). Since Munro only examined traditional students coming to nursing directly from high school, she suggested that future research include the non-traditional student as did Bean and Metzner (1985).

The non-traditional student increasingly applied to nursing school. Over the next 20 years much would happen in nursing and nursing education. The call for a BSN as entry into professional practice and an ADN as entry into technical practice became louder. Nursing care demands became more complex as patient interventions became more available (Aiken, Clarke, Cheung, Sloane, & Silber, 2003).

Nursing was moving from a trade or vocation to a profession with a significant body of knowledge to maintain. Hospital-based three-year diploma programs became costly for hospitals to maintain, and those schools were in competition with the growing number of two-year associate degree programs in community colleges. Many diploma programs closed or transitioned to associate degree programs (Aiken, 1995). The growth in associate degree programs made access to non-traditional students easier.

As the entry point into nursing education was changing, attrition predictions were difficult to determine. Many non-traditional students do not take a traditional pathway or timeframe for completion. With the coming of the new century an impetus for studying attrition in nursing schools returned. The predictions of a severe nursing shortage, in the coming decades, shone a light on the problem again. In the 2001, Glossop (2001) examined the current research into attrition and found that the issue was very complex and that factors were interrelated. The same set of variables in different students had different outcomes and the applicants were now more diversified.

Glossop (2001) identified that after the United Kingdom (UK) proposed its BSN as entry to practice, known as Project 2000, there was a significant difference in the type of student enrolled in nursing programs. The UK was encouraging a more varied population to seek nursing education. The students were more mature and experienced.

As Bean and Metzner (1985) previously noted these students came with financial and family stressors. As with all other students they faced academic trials and many found that nursing was not what they expected as a career.

Glossop (2001) wondered if the use of broad terms, such as financial and family matters, were accurate enough to inform the researcher about the true reason for attrition. Were they reasons the student thought would satisfy the school? She also noted that few studies looked at the issue from the students' perception. In 2002, Glossop published her own study of attrition. She used both paper records and interviews to determine the reasons for attrition. She summarized the major issues as socioeconomic in nature; they were family matters, finances, and illness.

Epidemiological approach - screening. Wells (2003) felt that it was time to use an epidemiologic approach to student nurse attrition, as opposed to Tinto's (1975) linear model. She pointed out that nursing students were more likely to be non-traditional. That Tinto's emphasis on pre-entry variables such as high school GPA was less relevant in students who were older and more likely to have previous college experience than Tinto's population. Also because the population of student nurses was much more ethnically diverse, the faculty would need to understand more complex cultural issues.

Wells (2003) epidemiologic approach meant defining what could be done to prevent attrition. She developed primary, secondary, and tertiary strategies to prevent student loss. Her primary prevention strategies included presenting a more realistic and less romanticized version of the nursing profession to the public; continuing education for faculty on diversity and student retention; and institutional tracking against a benchmark

rate. She stressed how the institution must be committed to stamping out attrition and recognizing its symptoms.

Wells' (2003) approach opens the door to consideration that screening for certain characteristics or traits may make the student susceptible to the illness of attrition. Screening for these traits can either eliminate those applicants who have a high likelihood of failure or require provision of treatment to those capable of overcoming their barriers. Wells does not want nursing educators to count the "dead" or attritional students, but screen or treat the potential victims. Some factors would be "fatal" but other would smolder and accumulate, like stress.

**Psychological stressors.** Deary et al. (2003) performed a longitudinal study of attrition in nursing students over a two-year period. They looked at the psychological stressors that contributed to the decision to attrition. They felt that there were antecedents to academic failure and they wanted to identify them. In line with previous theories about social integration, they theorized that self-centeredness lead to greater isolation and lack of peer support.

Deary et al. (2003) used multiple tests and questionnaires to measure, mental ability, personality, stress, burnout, and coping strategies. Students who were found to be more irritable and selfish had a higher attrition rate and less functional coping mechanisms. These students became more "burnt out" as enrollment continued.

The accumulation of stressors is not a unidirectional process, they do not just add up. As Chapman (1981) points out, there is a continuous calculation that adds and subtracts from total stress. In an alternative approach, Young et al. (2006) presented a case study of student retention showing that there were "push" and "pull" factors which

influenced the behavior of students. They described the non-cognitive push factors this way: the constellation of factors contributing to students' decisions to withdraw from their courses was as individual as the students themselves – no two respondents shared exactly the same combination of reasons for leaving (Young et al., 2006). The factors were all non-cognitive in nature. A number of themes and issues emerged from the interviews with the former students, which were mentioned frequently in conjunction with their withdrawal. These included:

- The academic nature of the course.
- The 'leap' from previous study experience into diploma/degree work.
- A perceived lack of clear guidance/support about what was expected in coursework and/or little feedback on return of coursework.
- Experience of failure in coursework.
- Feelings of disillusionment/disappointment over content of course curriculum.
- A perceived lack of organization of lectures and tutorials.
- Deriving insufficient support.
- Experiences on placement.
- Transport difficulties – both attending university and on placement.
- Separation from boyfriend/friends/family members.
- Difficulties within family such as illness, bereavement, arranging childcare.
- Financial strain.



- Living arrangements – issues of campus accommodation and facilities, security. (Young et al., 2006, p. 95).

The non-cognitive pull factors included:

- the desire to care for others,
- wanting to advance one's career,
- enjoying the course content,
- a supportive university environment,
- positive clinical experience, and
- family or friend support.

The concepts of push and pull fits nicely with the theme of a tipping point (Andrew et al., 2008; Cameron et al., 2011) and the power-load-margin of McClusky (1971). When the push to abandon the program exceeds the pull of the positive aspects, students were highly prone to attrition.

Sadler (2003) added to the non-cognitive factor list by identifying that there was a difference in the admission essays of those who attrition. Sadler examined the essays of 236 nursing students and found that those who attritioned "tended to write about nursing as external to themselves, in contrast to the completers who described an internalization of the role" (p. 620). She suggested attrition might decline if schools explored the motivation and experience with a realistic nursing situations that an applicant had. Many researchers (Benda, 1991; Jimenez-cook & Kleiner, 2005; Munro, 1980; O'Donnell, 2011, Urwin et al., 2010; Wells, 2003) found that the students' entry concept of nursing influenced their attrition or persistence. When the entry concept did not match reality, the student felt nursing was not a career for them.

Canadian researchers Grainger and Bolan (2006), revealed that students, who no longer liked the profession of nursing as a career choice had generated their concept of the nurse's role while observing nurses caring for a hospitalized family member, from the media, or from relatives. Their study looked at how the student's perception changed over the four years of the program. The first year students were more idyllic in their view of nursing. Grainger and Bolan encourage a more realistic image of nursing in recruitment efforts to eliminate some attrition.

**Nursing students and self-efficacy.** Nursing researchers have identified that the self-efficacy level of a nursing student influenced the behavior of both the faculty and students. The interaction of these two parts of the education equation is very important to the theories of persistence. McLaughlin, Moutry, & Muldoon, (2007) found in their longitudinal study of 350 Irish nursing students from 1999 to 2002 that those with higher self efficacy beliefs received higher grades. "Those with a resilient sense of efficacy tend to view difficult tasks as challenges to be overcome instead of problems to be avoided"(p. 213). Problem avoidance and non-support seeking behavior are closely related.

Ofori and Charlton (2002) tested the concept that self-efficacy and support seeking were related. They worked with over 300 nursing students in a diploma program in northwest England and found that seeking academic support had the greatest direct effect on academic performance. The other entry qualifications they tested for did not have as large an effect as support seeking. They concluded that "These findings lend support to others suggesting that nursing students' entry qualifications are not the most useful predictors of academic performance and that they should not be relied upon as the only criterion for selecting potential nurses"(p. 512). Understanding the level of self-

efficacy a student brings to school with them, from their previous experiences, would therefore be an important component of the admission decision process.

### **Admission Measures**

A study of student admission to higher education, for the purpose of health professions, was conducted in Canada to determine the reliability and validity of admission measures (Salvatori, 2001). Salvatori concludes that while most researchers agree that both cognitive and non-cognitive factors should be used in screening health professional applicants, the current use of interviews or written submissions was not an effective or reliable way of measuring the non-cognitive appropriateness of the applicant. "There is no doubt that further research is needed to find more reliable and valid ways of assessing the non-cognitive characteristics of applicants and measuring outcomes related to their ultimate success as clinicians" (p. 170).

Admission requirements for nursing school are routinely based on cognitive testing and historical cognitive performance. There are occasionally non-cognitive components such as essays defining why the student wants to be a nurse.

Most admission criteria include grade point average in math and science at the previous academic level (McNelis et al., 2010). To avoid grade inflation, some schools administer their own testing of math and science for transfer students. In a study conducted by the nursing faculty at Indiana University they found no literature "related to experience or knowledge of the profession as a component of admission or as a predictor of success in an undergraduate nursing program" (McNelis et al., 2010, p. 189). Much of the literature (Grossbach & Kuncel, 2011; Campbell & Dickson, 1996) about successful admission screening tools, compares the results of the pre-admission testing to the result

of the NCLEX. The flaw in these studies is that the student has to graduate to take the NCLEX. Therefore the student who did not persevere to graduation is not included in the study.

Timer and Clauson (2011) pointed in their conclusion that more study is needed to develop a valid and reliable way of measuring the non-cognitive component of appropriate admission processes. They acknowledged that the GPA is an efficient and economic method but does not account for professional attrition.

### **O'Donnell Conceptual Framework**

O'Donnell (2009), an Irish mental health advanced nurse practitioner explored nursing student attrition and developed a linear conceptual framework that identifies the factors which influence attrition in each of the stages of a student's pathway. This framework is displayed in Figure 2.2. O'Donnell's framework identifies the transformational developmental time periods that students go through in pursuit of a nursing career. It explores their pre entry life experiences, the expectations they bring with them to enrollment, the experiences of early induction and their progress in school. These developmental phases lead to successful completion or voluntary withdrawal.

Although this framework addresses the cognitive and non cognitive aspects of attrition, it did not delve deeply enough into the theoretical causes of the non cognitive aspects. As good as it was, I decided to use O'Donnell's framework as a beginning of my analysis. I additionally explored other theoretical lens that would provide further explanation of the non-cognitive elements.

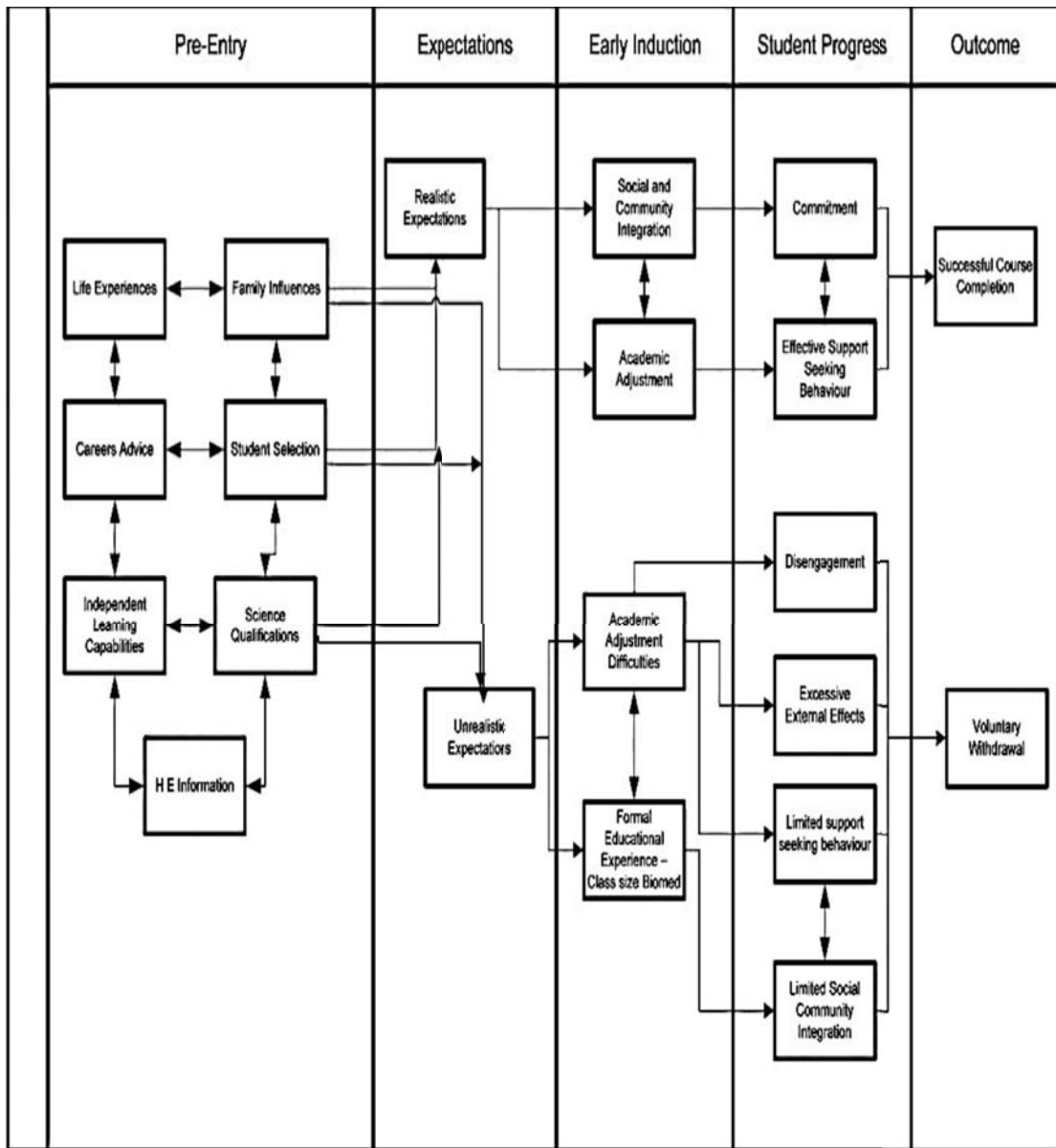


Figure 2.1 Factors Leading to Voluntary Attrition (O'Donnell, 2009)

### Theoretical Lenses

As described in Chapter I, 50 years ago Kibrick (1963) and Katzell (1968) issued clarion calls to the nursing profession to address the attrition rates in the nursing educational process. They saw a looming shortage of nurses and felt that attrition was a contributing factor. The fundamental underpinning of this research is that the attrition

rate from schools of nursing has not changed substantially in over 50 years. The number of graduations from nursing school is not sufficient to replace the vast number of nurses approaching retirement. One of the possible ways to increase graduation rates would be to decrease non-cognitive attrition. Although some professions may see attrition from their schools as the maintenance of a high standard; in nursing, the scarcity of practitioners has a direct effect on the profession's ability to provide a quality product.

Since the phenomenon of attrition and persistence is multi-dimensional, it must be viewed through a variety of lenses. The lenses I have chosen are Bandura's Theory of Self Efficacy (Bandura, 1977), McClusky's theory of Power-Load-Margin (McClusky, 1971) and the Person-Environment Fit theory (Edwards, Caplan, & Harrison, 1998). These researchers examine different factors in the decision making process of a student and it is possible that their effects could be screened for prior to admission.

**Lens: Bandura's theory of self-efficacy.** Self-efficacy is not a simple concept. It is complex and specific to the individual. Self-efficacy, the ability to believe that you are capable of accomplishing a given task, may be the difference between attrition and persistence in a nursing student's journey.

The degree of self-efficacy an individual has, is believed to influence "whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and adverse experiences" (Bandura, 1977, p. 191). The influence of self efficacy can modify the predictability of variables unique to each student.

Bandura (1977) defines outcomes as a modification of behavior based on the outcome expectations of the individual. The behaviors are influenced by personal

efficacy expectations. Therefore a student drops out because his/her level of self efficacy is low and he/she does not believe that one's ability to perform a specific behavior will be adequate to achieve the required outcome. "Successes raise mastery expectations; repeated failures lower them, particularly if the mishaps occur early in the course of events" (Bandura, 1977, p. 195).

The high school academic performance constitutes a form of outcome expectation. It is an often mentioned variable in their likelihood of persisting to graduation. Those with lower high school or early college grades are less likely to persist (Bowden, 2008; Jeffreys M. , 2007; Munro, 1980; Spady, 1970; Tinto, 1975). Previous experience influencing self-efficacy may cause students to lack a belief that they can respond to the increased academic requirements of a nursing program. It may also inhibit a student's willingness to seek academic support and weaken their will to persist at a given task (Ofori & Charlton, 2002). This behavior effects the academic integration that was described by early researchers as essential to persistence (Bean & Metzner, 1985; Pascarella & Terenzini, 1979; Spady, 1970; Tinto, 1975).

Lens: The person-environmental fit theory. The roots of the person-environmental fit theory (PEF) go back to Plato who "argued for the wisdom of assigning persons to jobs in accordance with their temperaments and abilities" (Tinsley, 2000, p. 148). It was the sociologist Talcott Parsons who took the concept to a more formal theory and introduced it to the vocational management literature. The attractiveness of job attributes and the ability of the employee to perform the attribute contribute to the fit or satisfaction of the self with the job. This fit is a dynamic relationship which evolves over time (Tinsley, 2000). The concept of abilities and demands equaling fit, is reminiscent of

the Power-Load-Margin theory of McClusky (McClusky, 1971) and the self efficacy theory of Bandura (1977).

Nursing presents the challenge that there are at least two forms of self at work, the global self and the professional self (Arthur, 2007; Dagenais & Meleis, 1982). Global refers to the individual's assessment of self worth as a person, while the professional self is personal worth or value in a specific profession. The development of these "selves" is also dynamic and requires observation, experimentation, and feedback. The nursing self is influenced by pre-professional life experiences with the profession and intra-professional school experiences with faculty and preceptors.

Dagenais and Meleis (1982) felt that students form impressions about themselves in relation to the norm of the examples they see. They felt that the way for students to reach self actualization was to have a knowledge of their self, their role, needs, and impact on others. Dagenais and Meleis (1982) began and Arthur (2007) furthered the development of a measurement tool for nursing professional self concept. Arthur's tool is directed more to the practicing nurse, while the *Nursing Self Description Form* (NSDF) developed by Dagenais and Meleis is geared more to the student.

Measuring a person's "fit" for a job or environment is contributory to their persevering in the job. Without the "fit" described by Edward, Caplan, and Harrison (1998) stress builds up and the person comes closer to a "tipping point" (Andrew et al., 2008; Cameron, Roxburgh, Taylor, & Lauder, 2011). This is why it is widely accepted in the human resources industry that potential employees are tested for not just their knowledge but also their skills and disposition.



**Lens: power-load-margin.** In 1963, Howard McClusky introduced the concept of Power and Load. *Power* is the ability, resources, and possessions of an individual to deal with the stresses of life, the individual's coping ability. *Load* is the self and social demands that a person must deal with to maintain autonomy (McClusky, 1971). "Margin is a function of the relationship of Load to Power" (p. 1). *Margin* is essentially the reserve that an individual has to continue to cope with an additional stressor or event.

McClusky (1971) divides load into two compartments; internal and external. The external load represents the commitments an individual has to outside forces such as family, school, and career. Internal load comes from personal desires, expectations, and aspirations. *External power* relates to family and community support, financial status and *Internal power* is the available skill set and experiences added to personal self esteem, resiliency, and coping ability (Grenier & Burke, 2008).

The application of McClusky's theory is not about how students learn but how they persist in learning or decide to engage in adult activities such as higher education. Grenier & Burke (2008) found that "power and load are not discrete entities" (p. 596). Friends and families, for example, can be both a portion of one's support system and a drain or load on one's margin. In their research they used the theory of margin to evaluate their experiences during their PhD programs. They developed concept maps, with load and power as guiding categories, to visually represent their experiences.

Persistence or margin is the result of an equation which establishes the ratio of *Load to Power*. *Power* and *Load* are variable through out a person's life. One can increase power by learning coping skills and by increasing personal understanding of relationships.

*Load* is modified by what one chooses or does not choose to assume as a responsibility. McClusky suggested that a range between .30 and .70 as a ratio of load over power allowed an individual to deal with unforeseen events. Stevenson (1982) suggested that ratio lower than .30 suggested a lack of reserve to deal with life's issues.

Joanne Stevenson, a nurse, developed and tested a scale she named Margin-in-Life Scale, to determine individuals' perception of the amount of "Load" in their life and the amount of "Power" they possess to deal with the "Load" they are carrying. Load and power are calculated as an accumulation of individual scores from subscales. A comparison of the subscale results help to identify the areas in which there is an excess or lack of margin. The ratio of the *Load* to the *Power* is the *Margin*.

The subscales established by Stevenson (1982) were: health; self; family; religiosity/spirituality; and community. The participants felt they were valid reflections of their stressors. Using Stevenson's methodology to weight and calculate an individuals margin has been utilized in various studies. Gaillard-Johnson (1997) used a modified Margin-in-Life Scale to evaluate the relationship of age, marital status and parental status to scores of adult female community college students. Hanpachern, Morgan, and Griego (1998) used the Margin-in-Life Scale to assess the readiness for change in manufacturing employees. Their findings suggested potential strategies for change. Walker (1996) used the Margin of life scale to screen adult students entering higher education to determine the instrument's ability to predict persistence. While Walker did not find any correlation to persistence he did suggest that scores on the scale could be useful in assisting students to assess their progress.

As the world changes, stressors may change as well. The current applicability of Stevenson's tool (1982) could certainly be challenged as not being reflective of the current stresses and supports in a student's world. However the concept of margin being a function of load and power would not change with cultural change. Therefore the use of the weighting and calculating system, devised by Stevenson, remains appropriate to calculate a score for an individual's perceived margin.

Main (1979) asserted that "turning points (critical transition points)" (p. 20) exist in all adult lives. He described the turning point concept to be rooted in "external events of life as well as the internal reactions to the external events" (p. 20). He defined the significance of margin as permitting a person "to invest in life expansion projects and experiences including learning experiences" (p. 23).

Main (1979) eloquently states that, "A necessary condition for successful participation in a learning experience is access to and/or activation of a margin of energy that may be available for the process of life above a subsistence level" (p. 24). Being able to identify the "access to and/or activation of a margin" would be very helpful in screening applicants for an educational program.

McClusky (1971) and Wells (2007) describe that there is a point in the longitudinal path of education that a student may perceive that their margin is too low. As noted previously, 50% of nursing students consider voluntary attrition (Bowden, 2008; Cameron et al., 2011; Dante et al., 2011; Fleming & McKee, 2005; Glossop, 2002). This suggests that a large number of students come close to a low margin or the tipping point that Andrew et al., (2008) describe. The ability to identify students who are approaching

or are at a tipping point should be beneficial in screening applicants for a seat in a school of nursing.

### **Adaptation of O'Donnell Framework**

Figure 2.3 reflects my adaptations to O'Donnell's (2009) model based on my review of theoretical lenses. In O'Donnell's (2009) Pre-entry period, Bandura's (1977) self-efficacy lens provides insight into the experiences of the student's life prior to enrollment. This is the time when their self-efficacy is being developed. The "Early Induction" period is when the self-efficacy is called upon to initiate the necessary alterations in behavior.

The PEF lens is helpful in enhancing an understanding of the "Expectations" period in the framework. If the student's expectations and the student's view of the reality of nursing school do not fit well, the lack of fit will increase the stress of the situation and may influence the outcome to attrition.

The power-load-margin lens enhances the "Student Progress" period of the framework. The presence or lack of margin will influence the student's ability to make the modifications necessary to respond to the challenges of a professional education. Excessive load may prevent the commitment and support seeking behavior that O'Donnell (2009) describes as necessary to persevere.

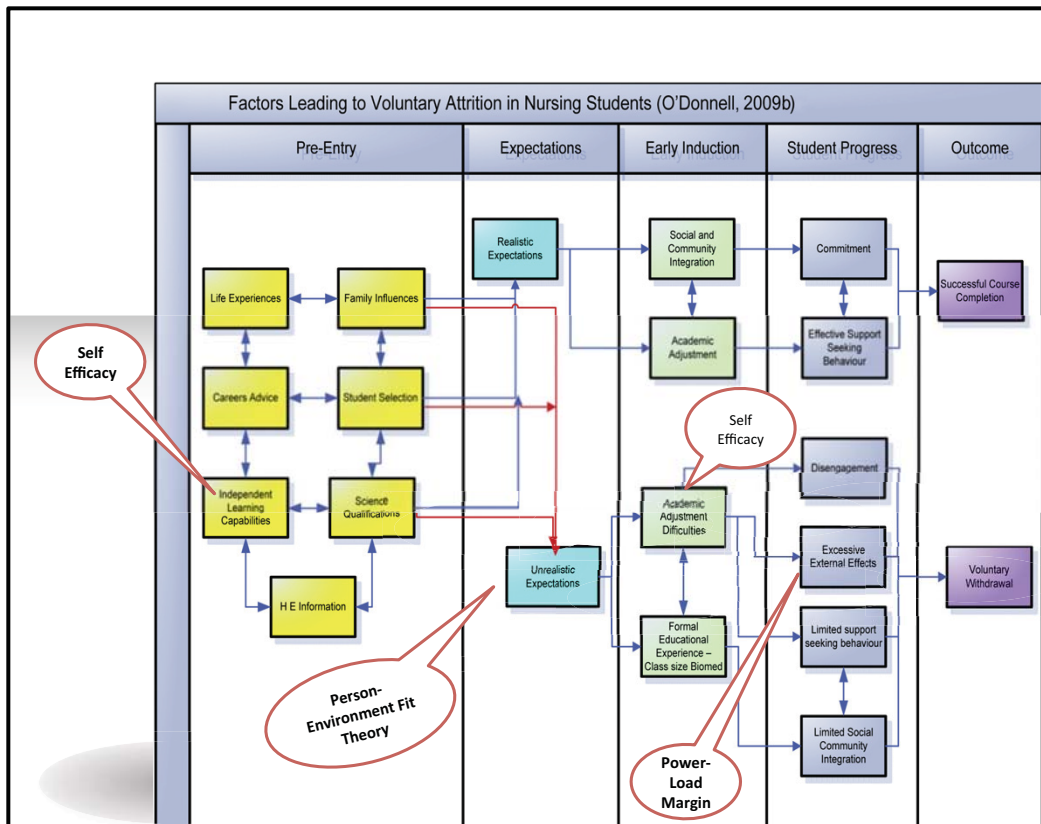


Figure 2.2 Adaptation of O'Donnell's(2009) Conceptual Framework

### Researcher's Paradigm/World View

Understanding attrition requires an analysis of the lens of multiple theorists and myself as well as that of others. I am a pragmatist, based on criteria defined by Creswell and Clark (2011, p. 40) who believes that there are causes and effects in our lives. Some of these cause and effect relationships can alter and modify the effect and others are just part of our inbred personality or view of life. I believe that the way a person views themselves in relation to others is a developed trait. It is enhanced and reinforced by life experiences. Positive feedback loops (Argyris & Schon, 1974), enhance personal willingness to continue to face the world head-on. Negative feedback encourages adults to modify their behavior and do what will be best for personal well-being. This is not a

learned behavior. Self-protection is as natural as human fight or flight response. People all use self-protection to ensure their ability to cope with new or stressful situations.

My experience with patients and students has shown me that their prior life experiences critically shape their responses. Testing students for their state of self efficacy and margin prior to acceptance into nursing school seems a useful way to either weed out those who will be unsuccessful or to support those with marginal problems to deal with the barriers they will face. Barriers do not always end a journey. If a student can modify his/her response to certain stimuli, he/she may be able to complete their journey. It is the completion of the journey which entrance testing is designed to predict.

My pluralistic views lead me to believe that just as cognitive testing is not sufficient to identify all issues, so quantitative research may not be sufficient to determine attrition propensity. I therefore believe that gathering the perceptions of the subjects must be an important part of this study. Only they can explain their responses to certain stimuli. If one cannot change the stimuli, perhaps one can modify the effectiveness of the response. Listening to the individual is as important as listening to the responses of many.

There are also deep seeded personality traits that are very difficult to modify, these will be examined through the NSDF. To define one's self as a nursing candidate requires that the interpreter have an accurate definition of nurse. Many people develop their notion of a nurse from inaccurate mass media, life experiences, and public opinion. This misinterpretation is cited often in the literature and contributes to the stress of misalignment (O'Donnell, 2011; Urwin et al., 2010; Wells, 2007; Wright & Maree, 2007).

My paradigm informs a need to find an answer to the problems arising from the shortage of nurses and few individuals having the chance to succeed at their career choices. I believe that there are multiple ways to address the issue and each will contribute to the solution. Social justice calls for a correction in the emotional impact on the student who experiences attrition and the rejected candidate who could have been a good nurse. People have a responsibility to do both.

### **Summary of the Literature Review**

Almost 50 years ago, Kibrick (1963) and Katrell (1968) sounded clarion warning that the nursing shortage could not be addressed without addressing the attrition of students from nursing schools. To understand the causes of attrition and the theories which attempt to explain the phenomenon this literature review has looked at foundational work by Van Gennep (1960) on transition, Spady (1970) on college attrition; Tinto (1997) on college attrition, Tinto (1975; 1997; 2003) on traditional attrition, Pascarella and Terenzini (1979) on non traditional attrition, Bandura (1977) on self efficacy in attrition, and Durkheim (1966) on the similarity of suicide to attrition.

This review lead to nursing specific work by Munro (1980) who linked foundational studies to nursing attrition, Aiken (1995; 2003; 2008) who examined the shortage and its causes, Glossop (2002) who compared reasons given for attrition, and Wells (2003) who used an epidemiological approach to attrition. It continues to Dreary et al. (2003) who used a longitudinal approach, Young et al., (2006) who examined the push and pull effects, Sadler (2003) who examined application essays, and O'Donnell (2009) who pointed out the emotional impact of attrition. The review included Urwin et al. (2010) who examined the complex layers of attrition, Salvatori (2001) who examined the

reliability and validity of admission tools in health professions, and McNelis et al. (2010) who searched for new admission screening methods. It concluded with Grossbach & Kuncel who did a meta-analysis of admission screening (2011), Campbell & Dickson (1996), and Timer & Clausen (2011) who examined the ability to predict student success.

In an attempt to synthesize the varied information, the review examined three external lenses that were used to examine the phenomenon of attrition. These lenses include Bandura's theory of self efficacy (1997); Edward, Caplan and Harrison's interpretation of the Person-fit Theory (1998) and McClusky's Power Load Margin theory (1971). In addition the lens or paradigm of the researcher was examined.

This review of both the educational literature and the nursing literature has led me to believe that there are non-cognitive factors which affect the attrition of nursing students and that one inexpensive and timely way to address the shortage of nurses is to screen for these factors so that graduation rates will be higher. The higher the graduation rates the more nurses will be available for licensure and practice. It is important to identify how those factors can be identified so that intervention tools can be developed. This research is designed to identify the factors.



## **Chapter III**

### **Leadership Platform and Nursing Credo**

#### **My Formative Years**

Social justice has driven my life, and therefore my leadership platform. My parents imbued social justice into me as moral nutrition. My mother, a Quaker, and my father, a Jew, were both born in the United States of immigrant parents. They understood prejudice and oppression but chose to rise above it, to prevent its continuation and replication.

My father was a successful attorney who contributed his time extensively to social justice causes. He served as the Commissioner of Human Relations for the City of Philadelphia, and pro bono wrote the legal brief that opened Girard College to black students. My mother worked for resettlement of the displaced European Jews after World War two. They were both the first in their families to go to college and were graduates of the University of Pennsylvania.

As children, my sister and I were told of the responsibilities of life, that we were our brothers' keeper and that any wrong was a wrong against all. Our lives were supposed to make a difference. The world should be better after we passed through. Quakerism showed us that there was that of god in everyone, that to harm another was to harm that of god. It was our obligation to find that of god in others and to nourish it and respect it. This became my lifelong goal.

## **Caring About and Caring For**

Caring about and caring for others has been the hallmark of my life. I lost my mother, father, and sister to illness before I was 30 years old. I spent a great deal of those years caring for my family members. Nursing was the natural choice for such a caregiver. It was my avocation.

Nursing fulfilled my need to make the world a better place, on a scale that I could handle. I would not fight the city-wide battles like my father, but I would make the world around me a better place for all who occupied it.

As a nurse, my patients were part of my world and I wanted to care for them and for their families. I understood from my early experiences that illness was not limited to the patient but involved and influenced the whole family. I was a holistic, systems thinker even in my youth. The motto of my high school was "the Whole of Life" and it would be my motto most of my life. It meant I had to care about all the aspects of my life not just my patients. It meant that everything I did in my life had to have meaning and leave the world changed for having come in contact with me. It also meant that my life needed to be in balance. Attention needed to be paid to my family, my work, and myself.

I find now that teaching is a wonderful avenue for sharing the whole of life with others. Helping students to see the ripple effects of an action, how to search for the morally comfortable position, how to find meaning in all that they do. I nurse my students now, so that they can nurse the patients. My goal is to inspire them and to model the aspects of caring and commitment.

The state of the nursing profession today is quite worrisome to me. I feel nursing has lost its north star, its direction. A nurse's role is to assist patients in adapting to their

illness. It is not diagnosis and treatment. Nurses are not junior doctors. They are independent professionals with a strong body of knowledge about how illness effects clients and how they need to adapt, resist and deal with the disequilibrium caused by disease. I like to think of it as being at dis-ease, the goal being to return to ease.

### **Returning to Ease**

My leadership theory is therefore to identify the things that put our profession at dis-ease and assist in bringing it back to ease. I came into nursing school at the first blossoming of the baccalaureate-nursing concept. The faculty and the profession were just moving from a positivist model to a post positivist model enhanced by the concept of critical social theory. Students were no longer to be systematized and routinized. They were to be constructivists who used their knowledge to construct new knowledge. We were to take theory and apply it to varying situations and create our own answer to problems. Theory was what students learned not tasks.

Being rooted in theory has stayed with me all my life and has helped me to make necessary modification throughout my life. Understanding and using core values, visualizing desired outcomes and then planning a pathway to that outcome, with the patient or student has always been my stock in trade.

This dissertation is an extension of that lifelong journey. I want to understand the barriers which students face when enrolled in a baccalaureate-nursing program, how they cope with those barriers or stressors, and when do the barriers become insurmountable and attrition occurs. The power-load-margin theory speaks to me as a nurse and a person. Organisms and organizations are always in search of equilibrium (Covey, 1989).

Understanding how to achieve the equilibrium people seek makes a good person and a good leader.

### **Conceptual Learning**

I was always a very good student. I am very confluent and answers just come to me. I understand things intuitively. I always desired to understand not just learn. The most significant educational experience I had was in the 7th grade. I was selected to be in an experimental math class that would spend the entire year learning math in base 5 rather than base 10. This meant learning concepts. All previous learning did not apply; no memorization would be helpful. Students had to understand the concepts of mathematics.

This was an exciting adventure for me. It set me on a path that would help me to understand that all reality is set in context. As an example, in base 5; the number 11 is representative of 6, or one base plus 1. In base 10, the number 11 represents the base 10 plus 1.

This class also singled out the group that was selected. As students we were different and special; no one could help us with our work because it was not a well-understood concept. In the context of the 1960s movement for social justice this was an interesting exploration of separateness.

### **No Man is an Island**

The next year my mother died and I was again different. I had no mother and my mother substitute was an African American woman. Thirteen is a tough age to lose your mother but again it added to my character. I learned to be self-reliant. I found my teachers to be very supportive. I began to see teachers in a very caring way. They weren't just the

wonderful people who took me on adventures of the mind, but they were human and tender. They were real people.

I learned early that people were connected through their “inner light.” That, what hurts one hurts all. Having a family with so many significant life issues showed me that we cannot separate ourselves, that "each man's joy is joy to me, each man's grief is my own" as Joan Baez tells us in her song, *No Man is an Island* (Baez, 1968).

I always wanted a career that contributed to the good of society. I had been a child of relative privilege and understood from my parents the importance of that responsibility. I also understood my responsibility to use my talents to their fullest. Being a woman did not seem at the time to be a challenge. My mother was a college graduate with a successful, out-of-the-house career. I believed that as a portion of the universe, I had an obligation to fulfill the role for which I was chosen.

What best describes my roots is a quote which appeared under my father's picture in his high school yearbook, under my picture and under the pictures of all my children. It is a stanza from a poem entitled Prayer (Untermeyer, 1919), "From compromise and things half done, keep me with a stern and stubborn pride, and when at last the fight is won, keep me still unsatisfied."

### **Leadership Style**

My leadership style has always been one of being still unsatisfied. I am perpetually on a search for a higher purpose. I believe as a teacher and a leader that the shared purpose of transformational leadership is the core of success. I made meaning for my patients and students as Vygotsky (1978) describes, through shared purpose. I believe in making meaning out of the context of our lives and learnings, by constructing

knowledge within the Zone of Paroxysmal development. To me there is something magical about working together and sharing in the creation of new knowledge.

My thinking processes are confluent, often bringing me to conclusions that appear to others to come out of thin air. I am always aware that my brain is working in the background synthesizing what the other person is saying, and making new meaning out of our shared thoughts. By making meaning with others I am energized and that energy is often hard to control. The energy also often serves to unite me with others in dedication to a cause for change. It serves to stimulate my students to commit to transformational thinking.

I am on the faculty of two graduate schools of nursing. To teach at the graduate level is to bring about transformational change. Graduate students are already professionals, but I believe they need to be transformed into thinkers and leaders. Watching and participating in this transformation is a very rewarding experience.

### **Ethic of Caring**

The ethic of caring requires that one also cares about students. The currency of the student is their experiences and beliefs. The currency of the teacher is expanding the student's ability to apply their currency. They must apply it within the context of their lives. This ethic has brought me to a position where advancing my education became important. Entering an education leadership program was important to my need to never compromise or leave things half done. I wanted to learn how to be a better teacher, to understand educational theory and methods. I needed to bring the teaching portion of my life in line with the rest of my life. As the Buddha tells us, people must live all the segments of our lives with the same ethics and beliefs if we want to be at peace.

I believe that the state of nursing education today, does not embrace the need to care about as well as to care for. Nursing is heavily rooted in tasks and accomplishments. It is very hierarchical and rigid. I wanted to show that there was another way to educate the leaders of tomorrow.

I see my students as colleagues in the pursuit of educational objectives. My part in the journey is to care for the future leaders in my profession and provide them with the necessary tools for their exciting journey. I want them to feel the passion I feel for the role of a nurse.

While enrolled in the Educational Leadership program, I have been both student and teacher; I have come to a greater understanding of both of the roles. It has prepared me to start the discourse among my colleagues on the nursing faculty about what our mission and values are. Kotter (1996) and DuFour and Eaker (1998) point out that shared mission, vision, and values unite people and pave the way for transformation.

### **Student Selection Responsibilities**

The student, the faculty, the administration are all partners in the exploration of knowledge. Each party may have little to contribute at certain points but their perspective is always important and their learning is the goal. The first obligation of the faculty is to select students who are capable of succeeding in the course of study. The school owes an obligation to the applicant to advise them about the cognitive and non-cognitive skills that will be required for successful completion of the course of study. Argyris and Schon (1974) explain that the development of a transformational or model II world requires both intellectual and emotional components, the cognitive and non-cognitive portions of human behavior.

Having both cognitive and non-cognitive requirements makes succeeding at professional training more difficult. In evaluating student applications we need to put to use the experiential learning, which comes from observing those students who struggle and fail, as well as those who succeed. If it were only intellectual prowess that is needed, selection would be simple. The complexity comes from identifying the non-cognitive, emotional components necessary to successfully transition into professional education. Internalization of the behavior necessary to succeed comes from exposure and education (Argyris & Schon, 1974).

Social justice requires that all applicants have a fair chance not only to be accepted but also to complete the program. Failure or attrition can significantly damage self-esteem and self-perception. "Self-concept is as relevant to transformative learning as it is to adult learning... by definition, transformative learning leads to a changed self-perception" (Cranton, 2006). If students are not appropriately screened, teachers may be condemning some students to a course of action they cannot complete. Failures accumulate and create a poor sense of self-efficacy (Bandura, 1977). This reduction in self-efficacy can effect many future decisions. I believe that the role of educators is to enhance self-efficacy and self-esteem. Educators owe this to their students and applicants.

## **Conclusion**

My leadership and my decision-making are based on self-interest. It is my interest in being at peace with myself. Although this has often cost me personally and professionally, it is the only way that I can make decisions. I am a seeker of inner peace,



not self-protection. What may appear to the outside world, as self-destruction is to me self-interest? If I believe in something I will take it to the wall.

It is the reflection upon the transformational professional development that I have experienced in the Educational Leadership program, that have given me increase personal insight as well. The combination of my personal and professional transformation has placed me at the beginning of a developmental journey.

Teaching is a privilege granted to only a few. Where I formerly believed that technique and technical expertise were the components of a good teacher, I realize now that a perspective on our role and ourselves should guide our actions. We are all role models for each other. But to me leadership is taking responsibility for the role you model and how it influences others to a higher plane. Fullan (2001) believes that leadership requires a moral purpose, which he defines as "acting with the intention of making a positive difference in the lives of employees, customers, and society as a whole" (p. 3). I would include students and applicants. This research is designed to make a positive difference in the lives of students.

## **Chapter IV**

### **Methodology**

To answer the posed research questions, a study was designed to address the construct of attrition propensity in nursing students. An explanatory, sequential, mixed methods design was planned. It involved collecting quantitative data first and then explaining and exploring the quantitative data analysis with in-depth qualitative data. The two data sources were integrated to enhance the understanding of the findings. The choice of a mixed methods design was based in the pluralistic pragmatic views of me as researcher.

The attrition of a student is often viewed as a cause and effect relationship but it is not a simple cause. As Cameron et al., (2011) and Andrew et al., (2008) point out, it is an accumulation of causes that brings the student to a tipping point. Much like how cognitive and non-cognitive information enhances the ability to evaluate a prospective student, so quantitative and qualitative data enhance the understanding of student behavior and perceptions. Admission decisions are made on vast numbers of applicants, it was therefore important to investigate a form of quantitative data, which could be self administered and mimic the testing already used for evaluation.

Some attrition cannot be screened for, such as health, unpredictable financial or family issues. In studies where reasons for attrition have been determined, career change has made up a noticeable portion of the reasons, as has academic failure (PA Department of Health, 2010). The literature review demonstrated that career change is a

category that has its roots in a lack of alignment between the students' concept of nursing and the profession or faculty's concept of nursing. It may also represent an inability to compete in a rigorous curriculum due to self-efficacy or personal margin.

Measuring a student's concept of nursing, self-efficacy, and margin could provide admission decision makers a way to successfully further screen the students who pass the initial cognitive measures. This additional screening may screen out those applicants who now make up a large portion of the attrition percentage. A diagram of the study is displayed in Figure 3.1.

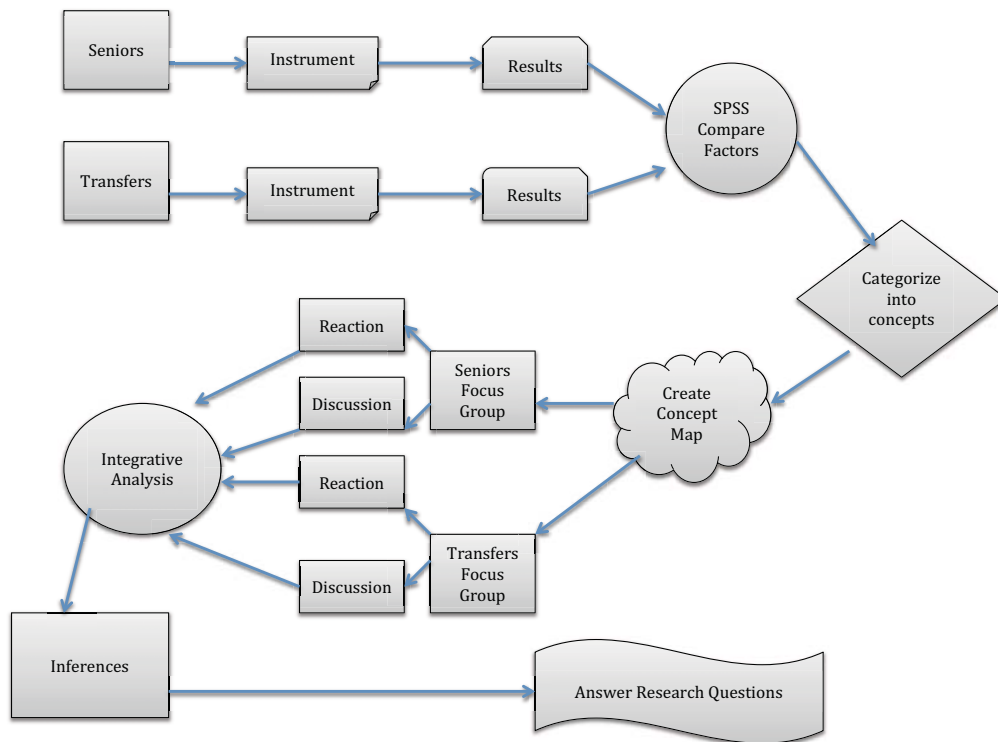


Figure 3.1. Schematic of Research Design

In addition, it is important to triangulate and enhance the data analysis by collection of qualitative data as well. Admission decisions are not linear processes but are

a weighing and assessing of many factors. The analysis of the quantitative data lead measurements of the student's self-efficacy, alignment with the nursing profession and their margin-in life. It attempted to define the factors which many predict attrition or perseverance. Focus group data derived from meeting with a small cohort of each group of students helped to validate the findings. Done in groups, it eliminated any personalization of the data that might inhibit participants' discussion of the issues.

The qualitative strand was also included to begin an exploration of potential approaches, which could be used to alleviate the barriers perceived by the participants and identified by the quantitative data. The two types of subjects were asked about what techniques they may have utilized when and if they experienced barriers to persistence.

### **Context of the Study**

Salla University School of Nursing and Health Sciences (Salla), is part of a private, Catholic, co-educational, liberal arts university, with a student body of over 6,300. It is located in one of the 20 largest cities in the United States. The School of Nursing and Health Sciences is one of the largest non liberal arts divisions of the University. The School of Nursing has a baccalaureate program in nursing (BSN).

Admission to the school is based on the following:

Before beginning nursing major courses – which are concentrated in the junior and senior years – the student must have earned at least 60 required Salla University credits in the liberal arts and sciences and have a minimum cumulative G.P.A. of 3.0 and science G.P.A. of 3.0 (Anatomy and Physiology I & II, Microbiology, and Chemistry). Students must earn a grade of “C” or better in developmental psychology and nutrition prior to admission.

After having met the above criteria, the Undergraduate admissions and Academic Standards Committee will review each student's academic file for admission to the nursing major. Students may repeat 1 science course 1 time only to earn the science GPA of 3.0. Courses taken at Salla University for which a student received a failing grade of "D" or "F" may not be repeated elsewhere. (Salla University School of Nursing, 2011)

Community college transfer students, who do not take their collegiate math and science at Salla are also required to take a test provided by the National League of Nursing for pre-nursing students. These criteria are cognitively based.

### **Population and Sample**

The total population sample ideally would have been all junior and senior students in a baccalaureate-nursing program as well as all students accepted into the same program who have transferred out into a companion non-nursing program at the same university. Unfortunately such a population was not reasonable to obtain. What was available was the population of nursing students and health studies students at Salla University in 2012. Volunteers were obtained through the assistance of program directors and faculty members at Salla. The faculty were asked to permit the researcher to meet with a number of their classes to explain the study and to request volunteers to complete the instruments.

Two convenience samples of students from the school of nursing and health sciences were used in this study. One was nursing students in their last two years of the program (NS) and the second was students who had at least a portion of one nursing

course and have subsequently transferred out of the nursing program to the health studies program at the school (TS).

Students, who enroll in the nursing program at Salla and attrition prior to graduation, are offered an opportunity to transfer into the Salla program in health studies. These students remain within the university. Therefore it is possible to assume that their attrition from the BSN program was not due to a dislike of the university or a lack of social integration, as described by Tinto (1975; 1997; 2003) or Bean and Metzner (1985).

With both current student nurses and students who are no longer student nurses available at Salla University, it was chosen as the site for this research. These two groups were at one time a singular group, chosen by the university, using identical criteria. The sample was determined by the convenience of having two groups of students whose differences may be rooted in their non-cognitive elements. The attritional group, having stayed at the university for further study may not have dropped out due to health reasons, financial pressures, a dislike of the university or any of the other non-cognitive factors related to the university. This reduced the potential independent variables affecting the students' outcome.

**Phase one: survey participants.** There were two groups of participants in the first phase. The two groups were current student nurses in their final two years of the program (NS) and students in the Health Studies Program who transferred from the nursing program after at least a portion of one class in the Nursing Program (TN). The participants were solicited by me in a presentation prior to the beginning of one of their classes. I was afforded this opportunity by fellow faculty members at Salla University. Students were asked to come one hour before or after the next scheduled class to complete the instrument. I did not teach in the involved programs and the students should not have perceived any benefit from participating in the study. I therefore, offered a lottery for gift certificates to those who participated.

**Phase two: participants.** A section of the participant consent form contained an option to volunteer to participate in the qualitative strand of the research. The students were asked to submit their email addresses if they wished to participate. An email was sent to all subjects who had opted into the second phase, announcing a date, time, and location for the focus group. Subjects were invited to groups designated for NS or TS participants based on their assigned category.

### **Instrumentation**

**Phase one: quantitative survey.** In the first, quantitative phase of the study, four instruments were combined into one comprehensive survey. The surveys were completed by two groups of subjects at Salla University, to identify whether self efficacy, professional nursing concept alignment, and/or Margin-in-Life measurement relate to perseverance or attrition in student nurses.

The independent variables gathered by the survey in the quantitative phase identified non-cognitive factors that have been found to contribute to attrition among baccalaureate nursing students (Dagenais & Meleis, 1982; Glossop, 2002; Jeffreys, 2007; Munro, 1980; O'Donnell, 2009; Wells, 2007). A number of researchers have cited a need for a more multifactorial approach to assessing applicants to baccalaureate programs (Timer & Clauson, 2011). Currently the approach is weighted heavily on cognitive components with the use of the highly cognitive GPA in the sciences as the primary screening criteria. Although the use of cognitive measures such as GPA, science and math grades, and standardized testing effectively screen the vast majority of applicants, these screens do not identify those applicants who may have non-cognitive reasons for attrition.

In the first, quantitative phase of the study, four sets of data on one survey were collected from two groups of subjects at Salla University to identify whether self efficacy, professional nursing concepts, and/or Margin-in-Life measurements related to perseverance or attrition in student nurses. These independent variables identify non-cognitive factors that have been found to contribute to attrition among baccalaureate nursing students (Dagenais & Meleis, 1982; Glossop, 2002; Jeffreys, 2007; Munro, 1980; O'Donnell, 2009; Wells, 2007).

The volunteer students were informed about the reason for the study and the components of the instrument. They were asked to sign a consent form that confirmed they were over 18 years of age, able to read and understand English and willing to participate in the study. Those completing the consent form were be asked to indicate whether they were willing to participate in a subsequent focus group. They were asked to



circle, at the top of the instrument either an S if they were a NS (nursing student) or a TN (transfer nursing student). They were then asked to complete the instrument while I was in attendance.

Instrument. The instrument was a 91 item four-part survey, which was self-administered (Appendix A) was composed of the NSES (Chen, Gully, & Eden, 2001) which was developed based on Bandura's (1977) theory of self efficacy; NSDF (Dagenais & Meleis, 1982) which modified from early work done by NASA (National Aeronautics and Space Administration) to screen engineers and scientists; and the Margin-in-Life Scale (PLM) (Stevenson, 1982) developed to quantify the margin available to face new events in our lives, based on McClusky's (1971) Theory of Power Load Margin. There was also a section that collected demographic information.

The NSES instrument. The NSES is an eight statement instrument using a four-point Likert scale from Not at all True to Exactly True. When tested on 323 undergraduates, it was found to have an alpha co-efficiency of .86 and .90 (Chen, Gully, & Eden, 2001). They also found that the predictive validity was significant at  $p < .01$ , and the scale was significantly and positively related to "self efficacy among health care employees"(p. 78). These findings made this an excellent and efficient tool for inclusion in this research.

The NSDF instrument. The NSDF is a 19 item self administered tool using a seven point Likert scale from a low of "Definitely less than most nurses" to a high of "to a degree rarely equaled" (Dagenais & Meleis, 1982, p. 410). The tool was adapted and validated by researchers at the Western Council on Higher Education for Nursing. The internal consistency reliability was .93. The tool was tested on 188 students from three

levels of nursing school, BSN, ADN, and diploma. The reliability coefficient was tested for each of the 19 items and varied between .80 and .92, which are generally acceptable levels. The instrument's validity was determined against a battery of other tests including, The student Biographical Inventory, The Powerlessness Scale by Seeman, The Self-esteem Test by Barksdale, the Omnibus Personality Inventory Form F by Heist and Yonge, and The Honesty Scale. The authors concluded that "the scale reliabilities are adequate for research purposes, and their manifest expression conveys meaningful descriptions of areas of professional functioning, thus providing both face and content validity" (p. 420).

*The Margin-in Life scale.* The MIL scale (Stevenson, 1982) is a 58 item self administered scale which measures items on a 10 point Likert type scale for importance and two 5-point scales for Power and Load. The tool explains that Power refers to the joy, pleasure, strength or richness added to a person's life by each item and Load refers to the amount of burden or responsibility each item puts upon the person.

The scale was designed to calculate the ratio of power to load and result in a number that is determined to be ones Margin in Life (Stevenson, 1982). A number of researchers have used the Margin-in-Life scale to measure margin in nursing students (Gaillard-Johnson, 1996; Harrison, 2004). Non-educational researchers have also used it to determine margin levels in employees facing change (Hanpachern et al., 1998). Yoder-Wise (1984), a nurse researcher, describes, "an estimate of face validity (for the tool) was gained with early subjects; construct validity was determined through factor analysis; and internal reliability was determined with an alpha reliability coefficient. Thus the tool (MIL) exhibited sufficient validity and reliability"(p. 17). The tool was requested from

The Ohio State University School of Nursing, Research Office as directed in the article. The office responded, that they did not have a copy but that it was contained in Patricia Yoder-Wise's doctoral dissertation and they forwarded that dissertation by email.

Prior to use, the instrument was tested with nursing student volunteers and found to take approximately 30 minutes to complete. Minor revisions were made to the tool to increase the ease of completion. To ensure adequate time for completion the students were given an hour to take the instrument.

After administration of the instrument, the results were tested for internal consistency using Cronbach's Alpha. The results demonstrated strong internal consistency with levels above .700 (NSE= .851, n=8; NSD= .955, n=19; PLM= .942, n=58).

**Phase two: focus group guide.** A focus group guide was developed to structure the discussions. It contained predominately open ended questions designed to elicit discussion and perceptions. The content of the questions were designed to relax the participants and to answer the research questions. The questions introduced the concept of non-academic barriers. The focus group guide was reviewed by a group of 5 nursing graduate students, all of whom were from a similar program, for clarity and logic. Minor adjustments were made to the tool. The focus group guide is available in Appendix B.

### **Data Collection**

After receiving approval for the research design from my institutional review board (IRB) and the Salla IRB, plans were made to obtain participants. Approvals are available in Appendix C and D.

**Phase one.** Nursing students were most available for data collection at the school of nursing during days in which the students have classes. Salla University conducts an intensive week of classes in early January. The classes traditionally take lunch breaks at the same time of day for approximately an hour. I contacted the three instructors involved in those classes and asked if they would announce that I was conducting research about nursing students and transfers from the nursing program and that I would be serving pizza in a classroom at the nursing school on a particular day during the intensive week. They were advised that they were welcome to the pizza while completing my questionnaire. They were also advised of the expected time required for the survey and were informed that there would be a lottery conducted for three \$25 gift certificates among the participants.

The nursing program director reported that there were 130 nursing students. The health studies director reported there were between 45 and 50 transfer from nursing students. The desired number of participants was therefore at least 75 NSs and 25 TSs. On the Wednesday of the intensive week, 86 students completed the study instruments. These students represented 68 SNs and 18 TNs.

To meet the desired target of 50% of the population, I spoke with members of the faculty and identified courses that contained both student nurses and health studies transfer students. I wrote to the instructors of two of the courses and obtained their cooperation in announcing to the students that I would be coming prior to and following their class to request their participation in my research. I also provided food and a lottery at these sessions. By the end of the first week in February 2012, 76 SNs and 25 TNs had completed the instrument.

**Phase two.** The focus groups were conducted using a protocol of open-ended questions. The data analysis of the quantitative material helped to guide any modification of the proposed questions. Obtaining the participants own words about their experiences was important to me. It was important to me to understanding what techniques they used to overcome any non-cognitive, non-academic barrier they perceived during their enrollment in the nursing program. These focus group processes also served to triangulate and member check the results from the quantitative phase.

I audio recorded the focus groups. Note taking and listening were employed and session memos were generated immediately following the sessions. The memos were be coded and analyzed by me. Themes were determined based on the coding and a visual representation of the findings was produced from the grouping of themes.

### **Data Analysis**

Phase one. The data collected from the participants were analyzed using the statistical software package SPSS version 19. The individual values for each response was entered, total scores for each of the three scales was determined and entered and the demographic data were coded, entered, and tallied. While the NSES and NSDF scales are cumulative, the Margin in Life scale required computation of the ratio of load to power. The importance given to each item, by the participant, was multiplied by the load score assigned, by the participant to determine the load of any given item. The importance of the given item was multiplied by the power score assigned to determine the power of any given item. Subsequently all of the load scores were totaled by participant, as were all the power scores. The ratio of the load total to the power total was calculated as described previously in Chapter I (p. 11). This ratio was labeled PLM.

Two databases were established. This step was required for some of the analysis because the three scales in the instrument contained varying numbers of questions and varying values available for scoring. One database utilized actual raw scores and calculations, it was titled "actual" and the second database utilized "z-scores" (Cronk, 2008, p. 27) derived by SPSS from the actual database. The z-score database was necessary for the comparison of scales with differing values. A z-score represents the position of the value in relation to the mean of the values, in terms of standard deviation.

The means of all three scales and the demographic elements were compared for variance and significance. The significance was established using an independent-samples *t* test. This was chosen because the samples had two distinct values, SN or TN and could be applied against a dependent variable such as sex, marital status, or NSES total score (Cronk, 2008). The *t* test assumes equal means; a significant result denotes unequal means.

The frequency of all elements in the NSES and NSDF was determined and displayed in rank order of highest responses. The PLM subscale frequencies were determined and an independent-samples *t* test was performed comparing the two group means for each subscale. When significance was established the subscale was then evaluated using an independent-samples *t* test using student type, sex, hours worked per week, and marital status as dependent variables. The mean contribution of each subscale to the total PLM was identified and tested using an independent samples *t*-test.

The relationship between the results of the three tools was compared through *t*-tests of the z-scores derived from the actual results. Frequency analysis was done with the demographic variables and compared between the NS and TS. The frequencies of

responses to individual elements of the NSES and NSDF scales were measured and those of the subscales of the PLM were determined.

The NSDF scale used 7-part Likert scale. For analysis purposes the data were reduced to a 4 part scale by uniting the "definitely less than most nurses and somewhat less than most nurses categories" and the "definitely more and somewhat more than most nurses categories."

The relationship between the NSES, NSDF and the PLM means were investigated using a Pearson Correlation Coefficient and the z-score data. "The Pearson correlation coefficient (sometimes called the Pearson product-moment correlation coefficient or simply Pearson  $r$ ) determines the strength of the linear relationship between two variables" (Cronk, 2008, p. 41).

**Phase two.** Each focus group session was audio recorded with the participant's prior knowledge and consent. The researcher prepared a transcript of the session. The rules and procedures for the analysis of the transcript data are described in Sisco (1981) in Appendix E.

The transcripts were analyzed for phrases or clauses that were common or significant. The listings were reviewed for themes and differences and categories were established. The categories were reviewed for clusters of concepts. To organize the clusters, they were grouped together and arrayed on a single sheet and were placed on the paper in what appeared to be sequential relationship. Verbatim quotes were extracted to represent and support particular concepts.

## **Integration of the Quantitative and Qualitative Results**

The quantitative and qualitative data were integrated to determine the answers to the research questions. This required "stepping back from the detailed results and advancing their larger meaning in view of the research" (Creswell & Plano Clark, 2011, p. 209) questions and the literature.

The goal of this research was to answer the research questions about whether any or some of the three tools, would have been predictive of the sub-group the students were in. By answering the research questions the researcher hoped to determine a set of factors that together create an attrition propensity construct.

The qualitative data were hoped to validate the results of the quantitative strand and expand on the students' perceptions of their attrition propensity. The focus groups were designed to elucidate the successful and unsuccessful measures taken by students to overcome this propensity. The synthesis of these two data sets was thought to be helpful to the schools of nursing in better understanding the non-cognitive factors that influence attrition and how to screen for them prior acceptance. This would in the long run increase graduation rates and reduce the nursing shortage.



## **Chapter V**

### **Findings**

In this chapter, all the results from the quantitative and qualitative data collection described in Chapter IV are presented and examined. The quantitative data are evaluated using analytic and comparative methods. The research questions posed by this study are preliminarily answered and unique characteristics of the sample are identified. The phase two qualitative focus group data are categorized, trended, and integrated with first phase of data collection. Examination of the data sources strive to determine if the differences between student outcomes can be utilized to anticipate which applicants to the School of Nursing will eventually attrition out of the program.

To answer the research questions posed in this study, the methodology described in Chapter III was implemented. The study was conducted at Salla University in the months of January and February 2012, following institutional review board approval by both the Rowan University and Salla University.

The qualitative strand was included to obtain the students perceptions about the barriers they faced as they progressed through the nursing program. It was designed to help explain the results of the quantitative strand. The integration of these strands is designed to help the researcher enhance the understanding of each strand and their more powerful joined information.

## **Profile of Survey Sample**

Table 5.1 displays the demographic data obtained through the survey instrument. There were 102 subjects in the quantitative survey portion of the study. The participants consisted of two categories, 77 Nursing Students (NS) and 25 Transfer Students (TS). This was a sample of convenience drawn from the larger population of approximately 130 Nursing Students and 50 Transfer Students at Salla University School of Nursing and Health Sciences. Males made up 10% of the total sample. Eighty-five percent of the subjects described themselves as being unmarried. Fourteen percent reported having children living with them. When asked their work status, 27% did not work, 42% worked < 16 hours per week, and 31% worked 16 or more hours weekly. The median age was 22.8 years. There was no significant difference between the two sets within the sample. Unfortunately one subject did not complete the demographic section of the survey, and another did not complete the NSES or NSDF portion.

Of the students included in this study, 25% reported coming from a community college and 6% came from a 4-year college prior to nursing school. The students with experience in education beyond high school were 46% of the TS participants and only 26% of the NS participants.

Table 5.1

*Profile of the Survey Sample*

Variable	Nurse Students		Transfer Students	
	<i>f</i>	%	<i>f</i>	%
	(n=77)		(n=24)*	
Mean Age	22.57		23.71	
Married	5	6.5	4	17.0
Divorced	5	6.5	0	0.0
Single	67	87.0	19	79.0
Widowed	0	0.0	1	4.0
Male	6	8.0	4	17.0
Female	71	92.0	20	83.0
Number of Children living with				
• 0	68	88	19	79
• 1	3	4	3	12
• 2	3	4	1	4
• 3	2	3	0	0
• 4	0	0	1	4
• 6	1	1	0	0
Hours worked weekly				
• None	20	26	7	29
• < 16 hours	34	44	9	37.5
• = Or > 16 hrs.	2	0	8	33.5
Previous Schooling				
• High School	57	74	13	54
• Community College	16	21	9	37
• Four-Year College	4	5	2	8

\* missing one case

## Analysis of Data

Research Question 1: Is there a difference in the mean scores for the NSES total score, NSDF total score, and PLM ratio of the NS and TS groups?

Table 5.2 provides data based on mean scores from the two groups. The mean total score for the NSES was essentially the same for the two groups. The mean total scores for the NSDF were similar with the Transfer student totals slightly higher. The mean total scores for the PLM ratio demonstrated a wider variance, with the TS score being 58% of the NS score.

Table 5.2

### *Difference in Scale Mean Scores*

Scale	Nurse Student n=77		Transfer Student n=25	
	Mean	SD	Mean	SD
<i>NSES</i> <sup>a</sup>	27.83	2.830	27.52	4.293
<i>NSDF</i> <sup>b</sup>	81.78	18.312	83.12	18.669
PLM ratio <sup>c</sup>	0.3227	0.25019	0.1886	0.28456

a. New Self-Efficacy Scale (Chen, Gully, & Eden, 2001), b. Nursing Self-Description Form (Dagenais & Meleis, 1982),  
Cover Load Margin (Stevenson, Construction of a scale to measure load, power and margin in life, 1982)

Research Question 2: Is there a significant difference in the NSES total score, NSDF total score, and PLM ratio of NS and TS?

Table 5.3 displays the variation in the results of the two groups on the three survey scales. Table 5.4 represents the results of the independent *t* tests used to determine any potential differences in the distribution of the results from the two groups. The independent *t* test used the independent variable of student type as the grouping variable and the dependent variables were the total scores on the NSES, NSDF, and PLM scales

(Cronk, 2008). An independent *t* test comparing mean scores of the NS and TS groups found a significant difference between the PLM means of the two groups ( $t(99) = 2.250$ ,  $p < .05$ ). The PLM mean of the TS group was significantly lower ( $M = -.3833411$ ,  $SD = 1.0$ ) than the PLM mean of the NS group ( $M = .1244614$ ,  $SD = .9476571$ ). There was no significant difference between the two groups for the NSES and NSDF mean scores.

Table 5.3

*NSES, NSDF, and PLM means by Student Type.*

Student Type	<i>n</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
NSES				
NS	76	27.83	2.830	.325
TS	25	27.52	4.293	.859
NSDF				
NS	76	81.78	18.312	2.087
TS	25	83.12	18.669	3.734
PLM				
NS	77	.3227	.25019	.02851
TS	25	.1886	.28456	.05691

Table 5.4

*Independent-Samples t test of Survey Scales Means*

		Levene's Test for Equality of Variances		t-test for Equality of Means				Std. Error Difference	95% Confidence Interval of the Difference	
		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2- tailed)</i>	Mean Difference		Lower	Upper
NSES	Equal variances assumed	5.876	.017	.413	99	.681	.309	.748	-1.176	1.794
NSDF	Equal variances assumed	.011	.916	-.317	100	.752	-1.341	4.235	-9.743	7.062
PLM	Equal variances assumed	.015	.902	2.250	100	.027	.13406	.05959	.01585	.25228

Research Question 3: If a significant difference in mean scores exists, in which subscales or indicators was the difference significant?

PLM scores were found to be significantly different in mean scores. Since Stevenson's (1982) MIL scale, which calculates the PLM ratio, was developed to measure and compile five sub scales of the Load and Power dimensions experienced by an adult, it was necessary to examine the results of the individual subscales to determine which indicators had a significant difference.

The sub scales are categorized as Health, Religiosity, Interdependence, Self Confidence, and Parenting Satisfaction. The values for these sub scales are calculated in a similar fashion as the Total PLM is calculated, as described in Figure 1.4 Power-Load-Margin Calculation (p. 10). Only certain items are utilized with each scale. Table 5.5 lists the item number included in each subscale. These item numbers refer to the numbers assigned in the PLM section of the survey instrument in Appendix A.

Table 5.5

*Components of the Subscales of MIL*

Scale	Item Numbers
Health	1,2,6,7,9,11,12,14,16,17,22,24,28,29,32,37,39,42,44,50,53,57
Religiosity	5,8,13,15,30,38,46,47,49,52,56
Interdependence	3,18,21,25,26,34,36,40,48,51,58
Self Confidence	10,19,20,23,27,33,54,55
Parenting Satisfaction	4,31,35,41,43,45

Table 5.6 reflects the mean and standard deviation of the total MIL scale and the individual subscales, with scores separated by type of student and the percentage of contribution to the total PLM. The smallest average PLM rate was in Parenting Satisfaction for all participants and the largest was in Religiosity. The table demonstrates that the Health sub scale is the largest contributor to the PLM ratio. The fact that the PLM is a ratio precludes the evaluation of each item in the scale. Individual values are not relevant; the relevance comes from the ratio of the scores assigned by the participant. This is why the mean sub-scale ratios were compared to investigate potential indicators of difference. No significant difference was observed in the mean scores of the NS and TS groups on the Religiosity, Interdependence, Self Confidence, or Parenting Satisfaction sub scales.

Table 5.6

*Comparison of PLM Subscales*

Scale	<i>M</i>	<i>SD</i>	Items	Contribution
Total Scale	0.2898	0.26401	58	100%
Health Scale	0.3425	0.28607	22	38%
Health NS	0.3844	0.26407		
Health TS	0.2132	0.31701		
Religiosity Scale	0.3900	0.26631	11	19%
Religiosity NS	0.4116	0.2626		
Religiosity TS	0.3372	0.26908		
Interdependence Scale	0.2719	0.27294	11	19%
Interdependence NS	0.2939	0.26546		
Interdependence TS	0.2041	0.28982		
Self Confidence Scale	0.2025	0.32897	8	14%
Self Confidence NS	0.2251	0.29992		
Self Confidence TS	0.1332	0.40491		
Parenting Satisfaction Scale	-0.596	1.81368	6	10%
Parenting Satisfaction NS	-0.728	1.91842		
Parenting Satisfaction TS	-0.191	1.14005		

Overall, only the health and religiosity scales were in excess of the .30 range that McClusky (1963) defined as the minimum necessary for acceptance of new challenges. Since Parenting did not apply to 85% of participants, it is necessary to note that the Self Confidence scale produced the lowest ratio for all groups of participants.

An independent-samples *t* test comparing the mean scores of the NS and TS groups found a significant difference between the means of the two groups on the Health Scale ( $t(100) = .642, p < .01$ ). The results are displayed in Table 5.7 and 5.8. The mean of the TS group was significantly lower ( $M = .2132, SD = .31701$ ) than the NS group ( $M = .3844, SD = .26407$ ). When the health scale was evaluated based on the sex of the participant, an independent-samples *t* test comparing the mean scores of the male and



female groups found a significant difference between the means of the two groups. The mean of the male group was significantly lower ( $M = .1452$ ,  $SD = .33604$ ) than the female group ( $M = .3634$ ,  $SD = .27517$ ) but due to the small volume of males ( $n=10$ ) it was deemed to not yield practical significance. A comparison of means of the marital status of did not demonstrate significance.

Table 5.7

*The Variance Results on Health Subscale*

PLM Ratio	<i>n</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
Student Nurse	77	.3844	.26407	.03009
Transfer Student	25	.2132	.31701	.06340

Table 5.8

*Independent-Samples t Test of Health Subscale*

	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means				95% Confidence Interval of the Difference	
	<i>t</i>	<i>df</i>	<i>Sig.</i> (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Equal variances not assumed	2.441	35.463	.020	.17128	.07018	.02887	.31369	

$P < .05$

Research Question 4: Is there a significant relationship between the NSES total score, NSDF total score, and PLM ratio of NS and TS?

The relationship between the NSES, NSDF, and the PLM means was investigated. A Pearson correlation coefficient was calculated for the relationships as displayed in Table 5.9 . There was a moderate positive correlation between the NSES and NSDF

( $r(100) = .314, p < .01$ ). The relationships of student type, sex, schooling, and hours worked and NSES, NSDF, and PLM means were investigated. A Pearson correlation coefficient was calculated for the relationships and found that a weak negative correlation between PLM and student type ( $r(102) = -.220, p < .05$ ) and a weak positive correlation between PLM and Sex ( $r(101) = .200, p < .05$ ).

Table 5.9

*Pearson Correlation of the NSES, NSDF, PLM, and Student Type Indicators*

	<i>M</i>	<i>SD</i>	<i>N</i>		
Student Type	1.25	.432	102		
NSETOT	27.75	3.232	101		
HSDTOT	82.11	18.316	102		
PLM	.2898	.26401	102		
<b>Correlations using z scores</b>					
		Student Type	NSETOT	NSDTOT	PLM
Student Type	Pearson Correlation	1	-.041	.032	-.220*
	Sig. (2-tailed)		.681	.752	.027
	N	102	101	102	102
NSETOT	Pearson Correlation	-.041	1	.314**	.156
	Sig. (2-tailed)	.681		.001	.120
	N	101	101	101	101
NSDTOT	Pearson Correlation	.032	.314**	1	.094
	Sig. (2-tailed)	.752	.001		.347
	N	102	101	102	102
PLM	Pearson Correlation	-.220*	.156	.094	1
	Sig. (2-tailed)	.027	.120	.347	
	N	102	101	102	102

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

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

**Profile of Focus Group**

Two focus groups were held on the Salla University Campus. Students who had participated in the previous quantitative data collection were invited to return to discuss the results and to enhance the researchers understanding of their perceptions. The NS focus group consisted of five participants and the TS focus group was made up of four

participants. They represented 6% of the NS participants and 16% of the TS participants in the quantitative survey.

The NS group consisted of 4 females and 1 male. They were all between 20 and 22 years old and unmarried. The TS group consisted of 3 females and 1 male. They were between 21 and 22 years old and unmarried. The focus groups took between 20 and 30 minutes to conduct and were structured around the interview protocol described in Appendix B.

The students in both groups represented traditional college age students (18-22 years old). The discussions were held in classrooms at Salla University. The NS group met in a classroom with fixed seating, the students all sat in the first row and I sat in a chair in front of the students. The NS students all arrived at the same time. They had all just finished a class together but only two of the students seemed to have intimate conversations reflective of friendship. The male student sat in the middle of the row and was the third person to provide input. All of the students shared equally, with no one student dominating the conversation.

The TS group also met in a classroom but the chairs were movable and were placed in a circle. The TS students came into the meeting over a 10-minute period and the audio recording was not begun until there were four students. The male student sat next to the me and the three female students sat together a seat away. The students appeared to know each other but did not arrive together or share conversations with each other.

Research Question 5: What do students perceive as the non-cognitive barriers they faced while enrolled in the school of nursing?

Table 5.10 provides the themes identified from a content analysis of the transcripts of both focus groups in order of frequency. The transcripts were analyzed using the content analysis as described in Appendix D. The NS and TS transcripts were analyzed separately using the same process. Phrases and clauses were identified as units of analysis and were highlighted. When there were compound thoughts, they were divided and analyzed separately. Clarifications were added, where necessary to understand context. The individual units were placed in a list and reviewed and read multiple times. Logical categories were established and the list of units was resorted based on the categories. These categories were reviewed multiple times and were collapsed where necessary to achieve logical subcategories. The frequency of each unit and subcategory was then tallied and ranked in order of occurrence. Verbatim quotes were identified, which best represented the principle concept in the category.

Both groups mentioned "shock" the most. It was described as the shock they experienced upon entering the junior or first nursing year. One NS student put it this way "Definitely a shock coming into our junior year than the first two years." "It was like a shock then." What they discussed as shocking was the difference in teaching styles, the intensity of the work, the difference in testing styles, and the need to "think differently." This description of shock, was both academic shock as demonstrated by the comments about intensity and thinking differently as well as a form of transfer shock as demonstrated by the change in teaching styles and the difference in testing. Both groups acknowledged that they felt unprepared for the degree of shock.

Table 5.10

*Themes from Focus Groups in Rank Order*

Category	Subcategory	NS group	TS group	Total
Shock				24
	Junior year different	4	4	
	Not prepared for junior year	3	2	
	Type of thinking different	0	2	
	Junior year more intense	2	3	
	Different teaching/testing styles	2	2	
Bonding				20
	Study with other nurses	6	1	
	Socialize with other nurses	6	0	
	Study groups	3	2	
	Studying needs modification	0	2	
Time Management				19
	Different from other majors	6	1	
	Fewer days on campus	2	3	
	Necessary time for preparation	2	3	
	Working while in school	2	0	
Supports/Issues				18
	Campus Programs	4	5	
	Mental Maturity	4	0	
	Parents	2	1	
	Family Issues	0	2	
Weeding out		2	3	5

The most frequently mentioned theme by the NS group was labeled "Bonding." For example, "Bonding with other nursing students who have the same schedule, giving up on trying to keep up with others." It was the least mentioned theme by the TS group. The NS group stressed that their ability to deal with the obstacles faced in their junior year was their ability to study and socialize with other nursing students, establish study groups, and modify the methods by which they studied. The TS group mentioned

"Bonding" as a technique that they had heard could be successful, but they did not report using that technique.

One of the main causes cited for the changes in the junior year was noted to be the loss of two days on campus due to time requirements at off-campus clinical sites. This loss of two days, compressed the remainder of their classes to only three days, and increased the likelihood of multiple tests or requirements on the same day. This was described as a need for "time management" skills. The NS group discussed time management almost twice as much as the TS group. The NS group especially emphasized the fact that the junior year changed their relationships with fellow students in other majors. One NS student noted, "I think these people who did not have enough to keep going, like some of them just kept going out and not putting in the time to study."

The NS group discussed their awareness that their friends and roommates that were not nursing students had much more free time. They identified that it was important that they develop relationships with other nursing students, so they were in a group that had like demands.

Student- I don't know if this is really it, but when we did get to junior year, seeing other majors on campus, they had nothing to do and trying to still be in that lifestyle... Realizing that that is not going to work.

Researcher- So what helped you get over the social hurdle, that obstacle?

Student- My first bad grade...

Student- Bonding with other nursing students who have the same schedule.

Giving up on trying to keep up with others.

The TS group identified the issue of time management but only one participant discussed the difference between majors in the same proportion. The TS group did not mention socializing with other majors.

Both groups identified family as a support but the TS group also noted that family was a distraction as well. The groups both acknowledged that there were campus resources that were available to assist with transitions and time management, but to the researchers surprise, all the TS group members acknowledged having sought help from those resources. Only one NS member identified using the resources. They reported that the resources were helpful in dealing with obstacles.

The groups discussed the "weeding out" of unqualified students in courses in their freshman and sophomore years. They particularly mentioned the Anatomy course. A student in both the NS and TS group noted that having passed Anatomy they felt they were prepared for the nursing courses in junior year. It appears that they saw passing the "weeding out" course as a predictor of future success.

One member of the NS group defined the difference between those who were successful and those who were not "I don't think they were mentally mature enough to handle it." Another student added, "You have to give up a lot to handle it. You have to be willing to sacrifice."

The groups described the freshman and sophomore years as a time when they did well in their courses; they lived on campus with non-nursing counterparts, and engaged in social and student activities. They described their classes as being 25-30 students with ample opportunity for questions and discussion. They reported that testing during those two years was mostly memorization and regurgitation of facts.

Both groups described that the junior year brought a change in class style to larger lecture based classes with less opportunity for individual questions and support. The NS group criticized some lecturers for only using textbook sources, which limited the perspective of the students. The TS group discussed the change in assessment techniques.

Researcher-What was different?

Student- The test questions were, pick the best answer, which is new because they used to be fill in the blank,

Student- or memorizing, but this was applying.

Student- So you have to not only learn it and know it but you have to apply it, which can be hard.

Research Question 6: What do students perceive as the techniques they utilized to attempt to overcome the non-cognitive barriers?

Three basic techniques were described as being used to attempt to deal with the non-cognitive barriers arising in the junior year. The first technique was to seek assistance from campus resources. The second was described by both groups as an attempt to modify or enhance their time management skills. The third technique was a clustering of nursing students to socialize and study together. Essentially this clustering developed a support group for the students and normative values.

The NS group mentioned being aware of services on campus to assist with time management and study habits but they reported that they were held at inconvenient times and only one of the NS group reported availing himself of the services in sophomore year. They described using "mental maturity" to arrive at the behavior changes necessary. This "mental maturity" appeared to be an internal force not an external resource.



The NS group stressed the need to have a social and study group of nursing students to "bounce things off of" and to keep them aware of the realities of the nursing program.

Student (NS)- You have to give up a lot to handle it. You have to be willing to sacrifice.

Student (NS)- It was their maturity; they were stuck in the freshman and sophomore attitude and never got over it. Their work just suffered.

Student (NS)- I think there are people who did not have enough to keep going, like some of them just keep going out and not putting the time to study.

The TS group pointed out the need for time management and study skills but even though they frequently reported reaching out to the university counseling services, they reported not finding the services helpful to them. It was not individualized enough. One student reported changing to studying alone in the library, but acknowledged it didn't help much. One student acknowledged that studying in a group is helpful and now that she has transferred to the health studies program she is using that technique.

The TS group stressed that it was not whom they studied with but how they studied that was a problem. They identified that the junior year required a different way of using information not just the memorization of information. This was a new way of learning and thinking.

Both groups acknowledged that during all three of their college years they had other outside influences such as family issues and employment responsibilities. The NS group described the work responsibilities as positive and negative. Positive in that it gave them more experience and confidence in their abilities in nursing and negative in that it

consumed valuable time. Only the TS group had an individual who described family as more of a burden than as a support.

What both groups stressed was the surprise of the sudden change from sophomore year to junior year and how they were not warned or prepared. "I was really involved (in student activities) and nobody told me to drop these or not take on these roles" shared a TS student. This was despite the fact that all nine of participants did their first two years at Salla University.

### **Integration of the Data Strands**

The quantitative data were structured to ask the questions answered by the developers of the instruments. The three survey instruments were designed to measure the degrees of self-efficacy, nursing alignment, and margin of each of the selected groups. The qualitative data being more open ended permitted selected students to add to the themes examined by the research. This change in focus, during the qualitative sessions, from admission screening to curriculum and environmental change surprised me. However, with further thought and analysis I realized that the students in the TS group were highly likely to be students whose attrition occurred in the junior year. Those students who transferred from the pre-requisite nursing courses were more likely to have transferred to a major other than health studies, as health studies requires many of the same pre-requisites as nursing.

Therefore the participants were sharing their experiences with a particular type of attrition. I began to see that the attrition described by these groups was the one most critical to the maintenance of a steady flow of students into the nursing pipeline. The university routinely admits more students to the pre-nursing requisite courses than it

expects to admit to the nursing courses in the junior year because it uses the pre-requisites as the participant students described to weed out those who are not going to be successful (personal communication, B. Horst, RN, PhD, the BSN Program Director, February 22, 2011). Once students begin the sequence of the nursing courses, their place in the class becomes irreplaceable, if someone drops out there is rarely anyone prepared to take their place. It is therefore important to ensure that as many of the students, who begin the junior year, are still present at graduation.

The two strands of data came together in one important statement by an NS student. "I think there are people who did not have *enough* to keep going." What is "enough"? Is it margin? Is it what McClusky (1963) described as the excess energy necessary to adapt to changes in adulthood? McClusky asserts that for adults to engage in new learning opportunities they need to have a modicum of margin, that being the excess of personal power over their personal load. The transition from the sophomore to the junior year in a BSN program was described by the study participants as a time when students are required to not only learn new facts but must also learn new personal behavior. The new behavior includes learning to apply knowledge and learning to control your environment to achieve optimization of time. Students with inadequate margin may not be able to achieve these new skills.

### **Integrative Analysis**

The NSES scale. The results of the NSES testing did not show significant differences between the NS and TS groups. The responses on the whole were very positive (moderately true and exactly true), with only 4% of the answers in the negative columns (not true at all and hardly true). I was surprised by these findings. Self-efficacy

is often impacted by failure (Bandura, 1982; O'Donnell, 2009). Many of these transfers were a result of failure to perform adequately. Further analysis showed that the lowest scores for the scale were the TS responses to "Compared to other people, you can do most tasks very well" and "Even when things are tough, I can perform quite well". This may reflect the effect of the transfer events. Again it may not reflect the responses that would have been received prior to the transfer event. To determine the value of the self-efficacy scale in screening applicants, future research should concentrate on longitudinal studies of pre admission scores and final student status.

**The NSDF scale.** The NSDF scale was used to measure the degree to which one compares themselves to their concept of a professional nurse. The hypothesis was that the NS group would more closely align with the professional nurse concept measured by the NSDF. In addition, that the TS group would have determined that they were not suited for the profession or have been told that they were not qualified. The concept of not fitting into the profession lessens the ability and willingness to persevere. Unexpectedly in the results of this research, the TS group were, in fact, 10% more likely to rate themselves as "Far more than most nurses/To a degree rarely equaled by most nurses."

The NSDF scale does not use the term student nurse it uses the term nurse. It is therefore, asking respondents to compare themselves to nurses they have used to form their professional nurse concept. The results may reflect that the TS group thought they more closely modeled the professional nurse than the NS group did. There maybe two reasons for this result, one is that the TS group has not had enough real life experience with professional nurses to accurately judge their similarity, or the NS group has had

enough exposure to practicing professional nurses to determine that they have not yet reached the pinnacle of their alignment with the professional.

In either case, the NSDF scale did not provide adequate information for recommending its use in pre admission screening. I would recommend further research into a scale which more accurately predicts if the applicants understanding of the nursing role reflects the reality of nursing today. Their understanding may also be an appropriate topic for an on-site interview with an applicant. With 22% of the attrition in BSN students coming as a result of a change in career goals (PA Department of Health, 2010), it is an important element for screening.

**The PLM scale.** The PLM ratio, as defined by McClusky (1963), is the ratio of power to load in a person's life and represents the margin or excess of power available to deal with new challenges in adulthood. The survey data were collected after the TS were in the health studies curriculum. It is therefore in question, as to whether, their low PLM was a result of their transfer or the cause of their transfer. McClusky (1963) suggests that a margin of greater than .30 is necessary to meet new challenges. The mean for the NS was .3227, with a standard deviation of .25019. Fifteen percent of the NS group had a PLM ratio of less than .30 ( $n=77, < .3= 12$ ), while 36% of TS group had a PLM ratio of less than .30 ( $n=25, < .3= 9$ ). Therefore the TS group had over twice the likelihood of not having enough margin to take on a new challenge.

It is unclear to me if these scores represent the same amount of margin the TS group had prior to their transfer or if transfers somehow raised or lowered their margin. If transfers lowered the margin one would expect it to be reflected in the subscale of the MIL that is devoted to self-confidence. The largest variance between the NS and TS

subscale means is between the two self-confidence scales (.09), closely followed by the difference in interdependence scale (.89). The combination of these two subscales represents 25% of the total PLM. Only the Parenting Satisfaction subscale had a higher subtotal for the TS group than the NS group.

It is however possible that the self-confidence subscale scores are a reflection of the events that brought the TS group to the point of transfer. In future studies the scale should be applied to admitted students prior to the start of any courses to see if the scale predicts potential problems. Its use as an admission-screening tool is still untested, but there may be a correlation found in future longitudinal studies.

### **Extended Literature Review**

As a result of the analysis of the focus group data an extended literature review was conducted to explore the key themes. Those themes were: transfer/academic shock, involvement and margin, and transitioning. I desired to see how a low margin contributed to or resulted in issues in these areas. Many combinations of these elements have been researched and identified in both the nursing literature and the general academic literature. They have been discussed in relation to the transferring at the end of a community college experience and from pre-requisites to the professional major.

Transfer shock. Williams (2010) and Newton (2008), nursing researchers, applied the general education concept of transfer shock, a severe drop in performance after transfer from a two-year program (Hills, 1965), to entry into upper level nursing programs that have different and more rigorous academic expectations. Some of the major themes Williams found in her interview results were similar to the findings in this research, the need for time management skills and using university counseling and

advising services to keep up with the new demands. Another theme that emerged was the concept of "just doing it" having a mindset of persisting. This resembled the term "mental maturity" used by the focus group members to maintain focus on chosen goals. Students also described how they persisted by connecting with peers and certain family members for support, reminiscent of the bonding described in the focus groups.

Galbiati (2009) implemented a program for at-risk students at a community college, which offered strategies for success upon entering a nursing program. It was based on identified issues in the literature and the faculty's past experience. These issues included "learning patterns, time management, study and test taking skills, and critical thinking skills"(p. 100). These are practically identical to the issues identified in the focus groups conducted at Salla University. Galbiati's program was developed by faculty and support staff and was offered in the summer session. It was very well received by both the recipients and the providers. The program resulted in a statistically significant positive change for students at-risk as well as on student retention.

Newton (2008) described in her findings that transfer shock was caused by a need of students to adjust to the significant social and psychological changes in response to new academic and personal demands imposed by transferring into a new academic environment. This new environment brings with it new time and intellectual demands. Students need to recognize these new demands and develop the coping mechanisms necessary for survival. Again this is reminiscent of the focus groups findings and perhaps calls for the margin necessary to learn new skills.

The Deary et al. (2003) longitudinal nursing study found that the students had long standing coping strategies which did not change during their enrollment. This

pattern lead to negative mechanisms such as avoidance and emotional coping to handle the negative aspects experienced during the nursing program. Deary et al., findings support the assertion that "the relationship between conscientiousness and personal achievement was obvious: students who put more into the program (me) are likely to gain more" (p. 78). This raises the question of whether coping skills are permanent traits and not likely to be modified or changed, those who have successful skills will activate them and others won't. Or is it that one needs the margin to take on new attributes?

One of the necessary coping skills appears to be assistance seeking. Cameron et al. (2011) performed an integrative review of the literature related to attrition and "identified several studies from across the world that reported students were often surprised at the intellectual demands" (p. 7) of nursing programs. This lack of understanding of the intellectual demands of a nursing program led to a lack of preparedness for the degree of studying required and led to students leaving the programs. The researchers go on to report that a number of studies showed that students who did not reach out to the available faculty and counseling resources had a higher rate of attrition.

While the focus groups in this study both reached out to counseling resources, only one member of the NS group found the services helpful. The TS group reached out in larger numbers but reported less success, which may support Cameron et al.'s (2011) findings.

**Academic shock.** Academic shock, which is defined by Green (1987) as, a syndrome characterized by considerable inner emotional and cognitive upheaval and ... central to this upheaval is the re-socialization process that encourages a



different conception of nursing practice and of the practitioner herself. Who is the student and who she will become (is) under scrutiny. (p. 269)

was described by the participants as intensity of the work in courses and changes in the testing methods.

Jeffreys (2007) found during her study of attrition and perseverance in nursing school that success in the first junior year nursing course was the best predictor of retention. She suggested that all students who fail the first medical surgical nursing course be considered at risk and be provided with additional mentoring, tutoring or other supports. Jeffreys supports Wells (2003) epidemiological approach to solving student nurse attrition. They both agree that students need a more realistic vision of being a nurse and being a nursing student; that the faculty must be aware of signs of impending attrition and the different paths that students take; and that the institution must have some markers which help identify those students who are at risk and require early intervention.

Newton and Moore (2009) found similar characteristics in their study of ethnic minority students in baccalaureate nursing schools. They reported,

that the dismissed (attrition) students tended to have pre nursing GPAs that were near the minimum required for admission to the BSN program. They had a tendency to repeat courses, especially the core sciences and they had taken a large number of their pre-requisite credits at a community college. (p. 27)

These characteristics of low GPAs and a history of failure were not explored in this study, and none of the focus group participants were community college transfers, but both points raise suggestions for future longitudinal research.

**Involvement and margin.** Astin (1999), espouses a very useful theory to explain student development. It is the theory of involvement. It relates to and supports McClusky's (1963; 1970; 1971) Power-Load-Margin theory. Astin believes that "student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (p. 518). It is therefore logical to assume that those with a lower power load margin as a student maybe unable to support the energy necessary to develop strong student involvement. This involvement and devotion of energy could be seen as the ability to "just do it" described by participants.

One of Astin's (1999) basic postulates is that the amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in the program"(p. 519). It is conceivable, therefore, that without adequate student involvement, desired learning and development will not happen, and without adequate margin, the energy source, involvement will be too small.

Astin (1999) further points out that student involvement requires time and effort and that time is a valuable and allocated resource for collegiate nursing students. Professional studies are competing with other activities for the allocation of time and effort. The ability to be involved is related to time management, as the pull on time becomes more intense for the junior nursing student.

Astin (1999) asserts that the first task in helping students, who are having academic difficulties, is to examine where they are focusing their energies. He points out that student peers heavily influence their commitment of time and energy. Therefore, the peer relationships that are strongest within the classroom can improve or decimate focus

and time allocation. This supports the bonding theme discussed frequently by the NS focus group. Since peers influence time allocation, it was important to develop peer groups with the same time constraints and the same goals.

Pace (1984), finds as a result of his study of college students that granted the importance of all the elements that influence who goes where to college, once the students get there what counts most is not who they are or where they are, but what they do...The quality of the effort that students themselves invest in using the facilities and opportunities for learning and development that exist in the college setting. (pp. 43-44)

Pace sums up the finding that the quality of the students' response to the obstacles they face is the predictor of success. McClusky might add that success depends on the margin available and the skills that are employed.

**Transitioning.** The transition from being a pre-nursing undergraduate to the nursing curriculum appears to follow Van Genepp's (1960) theory that students go through three stages when they navigate from one role to another. The first is leaving the past behind, the second is distancing one's self from the familiar patterns of the past to the stress and bewilderment of the new. But true change lies in achieving the final stage when students adopt new ways and new norms. For nursing students the loss of two days a week on campus and the consolidation of classroom participation to only three days a week creates the need for such a transition. Those who can successfully make their way through the stress and bewilderment to the clarity that comes with appropriate adjustment appear to be more successful in persisting in the program.

The TS focus group pointed out the new style of thinking that was required to be successful in assessments. They described it as going from memorization and regurgitation to more critical thinking that requires synthesis and application. Gellin (2003), points out that there are multiple definitions of critical thinking, a simple one "is being able to properly construct and evaluate arguments"(p. 746). Pascarella and Terezini (1991) identified that students who strongly interact with faculty and peers have an improvement in critical thinking. Neither group discussed personal interactions with faculty in their junior year. The TS group did discuss the loss of such interaction after sophomore year.

**Bonding.** Students who take advantage of the opportunities on campus to interact with others collect diverse points of view and additional unique experiences. These exposures lead to gains in critical thinking and groups provide a laboratory for such thinking (Gellin, 2003). The NS said that "bonding with other nursing students" and letting their "social environment become (our) fellow nursing students was one of their techniques for success."

Deary et al. (2003), identified social isolation as an issue in attrition and warned that students who were self centered were likely to be isolated. Social integration as described by Tinto (1975, 1988, 1993) seemed to be essential to the commitment to persistence. Tinto felt that social integration occurs within the classroom and not during extracurricular activities. It is the coursework that forms the bonds and the study process reinforces the strength of the associations. Both of the focus groups discussed the importance of studying with other nursing students, but only the NS group described having accomplished that pattern.

Perseverance is achieved through a combination of previously acquired coping skills, learned behavior modification, and the necessary margin-in-life to implement the necessary strategies when faced with a stressful transition. These elements are in a delicate balance and are constantly shifting in strength and priority, especially during changing life situations.

## Chapter VI

### Summary, Discussion, Conclusions, Recommendations, and Reflections

The purpose of this study was to identify a construct for predicting attrition in nursing applicants. The study proposed that if applicants for a nursing school could be identified as having a propensity for attrition, defined as, a low margin-in-life, a low level of self efficacy, or a negative valence with regard to nursing, these findings would contribute to the identification of otherwise qualified students who were less likely to persevere. I defined these qualities to be non-cognitive.

To test this theory, two groups of students, one group that had transferred out of the nursing program at Salla University (TS) but remained in the health studies program and one that persevered at the nursing program (NS), were given a survey, consisting of multiple scales. Part one tested self-efficacy; it was the NSES (Chen, Gully, & Eden, 2001) that was based on the concepts of self-efficacy developed by Bandura (1977; 1982; 1997). Part two tested nursing self-description through the NSDF (Dagenais & Meleis, 1982). Part three was the MIL scale developed by Stevenson (1980) to measure the power-load-margin of adults. Part four was a collection of demographic elements. Two focus groups were conducted, one with the NS participants and one with TS participants. There were five NS students and 4 TS students involved in the groups.

The quantitative data were analyzed using measures of central tendency, independent-samples *t* tests, and Pearson's correlation coefficient, to determine the

difference between the groups and the correlation between the various factors. The qualitative were analyzed using content analysis to reduce the transcript into major themes. Similar themes were present in both groups.

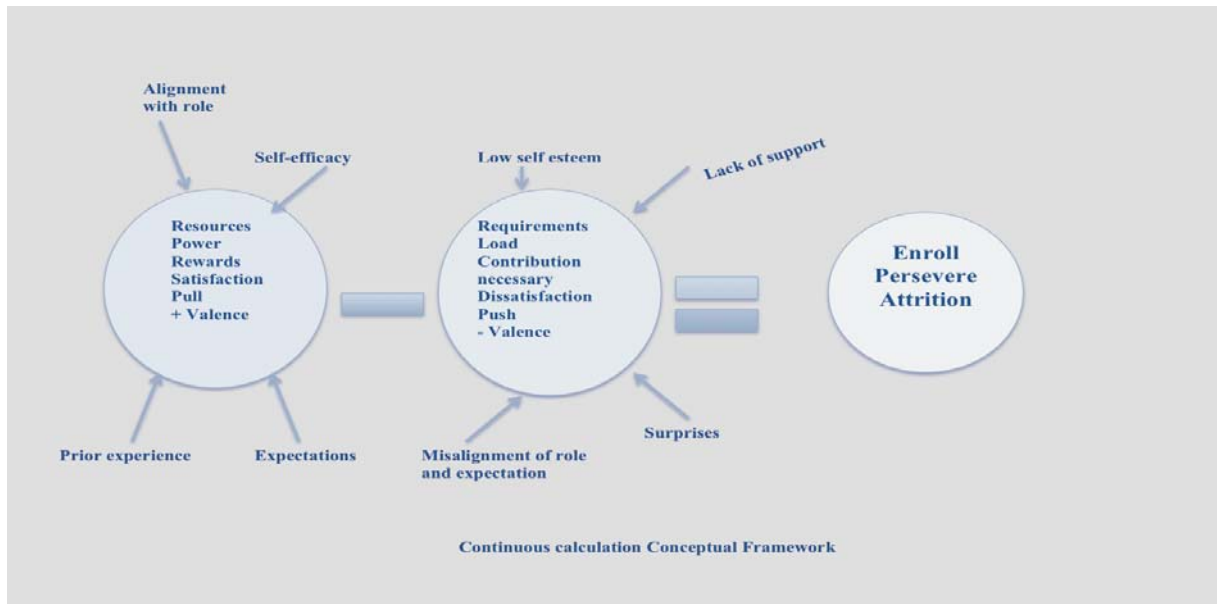
### **Discussion of the Findings**

The study was directed at establishing a measure to predict at-risk nursing school applicants. What were revealed was different but informative. The cross-sectional rather than longitudinal structure of the study unfortunately did not lend itself to identification of issues present at admission versus after attrition. Only a longitudinal study of all applicants and their progress would have been helpful in determining such issues at admission. It was difficult to determine, with the research design employed, if the feelings and status revealed by the survey were influenced by the attrition event or were present prior to the event.

As a result of this constraint, the integration of the qualitative data took prominence in identifying elements, which may have contributed to attrition. The finding that the TS group had a significantly lower margin than the NS group spoke to the question of whether the TS group had enough margin at the time of their transition to the junior year to overcome the significant change in behavior that was identified as required for a successful transition?

It should be noted at this point that any application of the perceptions of such a limited number of individuals is inherently risky. However, the degree to which they support and enhance the findings of others is pertinent. Research is both iterative and additive. This research adds a unique perspective to the discussion of attrition, despite the lack of generalizability.

**Availability of Adequate Margin.** The amount of available margin is in constant adjustment as the outside influences change and take on higher and lower importance (Chapman, 1981; Mc Clusky, 1971). This concept of continuous change as described by many authors is graphically depicted in Figure 6.1.



*Figure 6.1.* Continuous Calculation Conceptual Framework. Synthesized from Bandura (1977), McClusky (1971), Vroom (Gyurko, 2011), March & Simon (1961), Young, Lockyer, & Glogowska (2006), concepts of persistence.

The qualitative data support the findings of Young et al. (2006), who identified the push and pull concept of attrition described in detail in the literature review of this study. As the focus groups did, Young et al. identified, the "leap" into a more academic and demanding educational process when students went into their junior nursing courses. As they transitioned, researchers reported that students may find that the rigor required is more than they expected, that nursing is more academic than vocational (Cameron et al., 2011; Gardner, 2005a; Gardner, 2005b; Gilchrist & Rector, 2007; Jeffreys M., 2007; O'Donnell, 2011; Rudel, 2006; Wells, 2007). This study identified that students also felt



unprepared for what to expect and how to cope, as they progressed. The leap across the chasm between the sophomore year into the junior year at Salla University appears to be something that students reported wanting more preparation and focus.

Bandura (1977) asserts the degree of self-efficacy that an individual has determines "whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles" (p. 191). It may be reasonable to interpret the "effort" to be margin. Margin is the energy of life and all efforts require it (Mc Clusky, 1963). The amount of effort and the sustainability must have a direct relationship to the margin an individual may have available. Margin is the energy to employ certain strategies or to modify behavior. It is not the change in and of itself. Margin is about persistence and initiation of action not about knowledge (Mc Clusky, 1963; Stevenson, 1980). It is just a necessary ingredient in the formula, similar to a spark necessary to ignite a combustible.

McClusky (1973) separates power and load into two subsets each, internal and external power and internal and external load. The changes described by members of the focus groups in the junior year at Salla, were external load factors. These factors, less time on campus, different types of testing, and changes in teaching styles were all externally applied load which students reported not being prepared for. The ability to increase their power to maintain an adequate margin relied on a high power margin prior to the change or behavior modification, which would either increase power or decrease other load in response. All of the approaches to conquering the loss of margin are internal efforts.

Understanding that I am a visual person and that things become clearer to me if I can see them in physical relationships with other thoughts, led to the creation of a concept map as displayed in Figure 6.1 The Sophomore Junior Chasm. "Drawing a graphic representation of ideas and how each idea is related to a general theme" (Craig, 2009, p. 40) can be very helpful by allowing the researcher to view the major themes and the connections between themes. The use of a concept map in this analysis enabled me to see that the initial focus of the study was too broad. By narrowing the focus to the attrition occurrence at the point of transition from sophomore to junior year of college, I was better able to focus on the maintenance of the flow through the nurse pipeline.

Focus group participants first described their freshman and sophomore years as a time of integrating into the university as described by Tinto (1993). They made friends with nursing and non-nursing students, joined organizations, learned how to study for exams, and how to perform on tests. They reported earning mostly As and Bs, with a few difficult courses. The tests were based on regurgitation of memorized information. Their classes were small and included discussion. They reported living on campus with active social lives. They felt prepared for their junior year. They expressed that having passed Anatomy course was a predictor that they would do well in their nursing courses.

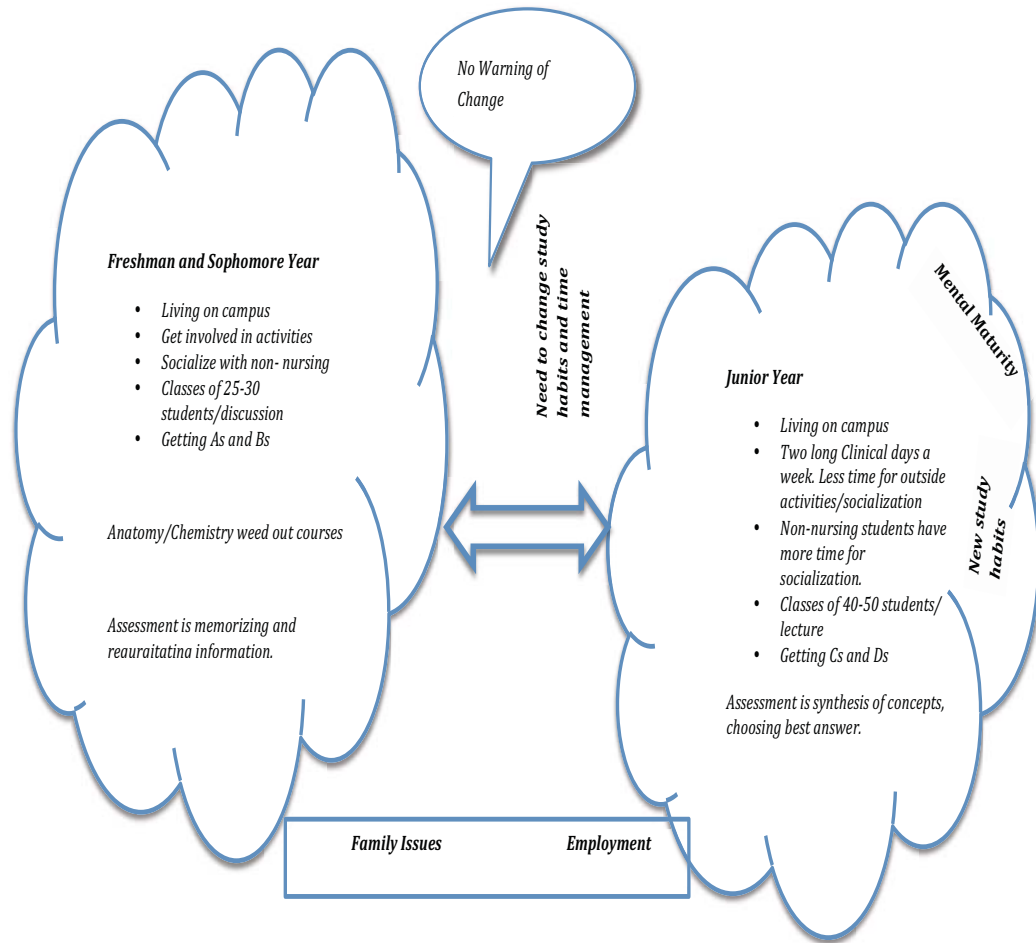


Figure 6.2. Sophomore Junior Chasm.

However, the junior year brought a significant change. They had two less days on campus due to clinical responsibilities. This required new time management skills and put stress on their non-nursing commitments and obligations. Because of their time constraints living with non-nursing students created friction. Classes now were large lectures with little discussion or opportunities for questions. The testing changed as well, now they were asked to apply their knowledge to situations presented in the exam. All of these elements put the students in a position of cognitive dissonance or disequilibrium, which required behavior modification.

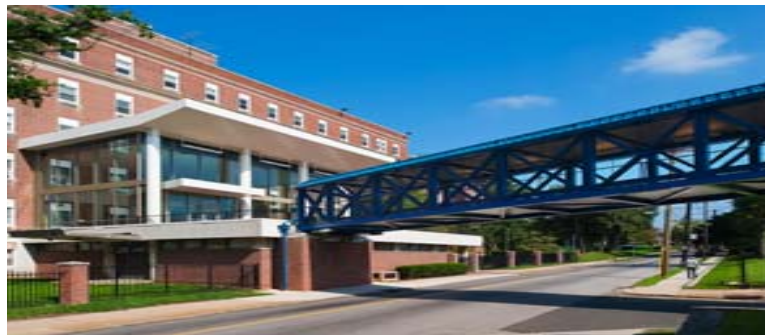
Focus group participants discussed the "shock" of the junior year in the greatest frequency. They described it as different, as not being prepared, as having to learn and think differently. All of these external influences would cause greater internal load as well, if the mechanisms or ability to change are not readily available within the individual. The balance of power to load is clearly in flux during this time period and the ability of the student to respond either enhances personal self-efficacy or decreases it and therefore increases or decreases available power.

### **Preparing for Change**

Many authors have recognized this phenomenon, especially when students move from a community college to a 4 year school. Cameron (2005) and Newton (2008) recommend a comprehensive transfer orientation for students who move from a community college to a four-year school to reduce the stress associated with changing expectations. Galbiati (2009) developed a program for at risk students entering nursing courses. The program was designed to reduce shock and to develop a coping mechanism, which would support the student's transition.

Despite the fact that not all the students in this study attended a community college, they all "crossed the bridge" from the main campus to the Health Sciences campus. Aside from the similarity of the university, an identical phenomenon appears to be influencing the success of nursing students at Salla University who transfer from the general education program of the university, located on a campus on one side of a bridge to the nursing program, across the bridge. In fact, a physical bridge exists between the school of nursing and the main campus as shown in Figure 6.3. The demographic data

demonstrated that of the survey participants, twice as many of the TS group had previously attended community college.



*Figure 6.3* The Bridge From the Main Campus.

In the current nursing educational process students in many programs cross bridges, from general education courses to nursing courses in ADN programs, from general undergraduate courses to nursing courses in BSN programs and from careers to nursing courses in accelerated degree programs. In each case the availability of adequate margin and the appropriate application of margin may predict perseverance.

Measurement of margin may be a useful tool for advising students during their transitions. At Salla University, the main campus is composed of the original liberal arts programs of the university. The nursing school is physically an add-on to the campus in recent years, requiring a physical bridge to connect the two parts of the campus. It is not uncommon that professional schools, which are part of a university, are often on isolated campuses. They are often located near the professional practice sites, such as hospitals.

What this study and Cameron (2005), Newton (2008) and Galbiati's (2009) research suggest, is that there is a phenomenon which occurs during the course of a nursing program that presents a critical decision point in the path to perseverance. It is the first semester when the student crosses the bridge from the general education program to

a professional, highly technical, and intense course of study that requires not only classes but also clinical experience and application. It is quite possible that the ability to successfully bridge this transition is related in some measure to the margin available to the student. Margin is necessary to take on new endeavors (McClusky, 1963; 1970; 1971) and to sustain the involvement (Astin, 1999) and integration (Tinto, 1997) necessary to seek assistance, change behavior patterns, recreate relationships necessary to improve learning skills, and persist in the educational program.

The identification of at-risk students is often based on cognitive testing and socioeconomic factors. Researchers (Gardner, 2005b; Glossop, 2002; Grainger & Bolan, 2006; Jeffreys, 2007; Last & Fulbrook, 2003; Munro, 1980; Papes & Lopez, 2007) suggest that there are non-cognitive factors, which also put students at-risk, such as family obligations, self-efficacy, illness, and/or social isolation. As a result it is necessary to provide assistance to all students facing the transition period in their curriculum. Young et al. (2006) assert that approaches to addressing attrition must be diverse and some should even be proactive. Rather than using certain criteria to identify students at risk, perhaps there are high risk time periods or transitions that deserve to be identified for all students to plan for and respond to successfully. Testing students for their available margin prior to these time periods may identify those at greatest risk.

### **Integration**

Spady (1970) and Durkheim (1966) point out that the act of suicide is inversely related to one's social integration. Similarly it appears that attrition is inversely related to the ability to integrate with other nursing students to "bond," socialize, and study together. Nursing education requires both the social and academic integration described

by Tinto (2003). As Gellin (2003) and Dreier et al. (2003) discuss, students need to develop their own critical thinking skills through group discussion. Studying for examinations, which include critical thinking, is enhanced when groups are formed.

Main (1979) researched McClusky's PLM theory and found "A necessary condition for successful participation in a learning experience is access to and/or activation of a margin of energy that may be available for the process of life above the subsistence level" (p. 23). Attrition prevention, like suicide prevention requires the individual to have the resources necessary to connect to the social environment, to establish friendships and relationships that integrates them into the support groups necessary for personal success. One valuable and compelling resource appears to be margin.

### **Expectations**

The lack of fit between expectation and reality can affect the relationship of power and load (Edwards, Caplan, & Harrison, 1998). What had been the perceived need for margin can grow in the face of a new reality. O'Donnell (2011) offers a model of factors leading to voluntary attrition as shown in Figure 2.2 on page 40. It reflects a major divide leading to attrition when students have unrealistic expectations. These divisions occur during the early induction period for a nursing student. In a baccalaureate program that early induction usually occurs at the beginning of the junior year.

O'Donnell's conceptual framework is enhanced by the findings of Harvey and McMurray (1997) who, using two groups, continuers (NS) and leavers (TS), asked about the students perceptions and their academic experience. They found that " 59.8 % of the continuers considered the content of their course to differ from what they had thought a

nurse would learn, this is compared with 81.3% of the leavers perceiving discrepancy" (Harvey & McMurray, 1997, p. 384). They determined that this result was statistically significant at the  $p < .03$  level. The result supports O'Donnell's (2009) pathway, that those with unrealistic expectations will need to make adjustments and will be at risk of not being able to make the necessary adjustment, resulting in voluntary attrition.

It is clearly important that students have realistic expectations of the nursing profession as well as the course of study. Without these appropriate expectations barriers and obstacles to success impede the progress of the student. These barriers can be institutionally imposed through a change in time commitments of the students, or by the change in classroom size and testing techniques. The barriers can be situational, imposed by the student's family or campus obligations. The barriers can be dispositional, as in an unwillingness to seek help or an unwillingness to give up activities, which impinge on performance. Although all the students in the study described facing the same obstacles and barriers upon entry to the junior year, clearly the ones (NS) found to have significantly higher margin were able to modify their behaviors to adjust to the change imposed by outside influences.

This study showed that the single most frequent comment in the focus groups was about the shock of the junior year. It was followed by the concept of not being prepared for the changes, which were necessary. The recognition that a change has occurred and the time necessary to rally the appropriate response, is critical to initial success in the junior year. Such effort will likely be affected by the margin available to the student. Any early warning provided by those related to the school of nursing, may permit an earlier response on the part of the student. The development of a mechanism



that suggests to students that they explore their power load relationships in preparation for the coming challenge of the professional years of the program, may permit an alteration of relationships to accommodate the need for additional margin.

## **Conclusions**

This study has identified insights into the factors that may contribute to nursing student attrition. It has revealed differences in the characteristics and actions of students who persevered and those who attritioned. It has resulted in a potential phenomenological pathway which students report traversing during their quest to be a baccalaureate nursing school graduate.

The integration of the qualitative data with the quantitative data and the literature suggest that margin may play a part in students' ability to respond to the issues that arise as they move into the professional year of their nursing program. The junior or first professional year seems to present unique obstacles and requires the effort or margin necessary to make the successful adjustments.

These findings required a literature review update that was beyond the initial review used to design the study. Research being an iterative process, it requires great flexibility and willingness to explore not only the path on the map but the side roads that arise during the journey. Argyris, Putman, and Smith (1985) contend that the research process creates "knowledge that is useful, valid, descriptive of the world, and informative of how we might change it" (p. x). While Herr and Anderson (2005) remind researchers that they must continue to shift and move as the path spirals in front of them, "cycles of research illuminate the issues being studied, (and) new literature will be incorporated as part of this growing understanding" (p. 84) .

The qualitative analysis clarified the importance of the quantitative findings. The selection of the mixed methods approach, according to Creswell and Plano Clark (2011) is predicated on the ability of each method to contribute to the clarity of the findings. They describe the interpretation of results as "stepping back from the detailed results and advancing their larger meaning in view of the research problems, questions in (the) study, the existing literature, and perhaps personal experience" (p. 209). They suggest that the researcher look across the quantitative results and the qualitative findings and determine how the results inform the research questions.

This study took me on an informative side road as I examined the qualitative data. To navigate between the planned study and the extended research required drawing a map of the concepts expressed by the participants. It was a map of the phenomenon they had experienced in their transition from freshman and sophomore year to their junior year. I used that concept map and the literature to help understand the data.

The research questions in this study were rooted in an initial belief that students could be screened during the admission process for characteristics that may predict they have a high probability of attrition prior to graduation. This attrition was shown to contribute to a decline in the flow of new nurses from the collegiate pipeline. Due to a confluence of factors such as the aging of the baby boom generation, the increase in chronic health issues, and the growing retirement of nurses, the flow of new nurses is essential to the proper functioning of the health care system.

The structure of the research was not conducive to confirming or challenging my hypothesis that an attrition construct could be established which would be useful in screening applicants for admission. What the study did show was, that a mixed

methodology is necessary to further investigate the initial hypothesis, because it provides additional perspectives and information. The findings of the study do point researchers in another expanded direction for further investigating attrition. The results reveal a point in the life of a student where attrition is a high risk and where intervention may be appropriate. It appears to have identified a phenomenon experienced by the students in the study, which occurs at the point of transition into the formal nursing portion of their education. The literature suggests that this phenomenon occurs in many nursing educational programs.

### **Recommendations for Future Research**

This study was conducted on one campus, with a very small number of participants and the issue is too important to believe that any conclusive decisions can be drawn from this study. In the future, this study or one like it should be modified to be more longitudinal. The scales should be given to students, pre-admission, on enrollments, and each year of enrollment.

Students who attrition from the program should be interviewed either individually or in groups, at the time of attrition, to obtain personal perceptions of the barriers they faced and their attempts at coping with the barriers. In addition, a representative group of persevering students should be interviewed each semester to determine their obstacles and strategies for success. The two sets of data should be compared over time to validate the sophomore-junior chasm phenomena.

The study should be conducted at a number of nursing schools and at different educational path such as ADN and accelerated degree programs that have auxiliary programs for attritional students. At the same time research should be conducted to

attempt to identify programs that have implemented a remedial approach to the described chasm, to determine their success in extending persistence. Studies such as Galbiati's (2009) demonstrate a potential model for a remedial approach. The characteristics of low GPAs and a history of failure as noted by Newton and Moore (2009) were not explored in this study, and none of the qualitative group participants were community college transfers but both points raise suggestions for inclusion in future studies.

### **Recommendations for Practice**

As described in Chapter II, my worldview is based on Argyris' and Schon's (1974) theory of positive and negative feedback modifying human behavior. The negative feedback received by students who fail or do not achieve at their previous level, when entering a nursing program, will either motivate those who have the self efficacy and power to modify their behavior or will spiral others into disengagement and the limited support seeking (O'Donnell, 2011)

My worldview also describes my belief that if a student can modify their response to certain stimuli, they may be able to complete their journeys. It is our role as educators to provide students with the necessary warnings and tools to achieve as much success as they are capable to achieve. Social justice calls for us to prepare our students for the pressure points in their journey and to be available to assist the student.

The profession of nursing is a caring and supportive occupation. It is based on evaluating, planning, and modifying those actions, which will help the patient to adjust to their disequilibrium. We understand that patients must be ready to learn and must have the education presented in the way a patient can receive it. We, as nurse educators, should see our students as our patients. They are traveling a path that is new to them and we

need to provide the necessary support for them to end their journeys successfully. We have an obligation to those who we accept into our programs and to those they hope to serve in the future.

Both of the focus groups agreed that students should be made more proactively aware of the changes that occur in their junior year. They singled out the reduction in available time and the change in the way knowledge is used and tested. Although much of this may seem self-evident to those of us who teach, it is clearly not so self evident to students. My eyes were opened not through the collection of what I would have called the "hard data," the quantitative survey but by the "soft data," the listening to students describe their journeys. Hearing them discuss how they would like to change that experience for others.

The paradigm for my role as a teacher has grown as a result of this research; I can see more clearly that knowledge is hard facts and listening. Not simple listening passively but informed active listening to create understanding. For me, knowledge and leadership has become leading through listening and providing space for listening.

What became apparent was that fellow students could become the best support that any student can receive. Astin (1999), Tinto (1993), and Rudel (2006) stress the importance of peer relationships in supporting students during stressful times. They are of the same generation, speak the same language, and understand the issues much more intimately than any professor. The educator's role in helping students with transitions appears to be as a forward scout warning of what is to come.

Possibly the best way to facilitate the students understanding of the impact of transitioning into the formal nursing program is to have the junior and senior students

present the issues. The faculty in conjunction with juniors and seniors can develop a way for peers to present the information about the coming changes, and how best to overcome and deal with the new demands. Study participants stressed reliance on forming nursing student study groups. The faculty can facilitate and encourage these types of groups and can advise students to seek supportive colleagues.

Encouragement of a peer program, during the pre junior year summer session, to identify potential issues and provide suggestions for coping, would be a first step. Faculty should encourage the development of these summer projects and assist more senior students in their development. Based on the findings of this study, one would anticipate that such a program should address power load margin, time management, and test taking skills. I would envision this type of program as being a casual dinner and social setting in which the rising seniors share their personal experiences and how they modified their behavior to meet the challenges they faced during their transition year. Hopefully relationships could be established during this type of session that would carry into the following year.

In addition this study points out the need for understanding Margin-in-Life and using it to monitor the reserves available to students who are about to or are undergoing significant new demands. Identifying students with low margin should be a component of identifying students at risk. These students should be highly encouraged to participate in the earlier described support groups. Analysis of the subscales established by Stevenson (1982) should assist counselors and advisors in identifying opportunities for margin improvement.

## **Reflections**

Fullan's (2001) admonishes that leadership must have a moral purpose. It must make a difference for others. The educational leadership program at Rowan University has made a difference for me and it has made me capable of making a difference for others. It has given me the power of the written, not just spoken word and the capacity for truly listening. It has led me to an understanding of how professionals communicate with each other. It has given me the tools to communicate in a valid and reliable way. Communication will be vitally important if I am to make a positive difference in the lives of student nurses.

I am planning to present my dissertation findings to the summer faculty-meeting day at Salla University. I will ask for volunteers to help me identify rising seniors who might be interested in developing such a support program, as well as faculty members interested in working with me and those students to produce such a program in time for the rising juniors in 2013. This will be my first opportunity as a fully qualified member of the community of scholars to share my findings and recommendations.

My leadership will be grounded in my findings. My insights will be grounded in the process and the process was grounded in scholarship. I have identified that leadership is not inventing a new way but identifying how it is and where it needs to go. Leadership is defining the path between the two.

Through out this dissertation process Untermeyer's (1919) words have guided me. "From compromise and things half done, keep me with a stern and stubborn pride, and when at last the fight is won, keep me still unsatisfied." Just as each project such as a

dissertation comes to an end, we consider the goals for future research, and we remain unsatisfied.

As I enter the community of scholars as a full and participating member, I am humbled by the responsibility to avoid compromise and things half done. I will for the first time be my own keeper. I will set my own expectations and be my own judge of how well the job was done.

As a child of the 1960s, I have been influenced by the words of Bob Dylan in his song *Forever Young*:

May your hands always be busy  
May your feet always be swift  
May you have a strong foundation  
When the winds of changes shift  
May your heart always be joyful  
And may your song always be sung  
May you stay forever young  
(Dylan, 1974).

I know now I will have a strong foundation when the winds of changes shift.



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## **APPENDIX A**

Consent Form and Survey

**LaSalle University**

**Consent Form for Participation in Research**

**Title of Investigation:** Non-Cognitive Factors in the Attrition of Nursing Students

**Investigator:** Letty Piper, RN, MSN

The **purpose of this research** is: to identify those emotional and psychological factor which may contribute to a student dropping out of nursing school. This research is intended for only those over 18 years of age.

Those who participate in this research will be **asked to do the following things:** Complete a 91 item questionnaire which should take no longer than 30 minutes of your time.

This research **may result in the following discomforts:** You having some unpleasant memories of past events. You may withdraw from the study at any time without penalty. The university student counseling service in McShane Hall is available for counseling assistance if you feel it is necessary. Appointments can be made by calling 215-951-1355.

Participation in this research **may involve the following benefits:** It may assist schools of nursing in developing better screening techniques for applicants thereby increasing the graduation rate of student nurses. You will be entered into a lottery for a gift card.

If you are willing to participate in a focus group follow-up to this questionnaire please signify by entering your email address here: \_\_\_\_\_

The focus group will explore , in a small group , your experiences and perceptions of your time as a nursing student. You will need to be available for a 45 minute period to be scheduled on campus . Your responses will be recorded and transcribed. The transcription will not carry personal identifying information. The transcription will be kept with the other materials as described below.

Participation in this research may **involve the following risks:** There are no major identified risks to this research except the discomfort noted above.

All materials associated with this research will be held in **confidence** ( not shared in a way that would identify you specifically) for a period of three years following the study. The materials will then be destroyed in a confidential manner by shredding. If you have **any questions or concerns regarding this research**, please contact

LettyPiper, Adjunct Faculty, Graduate School of Nursing and Health Studies, 107 Wilshire Blvd. Woolwich, NJ 08085. Telephone 856-371-2234 ,[piper@lasalle.edu](mailto:piper@lasalle.edu). or Dr. Burton Sisco at Rowan University Educational Hall #3030 Glassboro NJ, Telephone 856-256-4500 #3717; [sisco@rowan.edu](mailto:sisco@rowan.edu) .You may also contact the Chairperson of the LaSalle IRB if you have any questions about your rights as a participant. Randy Fingerhut, Ph.D, Chair , Institutional Review Board, La Salle Univ. , Department of Psychology 1900 W. Olney Ave. , Philadelphia, Pa. 19141 (215 951-1284 [Fingerhut@lasalle.edu](mailto:Fingerhut@lasalle.edu) .

OR

*If you have any questions about your rights as a research subject, you may contact the Associate Provost for Research at: Rowan University Institutional Review Board for the Protection of Human Subjects, Office of Research, 201 Mullica Hill Road, Glassboro, NJ 08028-1701. Telephone 856-256-5150*

I have read the above description of a research project.

Anything I did not understand was explained to me

by:\_\_\_\_\_

And, I had all of my questions answered to my satisfaction. I agree to participate in this research.

Participant Signature:\_\_\_\_\_Date:

Investigator Signature:\_\_\_\_\_Date:

The Institutional Review Board of La Salle University and Rowan University have reviewed and approved this study on the following dates:

\_\_\_\_12/22/2011\_\_\_\_\_

Student nurse \_\_\_\_\_ Transfer from nursing \_\_\_\_\_

Date: \_\_\_\_\_

Thank You for agreeing to participate in this research about what contributes to the loss of nursing students prior to graduation. There are four sections to this questionnaire. Please read the instructions prior to each section and complete the entire section. If you would like to withdraw from this study at any time please notify the person administering the questionnaire, who will retrieve the questionnaire from you.

**Section One: Measures of Self-Efficacy**

**Please rate what best describes you on the following items by placing an X in the appropriate column.**

	Not True at all	Hardly True	Moderately True	Exactly True
I will be able to achieve most of the goals that I have set for myself.				
When facing difficult tasks, I am certain that I will accomplish them.				
In general, I think that I can obtain outcomes that are important to me.				
I believe I can succeed at most any endeavor to which I set my mind.				
I will be able to successfully overcome many challenges.				
I am confident that I can perform effectively on many different tasks.				
Compared to other people, You can do most tasks very well.				
Even when things are tough, I can perform quite well.				

(Chen, Gully, & Eden, 2001)

### Section Two: Nursing Self-Description

Please rate your degree of agreement with the following statements by placing an X in the appropriate column. Think about the items in relation to your work and time as a student nurse.

	Definitely less than most nurses	Somewhat less than most nurses	About the same as most nurses	Somewhat more than most nurses	Definitely more than most nurses	Far more than most nurses	To a degree rarely equaled by most nurses
<b>1. Your drive, as expressed in your work.</b>							
Think of the energy with which you conduct your work activities. Also consider the speed with which you work and the amount of work you get done.							
<b>2. Your reliability and dependability.</b>							
Consider your willingness to uphold the standards of the nursing profession, to report findings honestly and to perform reliably the services you have agreed to render.							
<b>3. The degree to which you remain objective and impersonal in evaluating and analyzing ideas, individual abilities and performances no matter how personally you may be involved.</b>							
<b>4. Your ability to change, to respond to new and changing situations, and to remain flexible in your thinking and actions.</b>							
Consider the degree to which you remain open to new ideas, procedures and techniques and utilize them, and the degree to which you make changes in your work and approaches to it.							
<b>5. Your ability to grasp ideas fully and use them effectively in solving problems.</b>							
Consider how well and how quickly you grasp the essentials of the problem, see alternative solutions and select the most appropriate solution.							

	Definitely less than most nurses	Somewhat less than most nurses	About the same as most nurses	Somewhat more than most nurses	Definitely more than most nurses	Far more than most nurses	To a degree rarely equaled by most nurses
<p><b>6. Your ability to inform others, to teach, to present old and new ideas, to explain and illustrate complexities in a clear, orderly way.</b></p> <p>Think of your readiness and skill in adapting materials, demonstrations and explanations to the needs of others. Consider your ability to hold their attention while presenting ideas.</p>							

<p><b>7. Your ability to stay with a problem persistently.</b></p> <p>Consider your ability to work hard over a long period, to finish a job once started and never give up unless it is clearly best to do so.</p>							
<p><b>8. Your desire to adapt yourself to the needs and wishes of others.</b></p> <p>Consider to what degree you can and do put aside your own ideas and feelings in the situation and accept those of other people, regardless of your views. Consider your wish to be cooperative to smooth over disagreements and to get the job done with as little friction as possible.</p>							

<p><b>9. Your independence of thought and action based on your own ideas, judgments, and goals.</b></p> <p>Consider your determination to set a course of action and to move toward a goal without prompting, pressure, guidance, or authority from anyone but yourself.</p>							
--	--	--	--	--	--	--	--

	Definitely less than most nurses	Somewhat less than most nurses	About the same as most nurses	Somewhat more than most nurses	Definitely more than most nurses	Far more than most nurses	To a degree rarely equated by most nurses
<p><b>10. Your resourcefulness in thinking and acting.</b> Consider your capacity to make use of all facilities and means, obvious or not, which are potentially available for the performance of your work and learning in nursing. Rate your resourcefulness in obtaining the material.</p>							
<p><b>11. Your ability to discriminate between the fruitful and the barren in your work.</b> Consider your appreciation of what is needed and not needed, what is practical or impractical and what is primary or secondary in your work.</p>							
<p><b>12. Your ability as a leader to guide and direct the activities of others.</b> Consider your ability to get others to follow your advice and direction, to accept your opinion. Consider your persuasiveness, firmness and forcefulness.</p>							
<p><b>13. How sociable you are and how easily you get along with many different kinds of people.</b> Consider how much you really desire the company of others as opposed to being by yourself, to what degree you prefer work activities that you perform with others to activities that are generally done alone.</p>							



	Definitely less than most nurses	Somewhat less than most nurses	About the same as most nurses	Somewhat more than most nurses	Definitely more than most nurses	Far more than most nurses	To a degree rarely equaled by most nurses
<b>14. Your overall interest in and concern for other people</b>							
Consider how warmly you feel and act toward others, how considerate and thoughtful you are of their feelings, and how much you desire to help others.							
<b>15. How sensitive you are to the reactions and motives of others</b>							
Consider how well you understand people and why they do what they do. Think of your awareness and perceptiveness of what others feel and wish, your ease in dealing with people, and your ability to respond knowledgeably and effectively in helping others to solve their problems.							

<b>16. Rate your desire to master the known body of scientific or technical principles and theories pertaining to nursing.</b>							
Consider the degree to which you seem eager to grasp any and all such principles rather than merely to know what you can use on a specific job or problem.							
<b>17. Your desire to add to the available insights in nursing through experimental studies.</b>							
Think of the intensity of your desire to achieve new in-sites for their own sake and for the sake of people generally, and of the degree to which you draw major satisfaction from search for such insights.							
	Definitely less than most nurses	Somewhat less than most nurses	About the same as most nurses	Somewhat more than most nurses	Definitely more than most nurses	Far more than most nurses	To a degree rarely equaled by most nurses

<p><b>18. Your intuitiveness, your ability to sense and grasp the significance of thoughts, situations, etc. without being fully aware of it.</b></p>							
<p>Consider your power and tendency to find meaning in structure, situations, facts, relationships and ideas through a feeling inside yourself that meaning and of its character before you can explain why you sense it.</p>							
<p><b>19. Your power to create, nurture, and implement a new idea in nursing.</b></p>							
<p>Think of this new idea as occurring in any area of nursing such as patient care, community health action, teaching administration, supervision, research, etc. Consider the uniqueness of the idea and the number of people it might affect.</p>							

(Dagenais & Meleis, 1982)

**Section Three: Demographics**

1. Age at last birthday, in years \_\_\_\_\_.
2. Sex: Male \_\_\_\_\_ Female \_\_\_\_\_
3. Site of last schooling prior to LaSalle: High school \_\_\_\_\_ Community College \_\_\_\_\_ Four year college \_\_\_\_\_
4. Marital status: Married \_\_\_\_\_ Divorced: \_\_\_\_\_ Single: \_\_\_\_\_ Separated: \_\_\_\_\_ Widowed: \_\_\_\_\_
5. Children: Number living with you \_\_\_\_\_ Number living away \_\_\_\_\_ No Children \_\_\_\_\_
6. Hours employed weekly: None \_\_\_\_\_ less than 16 hours weekly \_\_\_\_\_ more than 16 hours weekly \_\_\_\_\_

**Section Four: Margin in Life Scale**

The scale on the following pages was developed by a team of nurse-researchers at the Ohio State University, Center for Nursing Research. The purpose of the scale is to find out how people view their present life. The scale presents common experiences of adult life and asks you to rate each of them in *three* ways.

Across from each of the 58 items are four columns headed by the words:

**IMPORTANCE OF THE ITEM    LOAD    POWER    ITEM NOT APPLICABLE**

In the IMPORTANCE of ITEM column you will find a row of numbers from 1 to 10. The object is for you to circle any number from 1 to 10 to indicate the relative IMPORTANCE of that item in your life. The next two columns ask you to rate the LOAD of each item on a scale from 1 to 5 and the POWER of each item on a scale from 1 to 5. LOAD refers to the amount of burden or responsibility each item puts upon you. POWER refers to the joy, pleasure, strength, or richness added to your life by each item. It is necessary to circle both a LOAD and a POWER for each item to signify the balance which exists in adult life between responsibilities and satisfaction. If an item has no relevance in your life--- for example, if we ask you about a spouse and you have never had one, then place a mark in the column labeled ITEM NOT APPLICABLE.

The following example shows you how someone might respond to one item:

GENERALLY SPEAKING...

**Item**

**not**

	<b>Importance of item</b>	<b>Load</b>	<b>Power</b>	<b>Applicable</b>
My eyesight is:	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	( )

In this example, you notice that eyesight got a high IMPORTANCE. The person gave it a 3 for medium LOAD perhaps the person was burdened by having to wear glasses. It got a relatively high POWER score of 4 (eyesight was a significant resource to this person).

Please read the items carefully and use your best judgment in making each response. There are no right or wrong answers. Each person is unique.

Generally Speaking...	IMPORTANCE OF ITEM (Circle one)	LOAD (Circle one)	POWER (Circle one)	ITEM NOT APPLICABLE
1. My mental health is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
2. My eyesight is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
3. Living with my spouse is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
4. Our children are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
5. Frequent prayer is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
6. My hearing is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
7. My physical health is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
8. Reading religious material is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
9. My sense of smell is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
10. I would rate my present life as	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
11. Breathing is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
12. My sense of taste is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
13. Religious faith is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
14. My ability to concentrate is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
15. Belief in God (A higher Power) is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
16. My blood circulation is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
17. My appetite is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	

Generally Speaking...	IMPORTANCE OF ITEM (Circle one)	LOAD (Circle one)	POWER (Circle one)	ITEM NOT APPLICABLE
18. The extent to which my family members cooperate with each other is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
19. Having goals in life is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
20. Being independent is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
21. My children's attitude toward me is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
22. My sexual abilities are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
23. Making decisions is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
24. My hands and arms are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
25. Being married is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
26. My type of employment is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
27. Being responsible is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
28. My digestion is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
29. My back is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
30. Belief in a religion is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
31. My family's way of coping with problems is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
32. My feet and legs are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
33. Self reliance is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
34. Relating with my co-workers is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	

Generally Speaking...	IMPORTANCE OF ITEM (Circle one)	LOAD (Circle one)	POWER (Circle one)	ITEM NOT APPLICABLE
35. The way my children and I get along is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
36. Having a few close friends is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
37. Controlling my temper is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
38. A high standard of morality is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
39. My coordination is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
40. Consideration of others is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
41. The way my children act to each other is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
42. My body is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
43. The way my spouse handles responsibility is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
44. Mobility is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
45. My children's progress in school is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
46. The need for religion is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
47. The people I've met at church are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
48. My attitude toward my family is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
49. Membership in a religion is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
50. My muscles are	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
51. Getting along with people is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
52. A spiritual way of life is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	



Generally Speaking...	IMPORTANCE OF ITEM (Circle one)	LOAD (Circle one)	POWER (Circle one)	ITEM NOT APPLICABLE
53. Rest is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
54. Frequently finding it necessary to stand for what I believe in is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
55. Self confidence is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
56. Participating in religious practices is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
57. Manual dexterity is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	
58. My concern for my family is	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5	1 2 3 4 5	

(Stevenson, 1982)

Thank you very much for your participation in this research project.



## **APPENDIX B**

### Focus Group Guide

1. Introduction of Participants
2. Review of the purpose of the study
3. Discussion and distribution of the concept maps.
4. Aside from academics, what did you find were the non-academic barriers that you faced when you started your nursing courses?
5. Were there ways in which you felt unprepared for your nursing courses ?
6. What did you use to overcome these barriers ?
7. Did your attempts succeed ?
8. How could we help other students to be prepared for the nursing program?

**APPENDIX C**

La Salle Institutional Review Board Approval Letter

**LA SALLE UNIVERSITY  
INSTITUTIONAL REVIEW BOARD  
REVIEW OF RESEARCH PROPOSAL FOR THE PROTECTION OF HUMAN SUBJECTS**

Name of Investigator: **Letty Piper** Proposal # 11-11-116 rev. 2  
Address of Investigator: **Nursing and Health Sciences**  
Title of Research Project: **No Student Left Behind: Identification of Non-Cognitive Screening Factors for Student Nurses**


This is to certify that the above referenced application, which does propose activities involving human subjects, was reviewed in accordance with La Salle University Institutional Review Board (IRB) guidelines.

<b>Type of review</b>	Exempt <b>Expedited X</b> Full
<b>Action</b>	<b>Revisions approved X</b> Approved contingent on revisions Deferred for substantive changes Disapproved

IRB Comments/Recommendations to Investigator:

**The investigator will please note that if any part of the research procedure is changed during the study other than as initially planned, a copy of the change must be submitted to the IRB.**

12/22/11  
Date

  
Signature, Chairperson, IRB

\_\_\_\_\_  
Date Signature, Faculty Sponsor (if applicable)

Original 11/17/11, Revised 12/7/11, 12/22/11

**APPENDIX D**

Rowan Institutional Review Board Approval Letter



December 14, 2011

Letty Piper  
107 Wilshire Road  
Woolwich, NJ 08085

Dear Letty Piper:

In accordance with the University's IRB policies and 45 CFR 46, the Federal Policy for the Protection of Human Subjects, I am pleased to inform you that the Rowan University Institutional Review Board (IRB) has approved your project:

IRB application number: 2012-120

Project Title: Non Cognitive Factors in the Attrition of Nursing Students

In accordance with federal law, this approval is effective for **one calendar year** from the date of this letter. If your research project extends beyond that date or if you need to make significant modifications to your study, you must notify the IRB immediately. Please reference the above-cited IRB application number in any future communications with our office regarding this research.

Please retain copies of consent forms for this research for three years after completion of the research.

If, during your research, you encounter any unanticipated problems involving risks to subjects, you must report this immediately to Dr. Harriet Hartman (hartman@rowan.edu or call 856-256-4500, ext. 3787) or contact Dr. Shreekanth Mandayam, Associate Provost for Research (shreek@rowan.edu or call 856-256-5150).

If you have any administrative questions, please contact Karen Heiser (heiser@rowan.edu or 856-256-5150).

Sincerely,

A handwritten signature in cursive script that reads "Harriet Hartman".

Harriet Hartman, Ph.D.  
Chair, Rowan University IRB

c: Burton Sisco, Educational Services, Education Hall

Office of Research  
Bole Hall  
201 Mullica Hill Road  
Glassboro, NJ 08028-1701

856-256-5150  
856-256-4425 fax

## **APPENDIX E**

### **Rules and Procedure for Logical Analysis of Written Data**

### Rules and Procedure for Logical Analysis of Written Data (Sisco, 1981)

The following decisions were made regarding what was to be the unit of data analysis:

1. A phrase or clause will be the basic unit of analysis.
2. Verbiage not considered essential to the phrase or clause will be edited out-e.g. , articles of speech, possessives, some adjectives, elaborative examples.
3. Where there is a violation of convention syntax in the data, it will be corrected.
4. Where there are compound thoughts in a phrase or clause, each unit of thought will be represented separately (unless one was an elaboration of the other).
5. Where information seems important to add to the statement in order to clarify it in a context, this information will be added to the unit by using parentheses.
6. The following decisions were made regarding the procedures for categorization of content units:
  - a. After several units are listed on a sheet of paper, they will be scanned in order to determine differences and similarities.
  - b. From this tentative analysis, local categories will be derived for the units.
  - c. When additional units of data suggest further categories, they will be added to the classification scheme.



- d. After all the units from a particular question response are thus classified, the categories are further reduced to broader clusters (collapsing of categories).
- e. Frequencies of units in each cluster category are determined and further analysis steps are undertaken, depending on the nature of the data—i.e., ranking of categories with verbatim quotes which represent the range of ideas or opinions.