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A Comparative Study of the Perceived Needs and Learning Styles of Generic Nursing Students and Registered Nurse Students in Selected Baccalaureate Programs

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LOYOLA UNIVERSITY CHICAGO

A COMPARATIVE STUDY OF THE
PERCEIVED NEEDS AND LEARNING STYLES
OF GENERIC NURSING STUDENTS
AND REGISTERED NURSE STUDENTS
IN SELECTED BACCALAUREATE PROGRAMS

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE SCHOOL OF EDUCATION
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

BY

PAMELA A. BACHMEYER

CHICAGO, ILLINOIS

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CHAPTER 1

INTRODUCTION

In the past, nursing education was primarily directed towards training young women in programs connected to hospitals. The nursing students served as inexpensive labor in the hospitals as they completed their apprenticeships, frequently working twelve hour days. Today, in contrast, nursing education is moving from hospitals to undergraduate institutions, a development that has been especially significant during the past twenty five years (Seidl, 1990).

The concept of the baccalaureate degree as the minimal entry into nursing practice was endorsed as early as 1923 in the landmark study entitled the Goldmark Report. The concept of a baccalaureate in nursing was again proposed in 1965 when the American Nurses Association stated that nurses should be trained at the baccalaureate level (Hood, 1985). The issue of baccalaureate prepared nurses again resurfaced in the 1980s, prompted by higher acuity levels among clients and shorter hospital stays. The need for baccalaureate education was reaffirmed by the National Commission on Nursing in 1983. In addition, the Illinois Nurse Practice Act was scheduled for Sunset Review in 1987. A governing body evaluates each licensing program to assess whether any legal changes are needed in regards to changes in expanded practice; otherwise

the respective licenses may expire. Amendments to the licensing acts may be instituted at this time related to entry into practice.

There has been continued disagreement about the need for a baccalaureate nursing degree, brought about in part by the nursing shortage. In response, the number of associate degree programs has increased. These programs have been particularly attractive to the older student desiring a quicker option towards obtaining a nursing license. Many of the proponents of associate degree programs are against the baccalaureate as a minimal requirement, even though previous graduates will be grandfathered into the Professional Nurse category when the baccalaureate nursing degree become the minimal entry into nursing practice.

In one study, a random survey of 800 registered nurses was conducted in 1985 regarding nurses' attitudes about this issue. Fifty four per cent of the participants supported the baccalaureate requirement, while twenty three per cent did not support the change. Half of the undecided group was concerned about the title changes (registered professional nurse versus registered associate nurse) and geographical difficulties in obtaining a baccalaureate in nursing (Velsor-Friedrich, 1986). In addition, there were formal groups opposed to nurses receiving baccalaureates. Many hospital administrators only viewed the baccalaureate as a way of obtaining salary increases. Some of the medical associations fear the

baccalaureate as it signifies more autonomy for nurses. Junior colleges, offering associate degrees in nursing, were fearful of closure.

Amidst all of the conflict, the Illinois Nurses Association proposed in 1987 to have the Nurse Practice Act changed to require the baccalaureate degree in nursing as the minimum requirement for nursing licensure by 1995 (Velsor-Friedrich, 1990). The proposal did not lead to agreement among all concerned. Therefore, the negotiating team could not establish a compromise and the educational requirement was deleted from the Act. The Illinois Nurse Practice Act of 1987 was passed on November 6, 1987 but it may be amended at any time. The division among nurses as to the need for a baccalaureate degree has had a profound influence on a nurse's motivation and readiness to learn. A returning student may need increased self direction if she/he is to continue in the face of opposition of many of her peers.

This controversy has only increased the difficulty in finding qualified nursing students and retaining them. Even when admissions between 1983 and 1986 to associate and baccalaureate programs declined 30%, there was minimal concern because the number of nursing graduates was 82,075, the highest number in history (Donley and Flaherty, 1989). However, examination of enrollments in nursing programs has demonstrated a decreasing number of first-year students.

Since 1983, students in all RN programs have decreased more than 25% (Landers, 1988).

Recruitment and retention of students from various cultural groups is also of paramount importance to the profession. The 1980 census indicated that more than 20% of the United States population is composed of non-Caucasian groups: 11.5% Black, 6.4% Hispanics and the remaining 2.4% are Asian and Native Americans (Crawford and Olinger, 1988). By the year 2020, Black and Hispanics will encompass 25-30% of the American population (McNairy, 1987). On the other hand, ethnic groups are under-represented in the health professions as demonstrated by a 9.2% total in nursing (Crawford and Olinger, 1988). These statistics become increasingly important as the number of people from various ethnic groups steadily increase in the United States. Thus, the nursing profession must increasingly meet the needs of clients from diverse cultural backgrounds.

The need for a baccalaureate in nursing is further compounded by the increase in the number of non-traditional students with a wide range of backgrounds, preparation and ability. In the past, traditional students have been between the ages of 17 and 22 and enrolled as full time students. Non-traditional students, in contrast, tend to be twenty five years or older with education ranging from no high school diploma to some college credit (Seidl, 1990). Other common barriers to enrollment include lack of time, no perceived need

for further education, and/or family and occupational conflicts.

In 1977, the Joint Education Committee in Illinois surveyed adults to obtain a demographic profile of the adult learner. Nearly 40% of the Illinois adult students were between the ages of 26 and 35. Almost 80% were employed, with 65% working full-time. At the same time, approximately one third (37.2%) of the adults in the sample were enrolled in either credit or non-credit courses, and 23.2% were planning to enroll in a course within the next year. More than 50% of the students rated the counseling services of their respective institutions as inadequate. These students preferred evening classes, conferences and workshops, individual study, weekend classes, educational television, correspondence, and computer assisted instruction.

One study focused on the differences between traditional and non-traditional students at a midwestern public university (Seidl, 1990). Students were given the Preferred Learning Style Index (Stone, 1974) and the Scale of Judgmental Ability in Nursing. These tools examined learning activities and professional judgment related to legal/ethical issues, problem solving, communication and leadership.

Significant differences were found between the groups. None of the traditional students had children, whereas forty three per cent of the non-traditional students did. Traditional students were more likely to use parents as a

source of funds. Non-traditional students were characterized more as discovery learners than receptive learners. The non-traditional students, in general, have acquired experiences and skills that facilitated one's learning. The ability to make professional judgments was significantly related to learning style scores with high judgmental ability associated with a discovery style of learning. Lastly, it was indicated that marital status should not be considered a negative factor, as it frequently appears to facilitate professional judgment.

Given these findings, one group of non-traditional students, the returning RN student, raises the question of whether the generic curriculum is the most appropriate for their needs. Thus, for example, differences in work hours, income, and marital status between RN and generic baccalaureate students may contribute to status inconsistency for RN students, which in turn may create stress for these students in their programs. In addition, registered nurse students frequently take an average of 11.2 years to complete their requirements for a baccalaureate degree (Baj, 1985). Therefore, supportive interventions are necessary to assist these students in obtaining this minimal entry into practice so as to make them more professionally competitive with other professionals.

These issues indicate that perhaps a different type of education, based on the theories of Knowles, Rogers, and

Dreyfus, may be more appropriate for the adult learner. Knowles' (1973) concept of learning is based on direct involvement of the learner in analyzing his/her experiences and demonstrating learning techniques (Knowles, 1973). Rogers (1951) has indicated that learning may be facilitated only if he/she perceives learning as being involved in the function of his/her self. Thus, the personal relationship between the facilitator and the learner is critical. The facilitator must possess genuineness, caring, empathetic understanding, and accurate listening skills. These learning related qualities may be particularly important to the RN baccalaureate students because of heterogeneity in terms of background, training and experience.

Another developmental model, developed by Dreyfus, was introduced into nursing by Benner (1980). This model suggests that in acquiring a skill, the student passes through five levels of proficiency: novice, advanced beginner, competent, proficient, and expert. In moving through the stages, the student uses his/her past concrete experiences in problem solving strategies. The student also views a problem as a whole entity in which some parts are more relevant than others. Such findings may be potentially important in trying to understand and devise appropriate curricular strategies for the adult learner.

Recognizing the problem of a nursing shortage, institutions of higher education are in the process of

studying the barriers and factors related to effective recruitment and retention. In one study, baccalaureate nursing students completed a questionnaire related to barriers to retention (Allen, Nunley and Scott-Warren, 1988). Black and Caucasian faculty members at the same university were also surveyed on these issues. All groups believed poor secondary school preparation was an important factor although some believed this was not an issue for all students. Science and English classes appeared to be the most affected by poor secondary preparation. While indifferent recruitment was still an issue, all groups admitted that there was a need for better recruitment, especially of Black nursing students. Inadequate financial aid appeared extremely important to the Black nursing faculty, especially as it affects the single parent or the working RN returning to school. The study indicated disagreement concerning university hostility towards Black students, with the Caucasian faculty perceiving these issues as being less of a problem than Black faculty members.

One of society's pressing and continuing issues is the inadequate secondary school preparation of many students. This situation is especially frustrating since parents have to pay taxes toward public schools which they now perceive as being increasingly inadequate. Likewise, at the college or university level, the need for financial aid is becoming correspondingly important as tuition costs rise and the number of scholarships and grants decreases. However, an increase in

the number of faculty members from different cultural groups has decreased some of the hostility related to these concerns and has assisted in minority students in feeling more at ease.

One study has proposed the following strategies to overcome barriers to recruitment and retention (Crawford and Olinger, 1988):

- 1) Increase the sensitivity of faculty, staff, and administrators to the needs of culturally diverse students. Student attrition is decreased if faculty attitudes are positive.
- 2) Increase cultural diversity content in the nursing curriculum. Nursing educators must teach their students to be culturally sensitive in order that optimal care is given.
- 3) Develop institutional support services to meet the needs of all students. Such support includes academic advising, personal counseling, remedial programs, and child-care centers.
- 4) Increase financial resources. Recruit more culturally diverse faculty, staff, and administrators.
- 5) Develop an extensive orientation program.
- 6) Establish a multi-cultural center.

- 7) Establish peer support groups.
- 8) Develop relationships with elementary and secondary schools.
- 9) Provide increased support to predominantly Black institutions.

The results of a study on retention by the National League of Nursing in 1986 (Rosenfeld, 1987) demonstrated the importance of the strategies of Crawford's (1988) study: almost 80% of the respondents said applicants to their nursing programs must achieve a minimum level of achievement in regards to grade point average and SAT or ACT scores. In addition, other criteria including personal statements, letters of recommendation, and interviews are important sources of information. Even so, many programs have either had to reduce their standards or risk closing. In addition, 50% of the programs surveyed indicated a major problem with retention, namely, "Students having difficulty with required courses." Family obligations and financial problems ranked second and third in importance as reasons for lack of retention.

The decision to lower admission standards or close programs presents a legal and educational dilemma. While students in the future will require more academic assistance to graduate than previous students, because they represent a greater proportion of minority and immigrant students, these students also usually need more remediation than middle class

students (Rosenfeld, 1987). If, however, nursing educators simply lower admission standards, then both society and patients, who deserve and need optimal quality of care, will suffer.

In the 1950s, large numbers of high school graduates sought admission to colleges and universities and schools could be very selective in their choices. But in the 1960s, increasing numbers of students from diverse educational and cultural backgrounds were being actively recruited. As "open-door" admission policies became more prevalent, the number of low achievers became more common. As a result a decreasing pool of qualified applicants and the problem of lower admission requirements, colleges are now faced with a group of "at-risk students" who are more likely to fail. The characteristics of high risk students include low grade point average (GPA), low SAT scores, low critical thinking skills, and frequent transfers from one university to another (Donovan, 1989). The nursing profession's responsibility does not lie with lowering standards in order to increase the pool of applicants, but rather with identifying at-risk students and assisting them in meeting their educational potential.

Various studies have examined the need to identify the at-risk student. One study (Allen, et al., 1988), looked at the relationship among forty predictive variables and completion of the program, cumulative grade point average, and the possibility of an unsatisfactory grade in a nursing

completion of the program, cumulative grade point average, and the possibility of an unsatisfactory grade in a nursing course. Students with high scores in verbal fluency, thought organization, and self regard had significantly higher GPA's. A lower prerequisite and cumulative GPA at the time of admission was predictive of both a lower nursing GPA and an increased risk of earning a grade of D or F in a nursing course. Similarly, there was a correlation between a low GPA and non-completion of the program. Given such findings, it then becomes the admissions committee's responsibility to decide whether a student is at-risk or inadmissible, depending on the number of predictive variables. As suggested in previous articles, lower faculty-student ratios, tutorial, and other supportive programs will be necessary in assisting at-risk students towards academic excellence. Identification of at-risk students and continued assessment is important in any nursing program.

Compounding the problem of the at-risk student is the increase in the number of adults returning to school. The average new registered nurse in 1990 was five years older than the typical new graduate of 1988 as indicated in a study of over 28,000 recently licensed registered nurses. The National League for Nursing surveys reported the age of new graduates has increased from 24.8 in 1982 to 31 last year. In addition, nearly 50% of the graduates has at least one dependent child at home (News Caps, 1991).

STATEMENT OF THE PROBLEM

While many studies using the KOLB Learning Style Inventory have examined the learning styles of nursing students, the results have been varied. More information is needed on other factors which affect one's learning style. For example, does age have a significant effect on learning styles? Is an adult learner and/or at risk student able to change her/his learning style? The present study will attempt to address these and other questions by way of a research design which incorporates the theoretical perspectives of Kolb (1976) and Beeman (1986). These perspectives are indicated in more detail in the purpose section and will be fully explored in Chapter II.

PURPOSE OF THE STUDY

The purpose of this study is to compare the perceived needs and learning styles of registered nurses in RN/BSN completion/component programs and generic students (individuals enrolled in a four year baccalaureate nursing programs). Many studies have examined learning styles of nursing students, but none have initially examined the perceived needs of these students. It is suggested that individuals learn more effectively if their initial needs are met first.

The change in the demographic characteristics of the student population in universities has changed in recent years. The average student is now older, has dependents, and

has lower SAT scores and grade point averages. In addition, the number of adult learners and "at risk" students has increased. Therefore, the importance of discovering information on needs and learning styles of these students has become more significant. Increases in recruitment are not significant if the universities are not able to retain the students. Such information may influence retention strategies. On the other hand, students may learn easier if their individual needs are met.

Based on the theories of Beeman and Kolb, the investigator explored the following empirical questions:

- 1) Is there a difference between registered nurses and generic students in regards to the BEEMAN scale in terms of their perceptions of their respective programs in relation to:
 - a. general program satisfaction
 - b. promotion of self direction
 - c. orientation to learning
 - d. environmental support
 - e. practicality
 - f. components inhibiting learning
- 2) Is there a difference among the six scales of the BEEMAN measure for all generic students and registered nurse students?

A descriptive analysis of generic and RN/BSN students within each program related to the Learning Style Inventory (LSI) scores was completed. Lastly, the scores of the BEEMAN measure was compared to the LSI scores.

In examining the learning styles of adult learners, Kolb's Learning Style Inventory and Beeman's Educational Environment Measure for Adult Nurses (BEEMAN) will be implemented. Both are based on the following assumptions of Knowles' (1984) adult learning theory:

- 1) Adults have a need to know. Adults need reasons for learning something before learning it.
- 2) Adults are self-directed and responsible for their decisions.
- 3) Adults utilize experience as the foundation for learning. Therefore individual differences vary greatly among the learners.
- 4) Adults demonstrate motivation and a readiness to learn.
- 5) The adults' orientation to learning is problem-centered.

Much has been written related to adult learners and learning styles. Definitions vary with the theorist. Therefore, in this research, the investigator will use the following operational definitions:

ADULT - includes the following characteristics:

biological, legal, social, and psychological

ANDRAGOGY - any intentional and professionally guided activity that attempts to bring about a change in the adult

AT RISK STUDENT - student with a low grade point average (GPA), low SAT scores, low critical thinking skills, and frequent transfers

COGNITIVE STYLE - observing how people perceive and respond to stimuli in their environments

COMPLETION PROGRAM - baccalaureate program for registered nurses which is accredited separately from the generic program

COMPONENT PROGRAM - baccalaureate program which is accredited as part of generic program. Must meet same requirements as generic students.

GENERIC STUDENT - student enrolled in basic nursing courses at the baccalaureate level

LEARNING STYLE - focuses on psychological tests and observations of students' behaviors and interactions in the classroom

RN TO BSN STUDENT - a registered nurse who returns to complete her/his baccalaureate degree

Such definitions will clarify the use of the variables in this study.

At the same time though, limitations may exist in using Kolb's Learning Style Inventory and Beeman's Educational Environmental Measure for Adult Nurses as the basis for the theoretical framework for this study. Do learning styles remain the same over time? Does a desire for further education versus the belief that a baccalaureate is a necessity have an effect on one's learning style? Adaptation to a particular teaching style may be influenced by one's psychosocial domain. Individual differences, particularly social-cultural determinants are important factors of learning styles. In addition, are there specific characteristics within each educational environment which positively or negatively affect student satisfaction? Such questions must be considered before attempting to generalize the results of this study.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Literature on the adult learner has increased in recent years as universities have examined their enrollment and attrition rates. A critical aspect of this issue is the question of how adults learn. E. Lindeman (1926) identified the following assumptions about adult learners:

- 1) Adults are motivated to learn as they experience needs and interests that learning will satisfy.
- 2) Adults' orientation to learning is life-centered.
- 3) Experience is the core of adults learning.
- 4) Adults have a need to be self directed.
- 5) Individual differences among people increase with age.

The understanding of Erik Erikson's (1950) theory of the eight stages of man is an important concept in the framework of adult education. The adult individual should be striving for generativity and integrity. Learning is related to the successful completion of these tasks and is therefore lifelong.

Malcolm Knowles (1984) has formulated a theory of adult learning related to the unique characteristics of adult learners. At the time of its publication, Knowles stated that the word "andragogy" did not appear in any dictionary. Knowles (1984) had previously used the word to distinguish any professionally guided activity that aims at a change in adult persons (p. 50).

Knowles (1984, p. 55) defines "adult" using four dimensions:

- 1) Biological - age of reproduction.
- 2) Legal - age at which one may vote, drive, or marry.
- 3) Social - age of adult roles - worker, spouse, parent.
- 4) Psychological - being responsible or self directing.

The psychological dimension is the most important and occurs in stages from childhood through adolescence.

Knowles then developed several assumptions based on the psychological dimension.

- 1) The need to know:
Adults need reasons and/or benefits for learning something before learning it. Real or simulated experiences assist the students in demonstrating the necessity for further learning.

2) The learner's self concept:

They are now responsible for their decisions and self directive. At the same time, many become dependent when they return to school. Faculty need to encourage this transition with creative teaching methods.

3) The role of the learner's experience:

The adults have a greater number of experiences to use as a foundation for learning. At the same time, the variety of experiences leads to a wider range of individual differences among the students. Group discussions, simulation exercises, problem solving activities, and case studies emphasize the use of students' experience.

Experience may lead to potentially negative effects. Adult learners may develop mental habits, biases, and presuppositions related to their experiences. More importantly, experience defines who the adults are.

4) Readiness to learn:

Adults become ready in order to cope with present situations. This readiness to learn is associated with moving from

one developmental stage to another.

The need for a baccalaureate in nursing was the impetus for some registered nurses to return to school.

5) Orientation to learning:

Related to readiness, the adults are problem centered in that they will learn something to assist them with daily problems. In addition, they learn most effectively when the new knowledge is presented through real-life application.

6) Motivation:

The greatest motivators are internal pressures, but sometimes a poor self concept decreases the motivation. Motivation is frequently negated by barriers such as inaccessibility of opportunities or resources, time constraints, and programs that do not promote adult learning.

Learning requires more than readiness to learn and motivation. Thus, mild anxiety is normal, but moderate anxiety can be detrimental. This anxiety will increase the belief that the learner's perceived needs are not being met. Therefore, if a

pedagogical framework is realistic for a particular student, then a pedagogical strategy should be implemented initially.

More specifically, what are the needs of baccalaureate nursing students? The Beeman Educational Environmental Measure for Adult Learners (BEEMAN) based on Knowles' adult learning theory consists of 73 questions collapsed into six scales (1986):

- 1) General program satisfaction
- 2) Self direction and independence
- 3) Environmental support
- 4) Orientation to learning
- 5) Practicality
- 6) Measures inhibiting learning

Beeman investigated how registered nurses (RNs) in RN only baccalaureate programs in nursing, RNs in basic or generic baccalaureate programs, and generic students in baccalaureate programs perceive their particular program's ability to meet their needs in regards to:

- 1) self directedness and independence.
Are students' self-image considered?
- 2) the use of prior experience. Are students encouraged to apply previous background and skills?
- 3) the assessment of their readiness to learn. Do students receive support for their level and ability?

4) Their application of new knowledge.

Is the student's problem-centered orientation to learning acknowledged?

In addition, qualitative data are obtained from four open ended questions: "Why did you pick this particular baccalaureate program" relates to the concepts of cost, convenience, credit, curriculum, and recommendations. The question "what made you decide to get a baccalaureate degree in nursing" focuses on employment, personal and academic reasons. The answer to the next question, "Is your program satisfying for you," relates to the last question, "How would you change your baccalaureate program to make it a more satisfying program?"

Data from 284 students in twelve institutions were compared using a factor analysis followed by a varimax rotation which placed the 73 items into six scales. A one-way analysis of variance was done to determine whether significant group differences existed among the programs. Significant differences ($P=.0001$) were found on the last three scales of the questionnaire. Scale IV contained Measures Enhancing an Orientation to Learning. Non RNs (or generic) students were less positive about statements in this scale than the registered nurses in either all RN programs or generic programs. Responses in Scale V, Measures of Practicality, demonstrated that students in basic or generic programs were more closely allied. The fifth scale was relevant for

students who had practical concerns about their program. Scale VI, Measures Inhibiting Learning, demonstrated significant differences among groups. Some of the items suggested that students are not sure whether they want faculty to vary their approach to teaching.

Qualitative data was obtained from the open-ended questions. Answers to the first question, "why did you pick this particular program" dealt with cost, convenience, credit, curriculum, and reputation. RNs in Rn only programs were more concerned about convenience (48%) and cost (55%). "Required" (40%), "employability" (29%), "personal" (25%), and "academic consideration" (6%) were responses to "What made you decide to get a baccalaureate degree in nursing?" Sixty percent of the participants responded positively to the question, "Is your program satisfying for you?" Many RNs expressed unhappiness at returning to school. Frequently the RNs felt the educational system and its requirements imposed on their personal lives. Some of the RNs perceived a lack of faculty respect or support. The RNs were also dissatisfied with the repetitive content of many courses. Most RNs favored a decrease in clinical time. Many of the previous comments also related to the third question, "If you could, how would you change your baccalaureate program to make it a more satisfying experience?" Most students (46%) felt they would change the curriculum. The responses included "greater flexibility in

scheduling," more credit for previous experiences," and "different requirements for entrance."

The BEEMAN measure demonstrates individual differences among a diverse student population. Registered nurses returning to school do perceive differently their respective program's ability to meet their needs. Faculty need to be aware of the unique needs of adult students, as well as independent learning strategies which promote self direction and independence. Individual counseling and support groups of fellow students is paramount. In addition, the need for professionalism must be encouraged. Most nurses view themselves as professionals but have conflicting feelings about the need for a baccalaureate.

The variety of individual needs in turn mandates the assessment of various models of cognitive and learning styles in adult students. Cognitive style is "observing how people perceive and respond to stimuli in their environments." Learning style is similar to cognitive style, but the context is more specific. Learning style focuses on psychological tests and observations of students' behavior and interaction in the classroom (Partridge, 1983). Another researcher defines it as an attribute, characteristic, or quality of an individual that interacts with instructional circumstances to produce differential learning achievement (Ostmoe, 1984). Kolb (1976) defines learning style as the individual's own means of perceiving and processing information.

One model of cognitive style is field dependence-independence developed by Whitkin (1977). An individual's style tends to be demonstrated early in childhood, with socialization also tending to influence this development. The tendency to rely primarily on internal referents is considered a field-independent cognitive style while crediting external referents is field-dependent cognitive style.

Whitkin (1977) found that field-dependent and field-independent students do not differ significantly related to cumulative college grade point average, but they may differ in their selection of courses. Students majoring in natural science, mathematics, physics, chemistry, engineering and art have been field-independent, whereas students majoring in the humanities, social science, and education are frequently field-dependent.

Talarczyk (1989) examined the field independent or dependent cognitive styles of 181 nursing students. The cognitive styles were operationalized through the use of the Group Embedded Figures Test (GEFT). High scores indicate field independence. The study did not demonstrate a significant correlation between the GEFT scores and academic achievement in pre-nursing courses and different specialty nursing rotations. It is possible that other factors such as aptitude-treatment-interaction (ATI) may have an effect on the relationship between cognitive style and academic achievement.

Reflection-impulsivity is another cognitive model developed by Kagan (1965). The individual is shown a picture and asked to identify the object from a group of similar objects. The results relate to whether the individual will make impulsive or reflective decisions. This cognitive style has a great potential impact on nursing education where pressure may make an individual even more impulsive.

The Mann model (1970) revealed 8 types of students:

- 1) Compliant
- 2) Anxious dependent
- 3) Discouraged
- 4) Independent
- 5) Heroes
- 6) Snipers
- 7) Attention seekers
- 8) Silent

This model relates to one purpose of this study in that teachers must be cognizant of the needs of their students and encourage them.

The Gasha-Riechmann Model (1974) focuses on students' attitudes toward learning, classroom procedures, teachers, and peers. Three dichotomous groups of students were revealed. One group of students was "independent" and preferred self direction versus "dependent students" who needed more structure and guidance. Some students were "collaborative" in that they cooperated with others while others "competed with"

their peers. Lastly, students "participated" or "avoided" taking part in learning activities.

The Kolb Model (1976) is an eclectic approach incorporating experiential learning theory, individual development, and personality types. This model will be explained in more depth as it composes part of the theoretical framework for this study. In using experiential learning theory, differences in individual learning styles and respective learning environments can be identified. The learning model is based on the Jungian concept of styles in which fulfillment in adult development is accomplished by higher level integration of nondominant ways of dealing with the world. The basis of experiential learning theory is a description of the learning cycle in which experience is transferred into concepts which are then used as guides in the choice of new experiences.

Kolb (1984) defined learning as "the process whereby knowledge is created through the transformation of experience." His learning theory was holistic in that it combined experience, perception, cognition and behavior. Key concepts of Kolb's theory include:

- 1) the emphasis is on process rather than outcomes
- 2) knowledge is continually being created and recreated
- 3) learning is subjective and objective

Learning should not be defined on outcomes alone since people should be able to apply their learning to other situations. Learning is more than understanding the content verbatim. Learning is a continuous process in that the individual approaches the new topic with preconceived, but possibly inaccurate ideas. Experience is a constant adapter of new knowledge (Arndt, 1990).

Individuals learn in different ways and their choice of style is based on past experiences, hereditary, and environmental demands. Learning preference relates to the "likes" and "dislikes" that individuals have for particular conditions of learning including preferences for certain strategies. Preference for a particular learning style is not static. Research has demonstrated that medical students changed their learning style preference after experience in medical education (Kolb, 1976). When there is a mismatch between the occupation's learning style norms and the individual's learning style, the individual will either change or leave the field.

Learning preferences necessitate teaching instruction as an active two-way communication process involving the exchange of knowledge, skill and affect (Ostmoe, 1984). Each learner is involved intellectually, physically, socially, and emotionally in the learning process. Similarly, the teacher has his/her own feelings, values, skills, and attitudes which

affect behavior. Teaching is then generalized or individualized dependent on the unique needs of the learner.

Kolb (1976) believes learning is a four stage cycle including:

1) Concrete experience:

Focuses on being involved in experiences and dealing with immediate situations in a human way. These individuals prefer an intuitive approach. They are usually more open minded and enjoy relationships with other people.

2) Reflective observation:

Emphasizes understanding the meaning of ideas by carefully observing and describing them. The understanding is more important than practical applications. Such individuals rely on their own feelings and beliefs in forming opinions.

3) Abstract conceptualization:

Emphasizes thinking and logic more than feeling. Such people enjoy systematic planning. A scientific approach is implemented in solving problems.

4) Active experimentation:

Involves practical applications for the purposes of influencing people and stimulating change. They are willing to take risks in order to see results. The emphasis is on doing versus observing.

Therefore, the learner, if he is to be effective, needs four different kinds of abilities. She/he must be able to involve himself openly in new experiences from many perspectives (RO), create concepts that integrate the observations into logical theories (AC), and use these theories to make decisions and solve problems (AE). Can anyone though become highly skilled in all of these abilities? At the same time, abstractness is not always good and concreteness bad. Conflict develops between actively testing one's hypotheses and interpreting data already obtained. As a result of hereditary factors, past life experiences, and the influences of the present environment, most people develop learning styles that emphasize particular learning abilities. These abilities are observed in four learning style types (Kolb, 1984):

1) The "converger's" dominant learning abilities are abstract conceptualization and active experimentation (symbolic mode). This individual prefers problems with one correct answer and their practical application. He/she is unemotional and sees problems as black or white. A "convergent" learner :

a) focuses on logic and ideas

- b) prefers technical tasks
- c) emphasizes thinking rather than feeling
- d) is a problem solver
- e) enjoys doing and seeing results

2) The "diverger" focuses on concrete experience and reflective observation (affective mode). He/she has a great imagination and is able to combine ideas into a meaningful "gestalt." Such people enjoy cultural interests and the arts.

A "divergent" individual:

- a) focuses on being involved
- b) emphasizes feelings and understanding of the problem
- c) is intuitive, imaginative, and open minded
- d) values patience and impartiality

3) The "assimilator" uses abstract conceptualization and reflective observations (perceptual mode). He/she enjoys inductive reasoning and abstract concepts. His/her ability to create theoretical models is the "assimilator's" greatest strength. This style is frequently found among those in mathematics and the sciences. The "assimilator":

- a) focuses on logic and ideas
- b) emphasizes thinking rather than feeling
- c) creates theoretical models
- d) values precision and analysis

4) The "accommodator" prefers concrete experience and active experimentation (behavioral mode). He/she is a risk taker in that he/she prefers to implement plans and

experiments and be involved in new situations. He/she "accommodates" or "adapts" to specific immediate situations.

This learner:

- a) is intuitive and open minded
- b) demonstrates an artistic approach
- c) problem solves by trial and error
- d) emphasizes feeling rather than thinking

To be effective, a teacher must devise teaching strategies for the learning styles of all respective students. At the same time, it is important for the teacher to assist the students to develop additional learning styles for various learning experiences. The "divergent" learner initiates a new learning experience with what he/she already knows from past experience. Teacher/student interaction is important. "Assimilator" learners value the knowledge of the expert (teacher). Concentration should be focused on providing factual information. Sharing ideas with their peers will assist the students in integrating past and present information. "Convergent" learners prefer knowledge that may be applied. Encouraging a student to return demonstrate a psychomotor skill is useful for the "convergent" learner. Since "accommodative" students frequently learn by trial and error, they are more likely to experiment or modify options. Such experimentation may be positive or negative. "Accommodative" learners explore all possibilities as they connect new knowledge to their own goal (Arndt, 1990).

The various learning styles affect not only an individual's adaptation to specific situations but also to life in general. Learning style theory encompasses concepts such as creativity, problem-solving, and decision-making. Learning proceeds through three stages during the life span. The first stage, acquisition, occurs from birth to adolescence. During this time, the child learns the basic learning abilities necessary for later life. Specialization, the second stage, includes the period of formal education or career training. The individual uses his particular learning style to adapt to the particular tasks of his/her chosen field. Integration occurs in mid-life when other learning styles appear leading to new career interests. Since the average age of nursing students is increasing, many of these individuals may be progressing through either specialization or integration.

Kolb also studied the correlations between the LSI and the Myers-Brigg Type Indicator, the Thematic Apperception Test (TAT), measures of n Achievement, n Power, and n Affiliation (Kolb, 1976). In regards to the Myers-Brigg Type Indicator, the strongest and most consistent relationships appear to be between concrete/abstract and feeling/thinking and between active/reflective and extrovert/introvert. No predictions were made about the TAT measures of motivation, but the correlation between concreteness and high n Affiliation is consistent with the idea that concrete individuals are people

and feeling oriented. Another concept of Experiential Learning Theory focuses on the relationship between an individual's learning style and the type of career the individual chooses. Using the previous management sample of 800 individuals, a correspondence was seen between their LSI scores and their initial academic specialization. Business majors tend to have accommodative learning styles, while engineers frequently demonstrate a convergent style. History, English, political science, and psychology majors have divergent styles, while physics majors are more abstract.

Various researchers have used Kolb's model as the theoretical framework for their research. Korhonen (1986) utilized Kolb's model in measuring class achievement based on rote learning and the understanding level of learning. The study demonstrated that learning style and learning environment interact to affect achievement. The researcher expected accommodators and divergers to score higher on rote level of learning and assimilators and convergers on the understanding level of learning questions. The results were only significant for the learning styles and rote level of learning questions. Learning style may not be the only important variable. Researchers need to continue to define "environment" to better understand its interaction in enhancing achievement.

Remington and Kroll (1990) examined the characteristics and learning style preferences of "at risk" students. A

convenience sample of fifty junior and senior generic baccalaureate nursing students was used. Students with known learning problems and multiple D's, F's, and W's were represented. The mean cumulative GPA was 2.85. The participants completed the Kolb Learning Style Inventory (LSI) and a modified version of the Dunn and Dunn Learning Preference Questionnaire (LPQ).

The results revealed that "at risk" nursing students do have some identifiable preferred learning styles. The primary learning style of these students was "diverger." Individuals with this style choose different points of view to look at concrete situations. Similarly, Kolb (1976) predicted that nurses would be "divergers" when he developed his expected outcomes for various academic fields. The Dunn and Dunn questionnaire results demonstrated that students preferred visual demonstrations, experiential styles, and internally structured situations.

This study indicated that "at risk" students tend to use concrete experience and reflective observation. The use of journals, discussions, and brainstorming are possible tools in promoting reflective observation. Simulations and laboratory/clinical experiences in turn promote concrete experience. Small group discussions and tutoring experiences provide interaction among the students. Feedback to "at risk" students should be formative in order to encourage a supportive educational climate.

Merritt (1983) examined learning style preferences of generic and registered nurse (RN) students. In addition, she examined the relation between age and learning style preferences of generic nursing students and the effects of age and experience on RN students. Merritt used Kolb's LSI and Canfield's LSI. Canfield's model (1980) describes the effects of affiliation, structure, achievement, and eminence on individual learning preferences. Affiliation includes preferences for friendly interpersonal relations with peers and the instructor. Structure refers to preferences for the presentation of content in a logical manner and a desire for detailed information about expected learner behavior. Achievement includes preferences for the identification and pursuance of personal goals independently. Lastly, eminence is defined as preferences for content presented by teachers who control the learning environment and the comparison of one's performance with the other learners.

Results indicated that the Kolb and Canfield models did not differ significantly between age groups of generic students. On the other hand, tukey tests demonstrated that the mean score of generic students for reflective observation was significantly different from the other scales. In addition, mean preference scores from Kolb's model did not differ significantly between groups of RN students in relation to age or amount of work experience. The mean score of RN students for the reflective observation scale was again

significantly different from the other scales. Generic students significantly preferred structure, affiliation, and achievement in comparison to the RN students. The results of this study did not support the construct that age or work experience have an effect on adults' preferences to learning. Since there was a difference between the learning styles of the two groups, it is possible that age and work experience may have an interactive effect but not a singular effect.

Another study used six instruments to obtain data about learning style, personality type, perceptual preference, sex-role identification and demographic information of beginning baccalaureate nursing students (Hodges, 1988). Kolb's LSI test indicated that the majority of the students were "divergers" and "accommodators" of which the greatest percentage was the concrete learner. The Myers-Briggs Type Indicator test revealed sensing, feeling, and judging as the most common personality characteristics. Perceptual preference was determined through two tests developed by Lowenfeld (1945). Haptics perceive subjective views of an object with the use of muscular, physical, kinesthetic, or emotional words. The difficulty of the haptic learner in retaining objective visual images may lead to problems with visual learning tasks. Forty three per cent of the subjects were haptic learners. The Bem Sex-role Inventory and a demographic questionnaire were also administered. Most of the

subjects considered themselves feminine, but in contrast, older students tended to be less feminine.

These findings indicate the typical beginning nursing student favors a caring relationship with teachers, structure, permission to be assertive, and the use of practical material which requires the use of all the senses.

Laschinger (1989) examined the relationship between learning and environmental factors and nursing students' attitudes toward nursing theories. Seventy six registered nurses students and 121 upper level generic baccalaureate nursing students completed Kolb's LSI, an Environmental Press Questionnaire (EPQ), and a nursing theories questionnaire.

Results indicated that 63% of the participants had concrete learning styles. In using the EPQ, subjects also rated nursing learning environments as more concrete than abstract. The groups differed in preferred methods for learning nursing theory. Generic students preferred hands-on experiences while the registered nurses preferred lectures. Subjects with concrete learning styles had significantly less positive attitudes toward theory based nursing than those with abstract learning styles. In addition, subjects who perceived nursing environments as concrete were significantly less positive about theory based nursing. Although concrete learners preferred concrete methods more than abstract learners, the differences were not significant. On the other hand, 67% of the participants preferred Orem's theory,

regardless of their learning style. The preferences for Orem's theory may have been due to familiarity with her theory. Kolb's hypothesis that learning styles of members of an academic field reflect the environmental press of that field was supported by the relationship between learning style and environmental perceptions in this study. The

MacArthur Institute of Higher Education in Australia examined the perceived need to identify different approaches to learning and in turn match teaching and learning styles (McMillan, 1990). Four factors influence this match:

- 1) developmental level of the learner
- 2) subject matter to be learned
- 3) surrounding context
- 4) goals of education

It is difficult to assess whether teachers adapt to students' learning needs or students change to individual teacher's presentations. In addition, much of the research on adult student learning is based on the teachers' perceptions of learning rather than obtaining reports of the students' experiences. Students with learning difficulties frequently relate their problem to poor teaching techniques. Do researchers then need to focus on learning difficulties or learning styles when examining learning outcomes?

The success in matching teaching styles with adult learners will depend on the teacher's ability to perform as a facilitator of learning and the students' readiness to engage

in an interaction with the teacher. Difficulties may develop if the teacher lacks abilities or skills in facilitation or the student is not ready to participate in self-directed learning. Collaboration and collegiality should be encouraged. Various learning styles may be introduced that are compatible with the teaching style. On the other hand, educators must be flexible. The teaching-learning process is complex.

DeCoux (1990) compiled a review of the application of Kolb's theory in nursing research. Huch (1981) administered Kolb's Learning Style Inventory and Rotter's Internal-External Scale to 163 generic and registered nurse (RN) students. There was no significant difference in the two groups according to preferred learning style. However, the greatest percentage of RN students preferred the "Accommodator" learning style, whereas the generic students preferred the "diverger" style. There was also a significant relationship between learning style and satisfaction with the program. The "accommodators" were more satisfied.

King (1984) examined adult development patterns in generic and registered nurse (RN) students. The Kolb Learning Style Inventory (LSI), Washington University Sentence Completion Test, and Tarule's Educational Experience Inventory were administered to seventy-nine students of one university. Significant differences were found related to life stages and ego development but not with learning styles. The majority of

students were accommodators or divergers. One questions whether the combination of tests affected the results.

One hundred thirty-one baccalaureate students and 140 associate degree students (two year program) were compared using Kolb's LSI and Rotter's Internal-External Scale. The study did not prove the hypothesis that baccalaureate students would prefer more reflective observation and abstract conceptualization. This hypothesis may be difficult to prove with the data from one school, as many adult learners also attend associate degree programs before continuing in baccalaureate programs (Fojtasek, 1988).

Little agreement has occurred on the most common learning style of nursing students. On the other hand, accommodators and divergers are frequently seen. In addition, many of the studies only examined one group of students. Have significant variables been underrepresented?

The theories of locus of control, self-directed learning readiness and learning style preference were used to compare the learning characteristics of generic and registered nurse students (Linares, 1989). Locus of control refers to an individual's beliefs about control over life events. Some people feel in control over things that happen to them (internal control) whereas others feel outcomes in life are determined by other forces (external control). Self-directed learning is intentional learning of an individual to gain knowledge, skill, or a change in behavior. The Adult Nowicki-

strickland Internal-External Scale (ANS-IE), Guglielmino's Self-Directed Learning Readiness Scale (SDLRS), and Rezler's Learning Preference Inventory (LPI) were given to nursing students in two state supported schools.

The mean scores for locus of control for both groups were nearly identical, but there were individual differences. The mean scores were lower indicating a more internal locus of control. Nursing students may feel a greater ability to exert control over themselves and others related to their motivation to help and influence people's health. The mean score for self-directed learning readiness for the generic student sample (230) as compared with the RN group (233.9) were different but the difference was statistically insignificant. Both groups scored much higher than a large sample of adults. Therefore, nursing students appear to be self-directed in their learning. Age in both groups had a statistically significant influence on readiness for self-directed learning. In addition, the 31 through 50 age group was more self-directed which confirms the basic assumption of adult learning theory. Ethnic background influenced the way in which subjects responded to the SDLRS. Hispanic subjects appear less ready to engage in self-directed learning. It is possible that cultural values emphasize a more passive female role. Registered nurse students indicated a slightly stronger preference for individual, abstract, and student-structured modes of learning. Lastly, ethnic background influenced a

student's learning style preference. Hispanic and Black students indicated a greater preference for the concrete learning mode than did white subjects. Faculty need to provide structure while promoting self-direction and autonomy.

Another study (Lassan, 1984) using Kolb's Learning Style Inventory examined learning style differences of generic and registered nurse students in one baccalaureate program. The results demonstrated that RN students and generic students' learning styles become more similar as they progress from junior to senior level. As seniors, both groups tended to be more able to learn by a variety of methods. In other words, learning styles were not permanent. The results of this study, though, were only marginally significant.

The purpose of this study is to compare the perceived needs and learning styles of upper class generic nursing students and RN-BSN completion/component students. In examining the review of the literature, many articles discussed the needs of various groups of students. The majority, though, focused on learning, but one article (Beeman, 1986) did examine needs.

The study examined the following questions:

- 1) Is there a difference between registered nurses and generic students in regards to the BEEMAN scale in terms of their perceptions of their respective programs?
- 2) Is there a difference among the six

scales of the BEEMAN measure for all generic students and registered nurse students?

Beeman developed the Beeman Educational Environmental Measure for Adult Nurses (BEEMAN) to analyze the perceived needs of nursing students in baccalaureate programs. Questions were formulated from concerns and/or satisfactions of registered nurse students by means of a review of the literature. Areas of concern, problems and/or suggestions were then indexed and developed into statements which cross-referenced students' concerns, Knowles' adult learning theory, and program evaluation including structure, process, product, and cost. These entities were then formulated into a multi-dimensional attitudinal scale. To establish validity for the content of her questionnaire items, Beeman developed a content map based on adult learning theory. Content validity was then established by ten professional nurse colleagues. Five of the nurses were familiar with the concept of andragogy. Items which earned a mean of .50 among the colleagues were included in the study.

A pilot study was completed with forty students during class time. The original questionnaire, consisting of a demographic section, five open ended questions, and 107 statements based on the Likert scale, could be completed in fifteen minutes. The results of the statements were compared

for variance. Statements without notable variance were deleted. Of 107 statements, 34 (31%) were discarded.

The final revision of the questionnaire has three sections:

- 1) Background and demographic data.
- 2) Five open ended questions.
- 3) A main section consisting of 73 questions concerning the educational environment employing a Likert style format.

284 (39%) of 716 questionnaires mailed to twelve schools were returned. Various statistical methods were implemented. Responses were sorted by schools and frequency distributions were completed on the demographic data. The 73 attitudinal items were factor analyzed, using one-way analysis of variance, into six scales which represent components of baccalaureate nursing educational environments. The lowest mean, 2.02 for Scale III, indicated the greatest agreement with the scale items by all participants. The highest mean, 2.48 for Scale VI, was the most neutral on the Likert scale. Statistically significant differences were found on Scales IV - VI ($P=0.0001$). These statistics indicate that the questionnaire items seem to reflect the principles of adult learning.

Having identified different needs among nursing students, how do the students learn? This question may be examined more specifically by assessing learning styles of students. To

assess individual orientations toward learning, Kolb's Learning Style Inventory (1976) was used. Kolb developed his Learning Style Inventory instrument based on four objectives. The instrument was developed in order that people would respond to it in a similar fashion as they would to a learning situation. The instrument was to be both normative (allowing comparisons between individuals related to their emphasis on a given learning style) and ipsative (comparisons within individuals). A self-description format was chosen, as it was felt that behavioral choices and decisions would be better determined. The inventory was then constructed to validate the construct based on the theory of experiential learning that learning styles would predict behavior. The inventory was to be brief in order that feedback could be given to the participants.

The items of the Learning Style Inventory were selected from a longer list of words created by four behavioral scientists familiar with experiential learning. The final version of the items for the Learning Style Inventory has been developed through item analysis and consists of a twelve item self description questionnaire. One word in each item corresponds to one of the four learning modes:

Watching - reflective observation

Thinking - abstract conceptualization

Doing - active experimentation

The test can be completed in about fifteen minutes.

Students usually use one of two methods in completing the questionnaire.

1) Students attempt to decipher the meaning of each word in the questionnaire. They then try to apply the meanings to the self images in which they believe.

2) Students use previous life or clinical experiences as a foundation. They then assess which words were most descriptive of those situations (Kolb, 1976).

Each item asks the participant to rank order four items in describing his learning style.

Data were comprised from 287 managers and management students (Kolb, 1976). None of the words correlate less than .45 with its scale total and most correlations range between .50 and .60. In addition, the words comprising each scale demonstrate similar but lower correlations with the opposite theoretical scale. Therefore, the data reveal that the words used in the four primary LSI scales have both high convergent and discriminant validity. Experiential learning theory hypothesizes that Concrete Experience (CE) would be negatively correlated with Abstract Conceptualization (AC), and that Active Experimentation (AE) would be negatively correlated with Reflective Observation (RO). Intercorrelations of the scale scores from a sample of 807 people proved this hypothesis.

In theory, the concepts of split-half and test-retest reliability are appropriate in measuring independent

psychological traits, but the learning modes of the Learning Style Inventory are interdependent and variable. A participant's action is influenced to some degree by all the modes. At the same time, an individual's perception of the problem may influence the mode he/she uses. Therefore, Kolb (1976) predicted the test-retest and split-half reliability coefficients would be less than 1.0 since few individuals are pure personality types. There may also be a memory recall from test to retest in that the retest measures the same trait in addition to the memory effect. More important is whether the tool demonstrates consistency in examining predicted variables. The Learning Style Inventory is meant to be only the initial step in examining one's learning style.

To assess the stability of Learning Style Inventory scores over time, four test-retest studies were completed with four different samples (Kolb, 1976). People in group one (senior medical students at Boston University) were continuing in their role during the retest period. The students were tested at three month intervals and demonstrated high test-retest correlations ($AC - CE = .61$ and $AE - RO = .71$).

The second group were MIT students in an accelerated program in management. Most of the students had been working managers before returning to school. The students had completed the questionnaire at the beginning of the program and after an intense summer course. The intense separation from previous experiences had an effect on the test-retest

correlations in that the AC - CE and AE - RO scores are somewhat lower. The AC (abstract conceptualization) score was greater for this group.

People in the third group were first year graduate students in the regular program. Most enrolled directly after undergraduate study. Since the differences in experience were small, the test-retest correlations were similar to the results of the second group.

Students in group four, MIT Sloan Fellows, were tested seven months after the initial testing. This group demonstrated the greatest difference over time as the participants were mid-career managers before returning to graduate school. They also had the lowest retest correlations on most of the Learning Style Inventory (LSI) scales. The responses to the LSI scales appear to be determined by variable situational factors and a more stable personality. On the other hand, several studies (Kolb, 1976) have demonstrated strong correlations between LSI scores and undergraduate college majors. Such stable behavior patterns may also be determined by a stable pattern of interaction between personal characteristics and situations. Therefore, behavioral stability results from a positive feedback loop. Compatibilities among faculty and students related to the teaching/learning process are paramount.

Kolb (1976) also investigated the effects of sex, age, and educational level on Learning Style Inventory scores.

Women were more likely to score higher on the Concrete Experience mode whereas men scored higher in Abstract Conceptualization. The results may be influenced by the influence of sex on education and career choices. More male students are enrolled in engineering programs whereas the majority of nurses are females. Further research is needed to differentiate sex differences from education and career factors.

Another study, using management group and female Lesley College undergraduates, examined the effects of age and education level on one's learning style (Kolb, 1976). The results demonstrated a slight tendency toward increasing abstractness as one grows older. A more reflective orientation is seen in later years. On the other hand, the results may have been skewed since the 16 - 20 year old group are all female undergraduate students. Generalized adult norms related to the effect of education on learning style were obtained from means and standard deviations of 17 groups (Kolb, 1976). The sample consisted of undergraduate and graduate students, law students, medical students, teachers counselors, computer programs and salesmen. The five undergraduate samples demonstrated high reflective Observation Orientation. Elementary school teachers were characterized as having a high Concrete Experience. This result may partially be related to the facts that the sample is mostly female and a relationship with young children necessitates a more

concrete teaching style. The medical group exhibited a change from first to fourth year. In the first year, the Abstract Conceptualization mode is dominant, but the students change to a more Active Experimentation orientation before completion of medical school. The computer programmers demonstrated the greatest abstract orientation. Kolb believed that the Learning Style Inventory scores demonstrated sufficient variability across different populations to be used in assessing the learning styles of people in various occupations.

The investigator evaluated whether there is a comparison in the results of both tools. Beeman (1986) observed that registered nurses in completion programs perceived they had more independence and self direction than the generic students. The question is do these same students have more independent learning styles?

CHAPTER 3
METHODOLOGY

This study explored the correlation between nursing students' perceived needs and their respective learning style preferences. In particular, the investigator examined the following empirical questions:

- 1) Is there a difference between registered nurses and generic students in regards to the BEEMAN tool in terms of their perceptions of their respective programs in relation to:
 - a. general program satisfaction
 - b. promotion of self direction
 - c. orientation to learning
 - d. environmental support
 - e. practicality
 - f. components inhibiting learning
- 2) Is there a difference among the six scales of the BEEMAN measure for all generic students and registered nurse students?

A descriptive analysis of generic and RN/BSN students within each program related to the learning Style Inventory (LSI)

scores was completed. Lastly, the scores of the BEEMAN measure were compared to the LSI scores.

While many studies have examined the effectiveness of the LSI, the investigator believed it would be significant to explore the students' needs initially as part of the basis of a needs assessment. Assessment is the initial step in the nursing process or any planning process. In addition, universities have been mandated to substantiate learning outcomes if they are to receive public funding. Therefore, student characteristics and academic program variables were assessed, and the BEEMAN tool was utilized to examine many of the aforementioned variables.

RESEARCH DESIGN

A nonexperimental research design was used to compare the needs and learning styles of nursing students. "Nonexperimental research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable" (Kerlinger, 1986, p.348). Nor in such a design is random assignment possible. The inability to manipulate the independent variable and to randomize may lead to improper interpretations. On the other hand, nonexperimental research is frequently used in education and psychology since many important issues in the human sciences are not amendable to a classic experimentaa design. However, correlational and

descriptive research approaches are often an efficient and effective means of collecting data about a problem, with little loss in terms of interpretation and generalization.

In the idealized model of behavioral research, the randomization of subjects is always possible and desirable. In nonexperimental research, however, self selection into comparison groups may occur, when the members of the groups are in their respective groups because they possess the dependent variable in various degrees (Kerlinger, 1986). In this study, the two groups, non registered nurses (generic) and RN-BSN completion students, both possess various needs and learning styles which affect their learning.

The research design utilized in this study was both ex post facto and descriptive in nature. The research was retrospective in that learning needs were examined relative to antecedent factors such as peers, environment structure, and the teaching process. Additionally, a descriptive analysis related to demographic data and the Learning Style Inventory scores was completed.

The possible threats to the internal validity of the design need to be considered; such as the effects of history, selection, maturation, and mortality (Polit, 1989). These issues have been examined in the present study. Both groups of students were given the questionnaire at the same time so that the likelihood of external events occurring concurrently should affect both groups. In order to avoid selection bias,

only upper class junior and senior generic nursing students and RN/BSN completion students were used, providing a more homogenous base between these groups, rather than with freshmen or sophomores. The lower classmen are enrolled in a variety of prerequisites and are not at the same curricular level. Since maturation occurs within the subjects both before and during the course of the study, and since this study is only examining participants once, a potential maturation effect is minimized. Also the issue of "mortality" was minimized due to the collaboration of the investigator and the contact people in encouraging the participants to return the completed questionnaires.

For the purposes of this study, a survey research methodology was utilized. The instruments are two questionnaires which the participants complete in a paper and pencil format. The investigator contacted Dr. P. Beeman, PhD by phone and letter for permission to replicate her instrument. Permission was granted. The BEEMAN questionnaire is a self-report instrument of 73 closed-ended statements. A four point Likert scale is used to discriminate, quantitatively, the attitudes, perceptions, and needs of the participants. The BEEMAN questionnaire concludes with five open-ended questions. If the participants are verbally expressive, open-ended questions provide an opportunity for some subjects, (i.e. those who do not like being confined to

alternatives which do not reflect their respective opinions), to express themselves by way of this format.

The subjects also completed the Kolb's Learning Style Inventory (LSI) instrument. The LSI tool includes twelve rank-order items related to learning or dealing with ideas and daily situations. The participants are asked "to recall some recent situations where you had to learn something new. Rank a 'four' for the sentence ending that describes how you learn best, down to a 'one' for the sentence ending that seems least like the way you learn" (Kolb, 1985).

Scales are often an efficient way to measure characteristics of individuals. Group level and individual comparisons are possible, and they can be evaluated using various statistical procedures. However, at the same time, scales are susceptible to the following response biases (Polit, 1989):

- 1) social desirability - tendency of some people to misrepresent their attitudes by giving answers that are consistent with prevailing social norms
- 2) extreme-response set - some people consistently express their attitude in terms of extreme response alternatives
- 3) acquiescence response set - tendency of some people to agree with statements regardless of their content

In the present study, these biases were minimized in that the BEEMAN tool uses alternating positively and negatively worded statements, as well as ensuring the anonymity of responses.

SAMPLE

The population of this study was a convenience or accidental sample drawn from five generic/BSN completion/component programs in the Chicagoland area. Accidental sampling involves the use of the most readily available persons in a study. In some cases, random sampling is almost possible. Nonprobability sampling is subject to an increased risk of bias, but the risk may be minimized through objectivity and homogeneity. Objectivity was controlled for in that the investigator did not deliberately select the subjects, only the schools. The risk of bias was also minimized with fairly homogenous populations. The two groups were adult learners in nursing with the difference being whether they were generic or RN/BSN completion students.

The sample was limited to the metropolitan area of Chicago to assist in controlling for differences between urban and rural areas. In rural areas, students may be more limited in school choice due to location constraints. On the other hand, the institutions in the metropolitan area are competing for the same individuals. The metropolitan students, acting as consumers, are more able to choose the institution which best fits his/her needs.

In formulating the sample, personal phone calls were made to the Dean of each respective nursing program. The Deans who agreed to participate were assured of anonymity. They were then asked to identify a faculty contact person who would be willing to collaborate with the investigator in distributing the questionnaires. The investigator ascertained the requirements for each program from the contact person. Since all nursing institutions are accredited by the same institution, many of the program requirements will be similar and may influence the answers on Beeman's qualitative data questions.

A cover letter, with copies of the abstract and research instruments, was mailed to each school seeking approval of the study from their respective university and departmental research committees. Even with an additional follow up telephone call, one university never responded. The remaining schools agreed to be part of the sample. The investigator had originally wished to distribute the questionnaires to the students in class to insure a more effective response rate, but all the schools declined the use of class time. The contact person of four of the universities agreed to distribute and collect the questionnaires at a later date.

One school agreed to participate only if the students were allowed to return the completed questionnaires in the mail. Their consent was changed to reflect a deadline date for return of the questionnaires. Only two were returned late

and they were included in the data base. The investigator had been concerned about the mail return rate, but this institution had the greatest percentage returned.

The questionnaires were coded so that the investigator was able to sort the results by schools. The questionnaire packets consisted of a consent form, a form requesting demographic data, the BEEMAN and the Kolb Learning Style Inventory questionnaires. The questionnaires were given to junior and senior generic students and RN/BSN completion students who are now enrolled in nursing courses. Freshmen and sophomores were omitted as they are still completing prerequisites and frequently have not declared a major. Similarly, registered nurses who have recently begun a completion program are usually completing prerequisites were omitted.

The generic and RN students of each program were provided with specific written instructions in the cover letter. The contact person reiterated the instructions as the questionnaires were distributed. The students were requested to complete the questionnaires and return them in the envelope provided. Informed consent was demonstrated by a completed questionnaire. Also each tool could be completed in approximately fifteen minutes.

ANALYSIS OF DATA

When the data by schools and type of student was sorted, a descriptive analysis was completed. Dr. Eddie Sanders, Jr.,

a professor at Chicago State University, in the Department of Management, Marketing, and Information Systems, was consulted for his expertise in designing statistical programs. Frequency distributions were tabulated for the demographic data on the BEEMAN questionnaire. Beeman (1988) has previously placed the 73 items of the scale into six subscales based on "factor loadings." The scales describe the educational environments of various nursing programs. Similarly, a factor analysis was performed on the results of this study. The factors clustered into seven scales. A one way analysis of variance was performed on each of the seven scales. An overall analysis of the six scales among all the programs was also done to determine whether there are any multiple predictors of group differences. Lastly, a one way analysis was performed in which Beeman's original six scales were used as the dependent variable.

The BEEMAN qualitative data was derived from the answers to five open ended questions. The answers were categorized, summarized and tabulated using content analysis. The content was examined for both semantic and feeling tones. The total frequency and the distribution percentage were tabulated. The results of two programs, generic and BSN completion program, among schools were compared for any significant factors.

The data from the Learning Style Inventory (LSI) tool was then analyzed. Mean scores of the students and the frequency in each mode (AE, AC, CE, and RO) were tabulated. Analysis of

variance was performed between the learning styles of the registered nurses and the generic students. Lastly, a correlational coefficient was calculated to determine whether there was any relationship between the BEEMAN and Kolb Learning Style Inventory scales.

The use of factor analysis reduces a large number of items to a limited number of scales. The scales represent subjective perceptions of the educational environments in different baccalaureate nursing programs. The following chapter examines the use of various statistical methods in regards to the results of both tools which may lead to possible strategies particularly useful with the at-risk students.

CHAPTER 4

QUANTITATIVE RESULTS

This descriptive study examined registered nurses and generic nursing students' perceived learning needs and learning styles. The evaluation of learning needs was obtained through the use of the Beeman Educational Environmental Measure for Adult Nurses (BEEMAN), a tool containing 73 variables. Kolb's Learning Style Inventory was used to evaluate whether experience, age, occupation, and amount of schooling have any effect on an individual's learning style.

DESCRIPTIVE DATA

Frequency distributions were tabulated on the demographic data of the BEEMAN questionnaire. A total of 372 questionnaires were given to five baccalaureate institutions which agreed to participate in the study. The response rate of each institution ranged from 71 respondents (43%) to 11 (6.7%) for a total of 165 respondents. Of the total sample, 82.4%, or 136, were generic nursing students and 17.6%, or 29, were RN/BSN completion students. The majority of the students were full-time (127) with the remaining 38 being part-time students. The comparison of the totals of these groups correlates with the populations of the institutions in that

their generic groups are larger. On the other hand, the generic group demonstrated a better return, 36.55% as compared to 30.85% of the RNs, to the questionnaire.

Of the 165 participants, 153, or 92.7%, were female. In comparison to the 2-3% of males in nursing, 12 males, or 7.3%, completed the study. The participants represented four racial groups. The majority of the sample, 103 people or 62.4%, were Caucasian or European-American. Afro-Americans encompassed 25.5% (42 people) of the group. Fifty per cent of those people were from one predominantly Black institution. Asian Americans and Hispanic Americans were also represented with 7.3% (12 people) and 4.8% (8 people), respectively.

The ages of the participants are demonstrated below.

TABLE 1

AGE DISTRIBUTION OF RETURNED RESPONSES

	FREQUENCY	PERCENTAGE
18 - 25 group	98	59.4
26 - 33 group	42	25.5
34 - 41 group	14	8.5
42 - 49 group	9	5.4
50 and over	2	1.2
Total	165	100.0

Even though the majority of the participants are in the 18-25 age group, the 26-33 age group encompasses 25.5% of the total sample. The total in the 26-33 age group correlates with general trends in today's society. The National League for

Nursing surveys reported the age of new graduates has increased from 24.8% in 1982 to 31 in 1990 (News Cap, American Journal of Nursing, 1991).

The marital status and number of children also demonstrated the newer demographic characteristics of the adult student in nursing. In addition to the 104 single participants (63.0%), 51 people, or 30.9% are married. Fifty participants, or 30.0%, have one to eight children. Two people have seven and eight children, respectively. In addition, three of the people have three to five grandchildren. Children and grandchildren are possibly additional stressors in one's quest for a baccalaureate education.

The participants have a variety of educational backgrounds. The largest group, 73 or 44.2%, have only a high school background. Five of the registered nurses graduated from diploma schools of nursing. The remaining 87 people have either junior college or university experience. These figures again demonstrate a change in higher education in that many students do not enter college directly after higher school.

Three additional questions were related to occupation and income. The number of years one worked in another field ranged from 0 to 25 years, with 12.1% working more than ten years. In response to today's economy, many people are entering nursing to insure themselves of a occupation in the future. The number of years of nursing experience ranged from

0 to 30 years. Many nurses have worked a number of years before returning to school. The answers to the qualitative questions demonstrated that some of the registered nurses did not return solely on their own volition. Forty seven people, or 28.5%, of the sample did not answer the question related to income. On the other hand, 53, or 36.4%, reported an income less than \$10,000 and another 25, or 15.1%, have an income less than \$20,000. Many of the students who support themselves or have children must work additional hours to pay educational bills. At the same time, financial aid has been decreasing.

QUANTITATIVE DATA

A factor analysis and a factor transformation matrix were performed resulting in the Kolb and Beeman items clustering into seven scales. Scale 1, contains the following program satisfaction variables.

Table 2

SCALE 1: MEASURES OF GENERAL PROGRAM SATISFACTION (N=31)

ITEM NUMBER	ITEM	FACTOR LOADING
31	The faculty here encourage students to think for themselves.	.68
16	Faculty here make an effort to see me as I really am.	.66
30	Faculty treat me as an individual.	.65
32	The administration at this institution treats students fairly.	.65
12	Faculty here are understanding about my other commitments.	.62
23	Faculty here are supportive of students.	.60

39	Faculty encourage students to be active rather than passive participants.	.59
43	Faculty here are united in their goals for students.	.59
67	Faculty here encourage students to critically assess their program	.58
44	Faculty encourages students to share experiences.	.58
14	Faculty here take into account my level of skills in nursing.	.54
27	Faculty here are motivated to teach students.	.53
18	Faculty here value my prior experience.	.51
50	Faculty encourages independence.	.51
54	This program gives me enough opportunity to challenge courses.	.50
13	Courses here keep students abreast of changes in health care.	.48
26	In this program, students know what to expect.	.48
53	The faculty is large enough to meet my needs.	.48
52	Faculty give me enough time to organize my thoughts.	.47
24	Students here participate in planning their evaluation.	.44
7	My program allows me to plan some of my own learning activities.	.42
72	The faculty-student ratio promotes my learning.	.42
8	My instructors give me adequate time to do my course work.	.42

Of the 31 items in Scale 1, 15 were identical to ones on Beeman's Scale 1. Thirteen of the 15 factors loaded at greater than .40. Items 8, 12, 14, 16, 18, 23, 27, 30, 31, 32, 39, 43, 44, 50, 52, 53, 67, and 72 are related to faculty issues. The great emphasis on faculty issues is also noted in the answers to the qualitative questions.

Items 13 and 54 are related to general program attributes. Item 54, "This program gives me enough

opportunity to challenge courses," demonstrated a .50 factor loading with program attributes. The practice of challenging exams is related to an adult's orientation to learning, but at the same time the increase and ease in which one may challenge an exam leads to program satisfaction. Item 13, "Courses have kept students abreast of changes in health care," is related to the need or value for a baccalaureate in nursing. Items 7, 24, and 26 deal with student issues, another component of program satisfaction.

Eight of the following items on Scale 1 demonstrated a factor loading less than .40:

- 68) This program gives students lots of practical information.
- 38) My program allows me to function independently.
- 45) Classes with registered nurses and generic students are challenging.
- 6) My program is flexible enough to accommodate my personal schedule.
- 69) This school helps students make financial aid arrangements.
- 37) Many courses in this program involve small group discussion.
- 33) This program is conveniently located for me.
- 62) Having registered nurses in my classes gives me self-confidence.

Items 6, 37, and 68 again focus on general program attributes. Items 45 and 62 deal with registered nurses. In the majority of schools in the sample, nurses do not attend classes with generic nursing students after the prerequisites are completed. Items 4 and 69 focus on practical issues, while item 38 is related to self-direction.

Scale 2, "Measures of Self-Direction and Independence," contains 16 items of which five are the same as those on Beeman's Scale 2.

TABLE 3

SCALE 2: MEASURES OF SELF-DIRECTION AND INDEPENDENCE (N=16)

ITEM NUMBER	ITEM	FACTOR LOADING
49	The curriculum is not challenging.	.65
15	In my program, I have to perform skills at a level below my capabilities.	.64
36	Courses within this program have not taught me much practical information.	.59
47	The curriculum is repetitive.	.51
29	Students here are encouraged to plan an individualized course of instruction.	.48
34	I was able to set my own objectives for learning.	.43
59	It would not have mattered to me where I did my BSN.	.40
35	My program allows me to use my own employment setting.	.40

Items 49, 15, 36, and 47 are all negative statements with the highest factor loading. To be able to recognize such characteristics in their programs, these subjects may value self-motivation and independence. On the other hand, if they were not as independent, they would not criticize the system

and accept the philosophy and/or curriculum as it is. In addition these statements are frequently voiced by registered nurses in baccalaureate programs who frequently feel they are relearning information. In contrast, the last four items with a factor loading greater than .40 are more positive and promote an adult learner's independence.

The following eight items resulted in a factor loading of less than .40 for Scale 2:

- 22) Learning labs help students practice their skills.
- 5) I do not feel that my education and my work experience are interchangeable.
- 3) This program requires too much time from me.
- 63) My past experiences do not help me as a student.
- 40) Faculty encourage registered nurses to take challenge exams for credit.
- 25) I feel I already know much of the course content of my baccalaureate program.
- 48) I know more than some students in my program.
- 9) Adult students learn more readily.

The previous eight items relate to independent learning even though they factored lower than the former items. Items 5, 3, 63, 40, 25, and 48 are again negative statements, but the items relate to common problems addressed particularly by registered nurse students who desire more independence in their programs. The items may have ranked higher if the registered nurse sample had been larger. Many nurses feel

their baccalaureate content is repetitious and takes too much of their time. Many of them report difficulties in arranging school and work schedules, and the experiences of each do not necessarily complement each other. In addition, only registered nurses complete challenging exams. Much of this content is again reported in the registered nurse students' qualitative data.

Scale 3 contains the following ten items which focus on the value or need for a baccalaureate in nursing.

TABLE 4

SCALE 3: MEASURES OF A NEED FOR A BACCALAUREATE (N=10)

ITEM NUMBER	ITEM	FACTOR LOADING
2	My baccalaureate education enables me to identify more readily the rationale for actions in my clinical practice.	.68
1	My baccalaureate education enables me to look at the patient differently.	.66
4	A baccalaureate degree from here will make me a more professional nurse.	.63
10	My baccalaureate education gives me information that I could put to use in my nursing practice.	.58
60	Getting a baccalaureate degree in nursing is vital to my job.	.46
17	I can get a better job as a result of my baccalaureate education.	.43

The investigator renamed this category since all the previous items relate to the value and/or need for a baccalaureate in nursing. Items 2, 1, 4, and 10 reflect adult learning theory

content in that the subjects state that theoretical content is important. Such content will assist them in being more professional nurses where the emphasis is more on rationales than practical abilities. Items 60 and 17 reflect the nurses who are obtaining a baccalaureate, not necessarily for the knowledge, but for employment or increased financial security.

Another four items clustered under this factor but demonstrated a factor loading of less than .40.

28) In this program, students know what to expect.

61) I would recommend this program to my colleagues.

11) Faculty vary their approaches in presenting content.

42) In my program, other students have backgrounds similar to mine.

These items may have factored lower since they do not all emphasize the need for a baccalaureate in nursing. Items 28, 61, and 42 deal more with program attributes while item 11 is related to instructional strategies (a component of self-direction or independence). On the other hand a student who values her particular baccalaureate education may have picked a program with students similar to her and in turn recommend it to others. In addition, the adult learner who returns to school frequently seeks and values different teaching strategies.

Seven items, of which six were greater than .40, factor loaded into Scale 4.

TABLE 5

SCALE 4: MEASURES OF ENVIRONMENTAL SUPPORT (N=7)

ITEM NUMBER	ITEM	FACTOR LOADING
64	My fellow students appreciate my academic endeavors.	.70
51	I get intellectual support from my fellow students.	.68
65	In this program, students learn better in a group.	.66
46	Other support my independent actions.	.64
57	In my program, other students challenge me.	.44
19	In this program, I get support from other students.	.42

Four of the six items on this scale are identical to those on Beeman's Environmental Support scale. The remaining items, 64 and 57, both focus on support from peers in the form of a support group or challenge. One item, 21, "My program encourages support groups among students," loaded at less than .40, but it was also an item on Beeman's Environmental Support scale.

Scale 5 include the data from the Kolb's Learning Style Inventory. All four learning styles factor loaded together with the following results.

TABLE 6

SCALE 5

LEARNING STYLES	FACTOR LOADING
AE (Active Experimentation)	.82
AC (Abstract Conceptualization)	.82
CE (Concrete Experience)	.80
RO (Reflective Observation)	.79

The results are not only on the same scale, but they are also quite similar. There are no significant differences in the learning styles of the generic or RN/BSN completion students. A further analysis of these results will be done after the completion of the BEEMAN analysis.

Scale 6 includes four items which promote learning.

Table 7

SCALE 6: MEASURES ENHANCING AN ORIENTATION TO LEARNING (N=4)

ITEM NUMBER	ITEM	FACTOR LOADING
70	I work better with support from other students.	.80
71	Instructional strategies used in this program are appropriate for my level of knowledge.	.80
73	Variety among faculty allows me to meet my needs.	.47
66	The administration here treats all nursing students the same.	.43

Support from other students and instructional strategies again rank significantly high at .80. Most adult learners prefer methods of teaching other than lecture. Support from peers and various instructional strategies may lead to small group discussions, seminars, or independent study groups. Such diversity related to learning is more likely with a variety of faculty members. Item 66 may have loaded low, as it is also related to program attributes.

Five items in Scale 7 relate to the issue of practicality. The table is found on the following page.

TABLE 8

SCALE 7: MEASURES OF PRACTICALITY (N=5)

ITEM NUMBER	ITEM	FACTOR LOADING
58	For me, this program is affordable.	.63
20	This program is an inexpensive one.	.51
55	I am getting my money's worth from this program.	.50
56	My baccalaureate program is very satisfying to me.	.46

Items 58 and 20 focus on financial issues with similar factor loadings. Items 55 and 56 demonstrate that the concepts of "money's worth" or "program satisfaction" may relate to concrete practical rather than value-laden issues. This concept of "money's worth" is again noted in the qualitative question in regards to "what made you decide to get a baccalaureate degree in nursing?" Again some of the answers refer to a value in furthering their education, while others desire better economic security. Item 41, "It was difficult for me to transfer credits into this baccalaureate program" factor loaded at less than .40, but does relate to the issue of practicality. If a student is not able to transfer credits, she/he will need to enroll in additional courses to complete her baccalaureate education. Such courses will consume additional time and money, both of which are significant and practical issues in particular to the registered nurse students. Recently, the issue has been noted more frequently among generic students who have begun their college experience at junior colleges.

A one-way analysis of variance was also computed on each of the seven scales. The two types of programs, generic and RN/BSN completion, were compared to determine any significant results. The following tables represent the results.

TABLE 9

ONE-WAY ANALYSIS OF SCALE 1

MEASURES OF GENERAL PROGRAM SATISFACTION

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	P
BETWEEN	1	.3769	.3769	.3755	.54
WITHIN	163	163.62	1.0038		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	.0221	1.0087
2	29	-.1035	.9685

No significant differences were noted between the groups related to program attributes. Both groups expressed similar faculty and program issues. Some of these issues were further discussed in the qualitative data. Whether or not a statistical difference was found related to these issues, it is significant that such negative issues were voiced in both groups in the quantitative as well as qualitative section.

TABLE 10
ONE WAY ANALYSIS OF SCALE 2
MEASURES OF SELF-DIRECTION AND LEARNING

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	P
BETWEEN	1	4.0368	4.0368	4.1134	.04
WITHIN	163	159.9632	.9814		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	.0722	.9943
2	29	-.3387	.9728

Significant differences between the two groups at $p=.04$ were exhibited on Scale 2. The four items in Scale 2 all relate to common curricula complaints given by registered nurse students. The courses are "not challenging, repetitive, and do not offer much practical information." These results are further supported by adult learning theory.

TABLE 11
ONE WAY ANALYSIS OF SCALE 3
MEASURES OF A NEED FOR A BACCALAUREATE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	P
BETWEEN	1	21.4660	21.4660	24.5482	.0000
WITHIN	163	142.5340	.8744		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	-.1666	.9872
2	29	.7811	.6258

Significant differences were found (p less than .01) between the two groups. Having had the opportunity to practice their nursing skills, some registered nurses return to school for the theory and value of the education itself. Some nurses stated the baccalaureate was "the first step towards a Master's," Thus indicating a quest for further knowledge. Other nurses view the baccalaureate as a necessary tool for job advancement. On the other hand, many generic students view the baccalaureate as a means to a nursing position. Many complain about the need for the great number of liberal arts courses.

TABLE 12

ONE WAY ANALYSIS OF SCALE 4

MEASURES OF ENVIRONMENTAL SUPPORT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	P
BETWEEN	1	.2978	.2978	.2965	.5868
WITHIN	163	163.7022	1.0043		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	-.0196	.8650
2	29	.0920	1.4963

No significant difference was found between the two groups in regard to environmental support. The items on this scale all related to support from other students, either individually or group learning. Both generic and RN/BSN completion students have made references to the desire for small groups or small faculty/student ratios. These small groups are particularly useful for the at-risk student, whether the student is academically at risk or just an adult returning to school. Nursing students have also become accustomed to clinical groups of ten students or less.

TABLE 13

ONE WAY ANALYSIS OF SCALE 5

LEARNING STYLES

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	P
BETWEEN	1	.2307	.2307	.2296	.6325
WITHIN	163	163.7693	1.0047		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	.0173	1.0939
2	29	-.0810	.2817

Scale 5 demonstrated that there was no significant difference related to learning style among the groups. The frequencies of learners of each learning style are noted in table 14.

TABLE 14
TOTAL FREQUENCIES OF LEARNING STYLES

LEARNING STYLES	RN		GENERIC STUDENTS	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Assimilators	12	44.44%	55	43.30%
Accommodators	8	29.62%	21	16.53%
Convergers	3	11.11%	24	18.89%
Divergers	4	15.81%	27	21.25%

Eleven responses were completed incorrectly and discarded. No differences were found between the two groups, but the major learning style in both groups is assimilator. Another 29.62% of the RN sample are accommodators, whereas 21.25% of the generic sample are divergers. In contrast, Kolb found nurses to be accommodators or divergers. Physicians have also been found in all learning styles (1984). Academic medical jobs dealing with research or teaching tend to attract assimilators. In addition, primary or family practitioners tend to be accommodators, while medical specialists frequently are convergers.

The accommodative learning style focuses on acting skills, that is, committing oneself to objectives, seeking and exploiting opportunities, influencing and leading others, and dealing with people. The divergent style is associated with

valuing skills, such as being sensitive to people's feelings and values, listening with an open mind, and gathering information. Assimilation is related to thinking competencies; for example, organizing information, building conceptual models, testing theories and ideas, designing experiments, and analyzing quantitative data. Lastly, the convergent style is associated with decision skills: experimenting with new ideas, choosing the best solution to problems, setting goals, and making decisions (Kolb, 1984).

The large number of assimilators in this sample may be related to the changing focus in nursing in recent years. Nursing is evolving from an emphasis on medical diagnoses to nursing diagnoses developed from conceptual bases. The nursing field has been continually developing conceptual models leading to the dilemma of whether nursing should be based on one or more theoretical frameworks. Many of the nursing subspecialties have developed their own models. Historically, the diploma programs have emphasized the technical nursing skills, whereas the baccalaureate programs have focused on theoretical content. Baccalaureate programs have now begun emphasizing the concept of "critical thinking." Baccalaureate students also complete research courses where the importance of nursing research on the progress of health care is emphasized. In addition, the number of research assistants in nursing has significantly increased in recent years.

Similar to Kolb's results, 8 (29.62%) of the registered nurses were accommodators. These nurses have had more opportunity to recognize and become competent in their "acting skills." Their occupation roles provide them with opportunities to lead others and deal with clients and/or staff. On the other hand, the accommodators were the smallest generic group (16.53%). Many generic nursing students do not obtain nursing positions until they have completed their junior year. The short time in nursing clinicals may not provide sufficient opportunities to generic students to rate themselves as accommodators. Very few students feel they can "influence or lead others."

In contrast to the registered nurses, the divergers were the second largest generic group (27 or 21.25%). The focus on divergers, "on being sensitive to people and gathering information," is emphasized in the assessment phase of the nursing process, an integral part of any nursing curriculum. The nursing process is also used each day in the registered nurses' occupational roles, but the process may be of a more subconscious nature, particularly if the nurse is not satisfied with her/his position.

Learning style is more than a single score on a scale. The development of a learning style is an important component. Five forces, along a continuum from previous experiences to current circumstances, have an effect on individual learning styles (Kolb, 1984). Past experiences and educational

preparation influence our behavior in nearly all situations. As one continues through life, environmental stressors related to career choice, current job, and specific tasks exert a more situation-specific effect on an individual's learning style. Adaptation is needed if an optimal effect of these forces is to take place.

TABLE 15

ONE WAY ANALYSIS OF SCALE 6

MEASURES ENHANCING AN ORIENTATION TO LEARNING

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	p
BETWEEN	1	.7516	.7516	.7505	.3876
WITHIN	163	163.2484	1.0015		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	.0312	.9637
2	29	-.1462	1.1630

No significant differences related to their orientation to learning were found between the two groups. On the other hand, based on the result of the factor loading, "Support from other students" and "instructional strategies" appear important to both groups. Adult learners frequently prefer teaching styles different than the lecture method commonly used with the traditional students.

TABLE 16
ONE WAY ANALYSIS OF SCALE 7
MEASURES OF PRACTICALITY

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	p
BETWEEN	1	.7216	.7216	.7204	.3973
WITHIN	163	163.2784	1.0017		
TOTAL	164	164.0			

GROUP	COUNT	MEAN	SD
1	136	.0305	1.0011
2	29	-.1432	.9996

The two groups did not differ in their opinions of the affordability, money's worth, or satisfaction with the program. Tuition costs are increasing while the types and amounts of financial assistance are decreasing. Many registered nurses only have tuition reimbursement after the satisfactory completion of the course. This process may be an additional burden to their other financial concerns.

The government has also reduced the amounts of the loans and grants of most generic students.

Eigen values were also obtained for the factors in this study. Twenty-three factors had eigen values greater than one, but the investigator limited the study to seven factors as part of her replication of Beeman's study. Table 17 demonstrates the seven eigen values.

TABLE 17

EIGEN VALUES FOR THE FACTORS

FACTOR	EIGEN VALUE	PERCENTAGE OF VARIANCE	CUMMULATIVE VARIANCE
1	11.69573	15.2	15.2
2	4.67835	6.1	21.3
3	3.61146	4.7	26.0
4	2.90258	3.8	29.7
5	2.60128	3.4	33.1
6	2.49549	3.2	36.3
7	2.41759	3.1	39.5

Factor 1, or Scale 1, demonstrated the greatest percentage of variance among its items. In contrast, Scale 1 did not exhibit any significant differences between the two groups. Program attributes appear to be important to both the generic and the registered nurse students. On the other hand, factors 2 and 3 demonstrated less variance among the items but significant differences were found between the groups as was discussed earlier.

Lastly, a one-way analysis was done between the investigator's results and Dr. Beeman's six scales as she developed them. None of Beeman's scales proved to be statistically significant, whereas two of the scales in the present study were significant ($p < .05$). Table 18 demonstrates the results using Beeman's scales.

TABLE 18
ONE WAY ANALYSES OF BEEMAN'S SCALES

SCALE 1					
SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F	p
BETWEEN	1	121.7466	121.7466	1.8700	.1734
WITHIN	163	10612.0352	65.1045		
TOTAL	164	10733.7818			
SCALE 2					
BETWEEN	1	16.1512	16.1512	.5077	.4772
WITHIN	163	5185.8245	31.8149		
TOTAL	164	5201.9758			
SCALE 3					
BETWEEN	1	1.0358	1.0358	.1027	.7490
WITHIN	163	1643.9582	10.0856		
TOTAL	164	1644.9939			
SCALE 4					
BETWEEN	1	2.0393	2.0393	.2332	.6298
WITHIN	163	1425.2698	8.7440		
TOTAL	164	1427.3091			
SCALE 5					
BETWEEN	1	.1623	.1623	.0286	.8659
WITHIN	163	924.1407	5.6696		
TOTAL	164	924.3030			
SCALE 6					
BETWEEN	1	1.3636	1.3636	.3319	.5654

WITHIN	163	669.7637	4.1090
TOTAL	164	671.1273	

The differences in the aforementioned results appear to be related more to the differences in factor loadings than in the demographic data. In Dr. Beeman's study, 42% of the nurses in baccalaureate completion programs were over 35 years of age, whereas 61% of the generic student population was less than 25 years. In the present study, 40% of the total sample were over 25 years of age. More specifically, 37, or 27.2%, of the generic students and 28, or 96.5%, of the registered nurses were over 25. In addition, 90% of the generic students in Beeman's study attended full-time, whereas only 77% of the total sample of the present study attend full-time. The present results, a reflection of the growing trends in education, influence the needs and learning styles of both generic nursing students and registered nurse students. In addition, it is possible that commonalities related to needs are present in all age groups.

In summary, statistical significance was demonstrated on Scales 2 and 3 of the BEEMAN scales. Scale 2 relates to self-direction and learning. The common complaints of registered nurses indicated that courses are not challenging or repetitive. Other nurses have stated that they were not allowed to use their own practical knowledge and/or experiences as much as they would have desired. Scale 3 documents the rationales in the literature for the need for a

baccalaureate in nursing. The four items with the greatest factor loading reflect adult learning theory in that the participants state theoretical content and professionalism are important. No significant differences related to learning styles were found between the two groups.

CHAPTER 5
 QUALITATIVE RESULTS FROM THE
 BEEMAN QUESTIONNAIRE

Qualitative data were obtained from five questions on the Beeman Educational Environmental Measure for Adult Nurses (BEEMAN). The questionnaires were sorted as to generic students or registered nurses for each school. The answers were then analyzed for any similarities.

The frequencies of responses to question one, "Why did you pick this particular baccalaureate program" are demonstrated in Table 19.

TABLE 19

WHY DID YOU PICK THIS PARTICULAR BACCALAUREATE PROGRAM		
RESPONSES	GENERICS (130)	RNs (20)
1. Reputation (Recommendation)	63 (48.46%)	5 (25%)
2. Location	47 (36.15%)	7 (35%)
3. Cost	5 (3.84%)	6 (30%)
4. Class Size	4 (3.07%)	
5. Faculty/student Ratio	1 (.76%)	
6. Credit Acceptance	2 (1.53%)	1 (5.0%)
7. State Board	3 (2.30%)	

Pass Rate

8. Affiliation	4 (3.07%)	
9. Curriculum	1 (.76%)	
10. Week-end Program		1 (5.0%)

The two most common answers were found in each school of the sample. Sixty-three (48.46%) generic students, as compared to five (25%) registered nurse (RN) students, chose their respective baccalaureate program based on "reputation" and/or "recommendation." The recommendation was commonly from a relative or alumnus. The importance of location was noted by forty-seven (36.15%) generic and seven (35%) RN students. "Location" is significant as all the programs are predominately commuter programs. Only two programs have dormitory facilities.

Other answers for choosing a particular program included "cost" (3.84%), "class size" (3.07%), and "state board pass rate" (2.30%), and "affiliation" (3.07%). The generic students do not appear to place as much importance on "state board pass rate" as faculty and the National League of Nursing. The sample included two Catholic and one Christian school which are reflected in the "affiliation" answer. Students are now also considering "class size and "faculty/student ratio."

In contrast, cost was as important to the RN students (30%) as location. One would have thought credit acceptance would have been more significant for the RNs. An increase in

accepted credits relates to a decrease in the number of required courses thereby decreasing the total amount of tuition. On the other hand, many RNs have tuition reimbursement from their employer. One university in the sample offers employees at their medical center free tuition.

The second question was, "Is it satisfying for you?", and the rationales for their answers. Table 20 displays the answers to this question.

TABLE 20

IS IT SATISFYING FOR YOU?

GENERICICS (137)		RNs (27)	
YES	NO	YES	NO
128 (93.43%)	9 (6.56%)	23 (85.18%)	4 (14.81%)

The majority of the sample did not offer a rationale for their answer. Ten of the twenty two generic students (45.45%) stated the "program was challenging." Another six (27.27%) wrote they "were learning a lot and increasing their knowledge basis." "Location," "small student-faculty ratio," and "caring environment" were also mentioned.

Five of the nine unsatisfied generic students explained their negative feelings. The predominant answer (60%) was displeasure with faculty members. Answers included "Faculty did not care or understand." "They don't think of the individual." Other negative rationales included "not feeling prepared" and "too much content." The latter two answers

express very common feelings among new graduates. The possibility of non-caring faculty members is more significant.

The third question asked "What made you decide to get a baccalaureate degree in nursing?" As with the previous questions, only forty seven generic students answered this question. The answers are reflected in the following table.

TABLE 21

WHAT MADE YOU DECIDE TO GET A
BACCALAUREATE DEGREE IN NURSING?

RESPONSES	GENERICS (47)	RNs (9)
1. Better job opportunities	17 (36.17%)	6 (66.66%)
2. Life-long learning	12 (25.53%)	
3. Desire for MSN	9 (19.15%)	1 (11.11%)
4. Increase in salary	7 (14.89%)	
5. BSN - 1st choice	7 (14.89%)	
6. Required soon	4 (8.51%)	2 (22.22%)

The most common answer related to better job opportunities (36.17%). Twelve (25.53%) participants wrote similar answers such as to "be more educated," "more professional," "a well-rounded education," and "to complete my education." Nine (19.15%) participants specifically stated a "desire for a MSN later." All of the previous educational statements related to the concept of life-long learning. The Bachelor of Science in Nursing (BSN) was the "first choice" for 7 (14.89%)

participants. The possibility of an "increase in salary" influenced the decision of another seven students.

Of the twenty nine registered nurses in this study, nine (31.03%) responded to this question. Similar to the generic students, the most common answer (66.66%) among the registered nurses was "better job opportunities or advancement." The remaining answers for a baccalaureate degree were "required" and "want a MSN." In contrast to adult learning theory, the concept of life-long learning was not as predominant as with the generic students. One wonders if today's society has influenced the answer to this question. The generic students, particularly the young ones, may not have had the opportunity to work in the "real world." Having worked for a few years, many are now pursuing increases in salary and better opportunities as a response to the economic recession.

The fourth question, "If you could, how would you change your baccalaureate degree program to make it a more satisfying experience," assisted the investigator in obtaining information on rationales for some of the negative answers in the previous questions. Table 22 demonstrates commonalities for possible suggestions offered by the generic students.

TABLE 22

HOW WOULD YOU CHANGE YOUR BACCALAUREATE PROGRAM

GENERIC STUDENTS (43)

	FREQUENCY	PERCENTAGE
1. More clinical experience	13	30.23%
2. Faculty issues	13	30.23%
3. More focus on NCLEX	4	9.30%
4. Increased course time	3	6.97%
5. Less prerequisites	3	6.97%
6. Less paperwork	2	4.65%
7. Less tuition	2	4.65%
8. Required course offered twice a year	2	4.65%
9. More information on test taking	1	2.32%

The generic students' answers fell into predominately two areas. Thirteen of forty-three (30.23%) students suggested an increase in clinical experience. The majority of nursing students spend thirteen hours a week in the clinical area. Many students have attempted to increase their experience with a part-time job in the nursing field. Adding more clinical time is difficult due to the time constraints of the liberal arts courses. Many health care institutions have addressed this issue by instituting longer orientation periods and preceptor programs for new graduates.

More significant to the educational environment is the number of nursing faculty concerns (30.23%). Such concerns were noted by participants at each school in the sample. The nursing profession emphasizes "caring" and psychosocial issues in its curriculums. Yet, thirteen students wrote about faculty who "need to be more caring," "more fair and understanding about other cultures," and "more supportive." "poor faculty-student communication" and "more minority faculty" were also documented. Such issues have been recognized in the nursing field as common barriers to the teaching-learning process. Faculty members and students need to try to understand themselves before they can be successful in working relationships. The nursing profession has also recognized the importance of cultural diversity in that transcultural nursing is now a specialty area and additional minority faculty members are being recruited.

Another four students (9.30%) desired an increased focus on NCLEX (National Council Licensure Examination) material. The investigator has frequently been asked whether a "certain topic and/or question will be on the test." As an educator, this is somewhat disconcerting. Learning should be broad rather than focused on a particular test. On the other hand, an entry level job opportunity is not permissible until one achieves a satisfactory result on the NCLEX licensure examination. The remaining suggestions were related to course work. The students also suggested a decrease in the number of

prerequisite courses and a decrease in paper work, but an increase in the offerings of required courses and the amount of course time.

The registered nurse students, on the other hand, discussed different concerns as demonstrated in table 23.

TABLE 23

HOW WOULD YOU CHANGE YOUR BACCALAUREATE PROGRAM

REGISTERED NURSES (14)

	FREQUENCY	PERCENTAGE
1. Decreased clinical time	4	28.57%
2. Inflexible programs	3	21.43%
3. Acceptance of more credits	3	21.43%
4. Decreased prerequisites	3	21.43%
5. More concern for RNs	1	7.14%

In contrast to the generic students, the registered nurse students emphasized decreasing college preparation time. Their answers included decreasing courses and clinical time in addition to the acceptance of additional credits or life experiences. One registered nurse participant returned the questionnaire a week late with a long explanation attached. She stated that the registered nurse is "under undue stress. I couldn't look at this until the stress of the semester was over. No one understands how hard it is to juggle work, family, and school. Staff members get mad at me for asking for particular days off. You need a significant other. If I weren't so far, I don't know if I would finish." The

registered nurse students may need a support group at their respective institutions to assist them with adapting to the new stressors. In addition, for many of the registered nurse students, the completion of the baccalaureate program is occurring after a long absence from the school environment.

Question five, What advice about baccalaureate programs would you give fellow registered nurses seeking a degree, was answered by the RN population. Table 24 demonstrates the nurses' responses.

TABLE 24

WHAT ADVICE WOULD YOU GIVE FELLOW RNS?

	FREQUENCY	PERCENTAGE
1. CLEP out of as much as possible	5	27.78%
2. Week-end program	4	22.22%
3. Flexibility in program	3	16.67%
4. Decrease clinical time	2	11.11%
5. Decrease working hours	2	11.11%
6. More prerequisite credit	1	5.56%
7. Apply for grants	1	5.56%

Registered nurse students "clep out" or take challenging examinations related to fundamentals in medical-surgical nursing, psychiatric, and obstetric/pediatric nursing. The students then take upper level medical-surgical and community health nursing at their respective institution. Many have

complained about the inability to challenge the upper level medical-surgical course. Similar to question four, the registered nurses wish to complete the baccalaureate degree in a shorter time. "Week-end programs" and "flexibility" relate to conflicts in their academic and working schedules. One school in the sample does have a week-end program, but many hospital nurses work at least alternating week-ends. On the other hand, the student's employer needs to be flexible if the employer's and the profession's goal is to increase the number of baccalaureate prepared nurses.

Qualitative data were obtained from five open-ended questions on the BEEMAN questionnaire. Frequency of responses for both groups of students were tabulated for each question. Results were then analyzed for differences between the registered nurses and the generic nursing students.

The rationales for choosing a particular baccalaureate program were similar for both groups. "Reputation and/or recommendation" and "location" were the most frequent answers. Most of the participants responded positively to satisfaction with their respective programs. The predominant rationale for responding negatively related to displeasure with faculty members. In response to rationales for obtaining a baccalaureate degree, the most common answer among the generic students related to "better job opportunities." Another 25% of the generic students discussed the importance of life-long learning. In contrast to the generic nursing students, the

registered nurses focused on "better job opportunities," "advancement," and the "BSN is required." "More clinical experience" and "student/faculty issues" were the predominant answers given by the generic students for possible changes in their respective baccalaureate programs. On the other hand, the registered nurses desire a decrease in college preparation time. Week-end programs were also suggested by the registered nurses. The next chapter will further discuss the results of this study and its implications for nursing education and clinical practice in the future.

CHAPTER 6

DISCUSSION

The need for a baccalaureate degree in nursing has been promoted by higher acuity levels among clients and shorter hospital stays. At the same time, there is disagreement among the members of the profession of the need for a baccalaureate degree as the minimum educational requirement for professional nurse licensure. The disagreement remains, and the Illinois Nurse Practice Act of 1987 passed with no changes in the educational requirement. Such a division among the members may cause anger, frustration and a decrease in motivation among other members contemplating a return to school.

The increasing need for a baccalaureate degree is further compounded by the increase in non-traditional students with a wide range of backgrounds and abilities. The non traditional student is frequently between the ages of 26-35, working full-time, has a spouse and/or children, and brings a variety of experiences to the educational setting. These students have frequently voiced inadequacies in their programs, but have we inquired about their particular needs? Is a different type of educational setting more appropriate for the non-traditional student?

The purpose of this study was to compare the perceived needs and learning styles of RN/BSN completion and generic nursing students. The participants completed the Beeman Educational Environmental Measure for Adult Nurses and Kolb's Learning Style Inventory tool. The questionnaires are based on the theoretical framework of Knowles' adult learning theory.

A factor analysis was conducted on the Beeman items resulting in seven scales. A one-way analysis of variance was then performed on each scale with significant results noted on two scales. Significant differences were found at $p=.04$ on Scale 2, "Measures of Self-Direction and Learning." The four items with the highest factor loading are all negative statements. Registered nurses have frequently reported that the "curriculum is not challenging" or "is repetitive," and they "have to perform skills at a level below their capabilities." "Many registered nurses, particularly those with many years of medical-surgical experience, view the clinical component as repetitive. In addition, the theoretical content will be less likely to be challenging if the registered nurses, as frequently happens, are offered the same content as the generic students. Other items on the scale demonstrated a factor loading less than 40% but address similar problems of registered nurses. In examining the results, some of the questions related to nurses were omitted by the generic students. These omissions combined with the

small registered nurses sample may have had an effect on the lower factor loading of these items.

Significant results at $p < .01$ were also found on Scale 3, "Measures of a Need for a Baccalaureate." Six items demonstrated a factor loading greater than 40%. The four highest factor loading items (.68 - .58 values) all refer to rationales documented in the literature for obtaining a baccalaureate degree. The initial attempt to upgrade the educational requirement of the Illinois Nurse Practice Act was made in 1987. The proposal included the concept that "the professional nurse shall be required to hold a baccalaureate degree in nursing (Velsor- Friedrich, 1990). In addition, professional socialization, the formation and internalization of a professional identity, is a critical issue in nursing. More specifically, professional socialization is the process in which the content of the professional role (skills and knowledge) is learned and the values, attitudes, and goals are internalized (Lynn, 1989).

The qualitative data on Beeman's questionnaire documents some recent trends in nursing. "Reputation" and "location" were the two main reasons for choosing a particular baccalaureate program. "Reputation" is more important in a metropolitan area where students have more choices. "Location" may become a greater issue if the present economic situation continues.

The majority of the participants were satisfied with their program. The predominant negative answer related to faculty members who "don't care or understand." "Non-caring faculty are a concern particularly in a profession which promotes "caring" as a curriculum strand. Any such allegation should be investigated. On the other hand, the faculty issue was not fully explained. Were the students' feelings related to the grade given by that particular faculty member? At the same time, the issue did occur in the answers of two qualitative questions from each school in the study.

In contrast to adult learning, the most common reason given by both groups for obtaining a baccalaureate degree was "better job opportunities." But twelve generic students stated they wanted "to be more educated," "more professional" or have a "well-rounded education." There may be more evidence of professional socialization (life-long learning) among the generic students, because as novices they see the faculty as the authority on the subject. The less experienced generic student is more receptive to role changes. On the other hand, registered nurses frequently return to school with anger and frustration. In addition, they have already been socialized to some degree by their previous education and clinical practices. But does socialization end at graduation? Does it possibly continue to change during one's first few years of practice after graduation?

In response to "how would you change your baccalaureate program," 30% of the generic students desire an increase in clinical time, while another 30% voiced concerns with faculty. Novices frequently desire additional clinical experience in their fields. The faculty issues related to being "more fair and understanding about other cultures, poor faculty/student communication, and more supportive." In contrast, the registered nurses desire less clinical time and fewer prerequisites. The nurses, though, did voice similar faculty difficulties. A question remains whether the nurses desire the decreases in the curriculum pattern because they actually know the material through the association with their previous experiences, or are they frustrated as a whole with the concept of furthering their education?

Advice given to other registered nurses contemplating a return to school related to both program attributes and personal issues. Does the student's potential program offer flexibility, a week-end option and acceptance of a maximum number of prerequisite courses? Is the student able to decrease any of her/his stress through reduction of working hours?

No significant differences between the two groups were noted in learning styles. The major learning style in both groups is assimilator. Another 29.62% of the RN sample are accommodators, whereas 21.25% of the generic students are divergers. The question remains of what changes should the

nursing profession, particularly faculty members, make to assist students in meeting their needs and goals for graduation and beyond?

IMPLICATIONS OF THIS STUDY

The demographic data from the Beeman questionnaire document the growing trend in the educational system. Similar to the results in the literature, 40% of the participants are over age 25, 30.9% are married, and 30% have children. Three participants even have grandchildren. These data alone may be stressors to the students' learning whether or not their SAT scores or GPA are below average. If the students are assisted in meeting these stressors, a more optimal foundation may be possible for learning. Basic needs must be met before moving onward.

As the educational institutions have come to realize that these students are more the norm than the exception, various activities have been instituted. Some institutions, as do two of the schools in the study, now have child-care facilities. One institution has instituted a Family Recognition Night each year. At that time, the faculty not only praise the family members as a support system but also attempt to explain to the family the stress on the student of returning to school.

Most institutions have developed freshmen orientation activities. But possibly the institutions need to develop an orientation activity or course in particular for the older student. The majority of the enrollment growth in the 1980s

were women over 25. By 1988, 54% of the total enrollment were women. In addition by the year 2000, 19.5% of students in higher education will be 35 or over and 20.7% will be 25-34 (Pew, 1991). Specific information related to education needs to be ascertained from these students. Has the older student attended any college or attended years ago as a traditional student? Do the older students, particularly those over 35, feel comfortable with the younger students? One institution in the study has developed a freshman course with such content as time management, study skills, and use of the library. Another institution has initiated a summer bridge program for the "exceptional but underprepared students." Such activities should be instituted to a greater degree in other institutions. A greater problem may be to convince the at-risk students that these special courses or programs are not a punishment for them. Frequently, these students have made such statements as "why do I have to attend an additional three hours of class a week" or "do I need to come if I pass my courses?" Many of them see the courses as more review courses for specific subjects than general courses with information that can be used in any field of study.

Another difficulty for the non-traditional students is the length of time needed to complete the program requirements. According to the literature, the average completion time is eleven years (Baj, 1985). In addition, they frequently have had less than an optimal secondary

education. Is it possible to offer pre-tests in the science courses in order to assess the students' knowledge base? Could the courses then be taught at different levels and still accomplish the course objectives? Graduate students may possibly use small group discussions to assist the students with the theoretical content. Small group discussion is preferred by most adult students, as it allows for more questions and fosters independent learning.

Some schools have also instituted tutors or peer support groups. This method assists both the tutor and the members. The tutor not only has an opportunity to review the content being presented, but the sessions will also increase her/his self-concept. The tutor is demonstrating self-direction. On the other hand, the students appear to like the support groups, as items 51, "I get intellectual support from my fellow students," and 65, "students learn better in a group," factor loaded at .68 and .66 respectively. It may also be more possible to match learning styles in small groups and match a tutor with similar students. A congruent teaching/learning style is more important in a small group where more active participation by all members is necessary.

Activities should also be instituted to assist with the discrepancies noted on the two Beeman scales demonstrating significance. Items on Scale 2 relate to self-direction and independence, but frequently our curricula impede independence. Does a registered nurse, with years of

medical/surgical intensive care experience, need to take a medical/surgical clinical only because "it is required?" Could the student take an equally intense clinical but in another area? The registered nurses also complete a public health course. Again, instead of completing basic home visits, could faculty encourage the students to work with the homeless or battered women in a shelter or AIDS clients in a hospice program? Physical assessment and leadership skills would still be learned but in a more independent and variant manner. The registered nurses have already proven they know the basics in passing the licensure examination. Placing the students in various health settings may also stimulate a possible research question, a component of life-long learning. The new health settings would be more challenging, less repetitive, and offer new practical knowledge which in turn may decrease the nurses' negativism about their programs. This negativism was demonstrated in factor loadings, ranging from .65 to .51, of the first four items in Scale 2. Independent studies or workshops are also possible options for partial fulfillment of course requirements. On the other hand, faculty should not assume all nurses want a different curriculum. An inquiry at the beginning of the semester will assist the faculty with clinical placements.

The greater challenge in instituting change in the clinical settings is agreement from faculty members. Change is always difficult, particularly when faculty have become

comfortable with their material and clinical setting. But the question remains for whose benefit is the teaching directed toward? Learning style may also be related to the clinical setting. The nurse who is an assimilator, focusing on thinking competencies, may prefer a unique setting where a new program is evolving. The nurse may wish to observe the administrative component of the program or compare the program to another for its differences. Are the differences acceptable for quality client care? On the other hand, the nurse who is an accommodator, focusing on dealing with people, may enjoy direct work with the clients.

Scale 3 related to "measures of a need for a baccalaureate. The first four items, with factor loadings ranging from .68 to .58, document rationales in the literature for obtaining a baccalaureate in nursing. The registered nurses bring a variety of clinical experiences with them. The baccalaureate offers them the theoretical content for these actions or experiences. The students verify this in the first item on the scale, "My baccalaureate education enables me to identify more readily the rationale for actions in my clinical practice." In addition, the following item states "my baccalaureate education enables me to look at the patient differently." These items relate more to the value of education or learning than the items which state "the degree is vital to my job" or "I can get a better job."

The generic students, in contrast, have not had the opportunities to compare experiences in clinical practice. At this moment in time, many of them are more interested in the greater salaries and job opportunities related to a baccalaureate degree. For some students, they are the first generation in their families to attend college. For them, there is value in obtaining the baccalaureate degree, but it is not necessarily related to clinical practice. In the qualitative questions, though, some generic students did state the baccalaureate degree was the initial step in obtaining a Master's (a component of life-long learning). At the same time, the expectations of some generic students are not always accurate.

No statistically significant differences between the two groups were found related to learning style. But at the same time, the frequencies of each learning style should be noted for their possible effect on teaching. The largest group in both groups were assimilators who prefer thinking abilities. The second largest group of generic students (21.25%) were divergers, whereas registered nurses were accommodators (29.62%). The results also differed from Kolb's related to nurses, but were similar to some of his results with physicians.

Two questions related to learning style remain.

- 1) Why were the results different?

- 2) Should a learning style of a particular group affect the type of teaching given to the group?

The results of this study may be related to a number of factors. The population of the generic nursing student sample and the registered nurse sample were not equal. In addition, the development of a learning style is affected by one's placement on life's continuum. Therefore, is age a factor related to learning style? Since over 40% of the sample were over the age of 25, many of the generic nursing students as well as the registered nurses, have past experiences, whether nursing or not, which affect their learning style. On the other hand, Kolb's studies, done in the 1970's and 1980's, focused more on traditional students. Some of the previous education in both groups may have been sufficiently old enough as not to directly affect the learning style. The investigator also attempted to control for present education by including only upper class students. But at the same time, if learning style is only a point on a continuum, should learning styles be examined longitudinally and the results compared?

The second question, should a learning style of a particular group affect the type of teaching?, needs to be examined. Faculty teaching theoretical content in large classrooms will not be able to match their teaching styles to all the various learning styles in the classroom. On the other hand, the clinical groups usually have six to eight

students. If possible, could faculty place students with similar learning styles in one group with a corresponding faculty member? In addition, some institutions have small enrichment sessions and/or NCLEX (nursing licensure examination) review sessions. Again, could preliminary learning style testing be done to assist faculty in teaching these small sessions in a more optimal fashion? Some of the faculty/student communication problems may be related more to differences in both teaching and learning styles.

Many of the issues discussed in the qualitative data related to data in Scales 2 and 3. The remaining issue is faculty concerns, an important component of the educational environment. Whether or not the faculty/student problem is as great as stated, faculty members should strive for an optimal faculty/student relationship. Cultural diversity among the faculty should be promoted to offer role models to minority students. But such cultural diversity cannot occur unless the pool of minority student graduates is increased. Faculty, in all fields, should examine their own feelings and increase their awareness of other cultures. In addition, elective courses related to cultural diversity may be helpful to the students. They, too, need assistance in identifying their feelings. Are students sometimes afraid to talk to a particular faculty member because of the image she/he displays? A communication barrier will only compound the other barriers to an optimal education.

In addition, are some of the faculty/student concerns related to the increasing number of older students? Are faculty willing to change teaching styles to meet the needs of adult students? Some faculty are using collaborative approaches such as panel or small group discussions. The experiences of older students are the basis for many discussions. These students offer a degree of realism to the topic. Other faculty have begun discussions with applications, rather than theory, to involve and motivate the older students. The use of a variety of these suggestions may increase recruitment and retention, a primary goal in higher education, today.

Change is a difficult process for individuals and institutions. But these suggestions are supported by The Pew Health Professions Commission (Pew, 1991) which advocates the following strategies:

- 1) Schools should identify the disciplines, courses, and experiences necessary to ensure competencies that will be required in year 2005 (relates to the need for a baccalaureate in nursing and professionalism).
- 2) The Teaching-Learning Process
The teaching-learning process should promote inquiry skills together with the ability to manage large volumes of information.
- 3) Curricular Effectiveness

An ongoing assessment of curricular effectiveness should be an integral component of every school's strategy to monitor and improve program quality.

(Beeman's questionnaire is a useful tool in monitoring program quality).

4) Educational Flexibility

The educational program should offer greater flexibility to allow earlier access to professional training and multi-competency training, as well as the opportunity to explore professional career options more fully.

These strategies will become increasingly important as the number of at-risk students increase. Diversity related to ethnic and racial background, age, and gender will continue to grow in the next century. Assimilation into the society is important, but individual differences must be allowed to coexist.

FUTURE RELATED RESEARCH

Although the BEEMAN instrument proved to be significant on only two scales, information related to emerging trends in nursing was documented. The information concerning the differences in needs of generic nursing students and RN/BSN completion students may be useful in assisting students already enrolled and in developing programs to recruit an increased number of culturally diversified students.

At the same time, further research in the area is needed. The present study had unequal groups of participants which may have skewed the results. Therefore, in future studies, ideally, the registered nurse sample should be greater. Ironically, even though there was a significant difference related to the value of education, a greater percentage of the generic nursing students returned the questionnaires. As was stated by one nurse, the nurses may have felt they had too many other stressors at the present time.

After replicating Dr. Beeman's study with seven scales, the investigator would like to repeat the study and allow the results to factor load with no restrictions. The greater number of scales will assist Dr. Beeman, and future researchers using her instrument, to detect any items which possibly may be revised or deleted if the questionnaire were to be revised. In addition, should the questionnaire be offered at different times in the curriculum and the results compared? Is it possible that the students' needs may change?

In addition, does one's academic level affect one's learning style? Having controlled for the age factor, should researchers compare the learning styles of at-risk students with other students? Based on pre-entrance examinations, a group of at-risk students could be tested before admissions to the program. Both groups could be followed on a longitudinal basis and retested each year. As with other educational variables, it may be difficult to decipher cause from effect.

If the at-risk students improve academically, and at the same time change learning styles, would the academic improvement correlate with the learning styles? Or on the other hand, would the change in learning styles be related to other life experiences? The number of uncontrollable variables in education may prevent these questions from being answered in an optimal fashion. Lastly, should the teaching/learning styles of the faculty members and students be obtained and used in assigning students to particular clinical groups? A similarity in styles is more important in small groups. If faculty, however, monitor any changes in learning styles, they may be able to adjust their teaching styles accordingly.

This study has documented some of the recent trends in nursing education and has analyzed important data about baccalaureate nursing students. A major challenge to change within health professional education is its limited ability to define and measure educational outcomes. Few institutions have assisted their faculty in developing new assessments of their programs. Evaluation in the past has frequently related to the number of courses offered and the number of admissions and graduates. Educational institutions have been reluctant to ask in depth questions of their students related to improvement of the quality of education (Pew, 1991). In summary, this study has contributed valuable data about the demographic characteristics, perceived needs, and learning styles of baccalaureate nursing students. The information

from the two tools is more specific and will assist the educational institutions in their endeavors.

APPENDIX

CONSENT FORM

Dear Participant:

I am in the process of completing my doctoral dissertation in the Sociological Foundations department of the Graduate School at Loyola University. I am an assistant professor at Chicago State University in the College of Nursing. I have taught both generic and BSN completion students. I am interested in assessing some of their individual learning styles.

The purpose of my study is to assess whether there is a comparison between needs and learning styles of registered nurses and generic students in a baccalaureate program. Individuals learn more effectively if their initial needs are met first. Confidentiality and anonymity will be maintained at all times. There is no risk to the participant, and the participant may withdraw at any time.

The study consists of two questionnaires which may be completed in a total of thirty minutes. THE BEEMAN scale consists of demographic data and perceptions and feelings about the students' nursing program. Kolb's Learning Style Inventory will assist the investigator in evaluating the students' individual learning style. Please place the signed consent in one envelope and the completed questionnaires in the remaining envelope.

Thank you for your participation in this research study.

Sincerely,

Pamela Bachmeyer, RN MSN
Assistant Professor

SIGNATURE OF PARTICIPANT _____

BEEMAN EDUCATIONAL ENVIRONMENTAL MEASURE
FOR ADULT NURSES

RN (1) Yes (2) No
 Age _____
 Race _____
 Sex (1) Male (2) Female

Present Educational Environment:

- 1) BSN generic program (traditional, undergraduate baccalaureate)
 2) BSN non-traditional (weekend classes)
 3) BRN (BSN for RNs only)
 (1) Full-time student (2) Part-time student

Date entered this program ___/___

Expected date of completion ___/___

Educational experience: _____ Degree Obtained

- 1) High school
 2) Hospital nursing school
 3) Community/Junior college
 4) College/University

Family experience:

Marital status: (1) M (2) W (3) D (4) S

Number of children : _____

Number of grandchildren: _____

Work experience:

Number of years in nursing occupation: _____

Number of years in other occupations: _____

Estimated yearly income: _____

Please circle the answer which you feel is most applicable:

SA: STRONGLY AGREE

a: agree

d: disagree

SD: STRONGLY DISAGREE

- 1) My baccalaureate enables me to look at the patient differently..... SA a d SD
 2) My baccalaureate education enables me to identify more readily the rationales for actions in my clinical practice..... SA a d SD
 3) This program requires too much time from me..... SA a d SD
 4) A baccalaureate degree from here will make me a more professional nurse..... SA a d SD
 5) I do not feel that my education and my work experiences are interchangeable. SA a d SD
 6) My program is flexible enough to accommodate my personal schedule..... SA a d SD

- | | | | | | |
|-----|---|----|---|---|----|
| 7) | My program allows me to plan some of my own learning activities..... | SA | a | d | SD |
| 8) | My instructors give me adequate time to do my course work..... | SA | a | d | SD |
| 9) | Adult students learn more readily..... | SA | a | d | SD |
| 10) | My baccalaureate education gives me information that I could put to use in my nursing practice..... | SA | a | d | SD |
| 11) | Faculty here vary their approaches in presenting content..... | SA | a | d | SD |
| 12) | Faculty here are understanding about my other commitments..... | SA | a | d | SD |
| 13) | Courses here keep students abreast of changes in health care..... | SA | a | d | SD |
| 14) | Faculty here take into account my level of skills in nursing..... | SA | a | d | SD |
| 15) | In my program, I have to perform skills at a level below my capabilities..... | SA | a | d | SD |
| 16) | Faculty here make an effort to see me as I really am..... | SA | a | d | SD |
| 17) | I can get a better job as a result of my baccalaureate education..... | SA | a | d | SD |
| 18) | Faculty here value my prior experience.. | SA | a | d | SD |
| 19) | In this program I get support from other students..... | SA | a | d | SD |
| 20) | This program is an inexpensive one..... | SA | a | d | SD |
| 21) | My program encourages support groups among students..... | SA | a | d | SD |
| 22) | Learning labs help students practice their skills..... | SA | a | d | SD |
| 23) | Faculty here are supportive of students. | SA | a | d | SD |
| 24) | Students here participate in planning their evaluations..... | SA | a | d | SD |
| 25) | I feel I already know much of the course content of my baccalaureate program.... | SA | a | d | SD |
| 26) | In this program, students know what to expect..... | SA | a | d | SD |
| 27) | Faculty here are motivated to teach students..... | SA | a | d | SD |
| 28) | In this program, lecturing is the most common form of instruction..... | SA | a | d | SD |
| 29) | Students here are encouraged to plan an individualized course of instruction.... | SA | a | d | SD |
| 30) | Faculty here treat me as a responsible individual..... | SA | a | d | SD |
| 31) | The faculty here encourage students to think for themselves..... | SA | a | d | SD |
| 32) | The administration at this institution treats students fairly..... | SA | a | d | SD |
| 33) | This program is conveniently located for me..... | SA | a | d | SD |
| 34) | I was able to set my own objectives for | | | | |

	learning.....	SA	a	d	SD
35)	My program allows me to use my own employ- ment setting.....	SA	a	d	SD
36)	Courses within this program have not taught me much practical information....	SA	a	d	SD
37)	Many courses in this program involve small-group discussions.....	SA	a	d	SD
38)	My program allows me to function inde- pendently.....	SA	a	d	SD
39)	Faculty encourages students to be active, rather than passive, participants.....	SA	a	d	SD
40)	Faculty encourages RNs to take challeng- ing exams for credit.....	SA	a	d	SD
41)	It was difficult for me to transfer cred- its into this baccalaureate program....	SA	a	d	SD
42)	In my program, other students have back- grounds similar to mine.....	SA	a	d	SD
43)	Faculty here are united in their goals for students.....	SA	a	d	SD
44)	Faculty encourages students to share experiences.....	SA	a	d	SD
45)	For me, classes with RNs and generic students are challenging.....	SA	a	d	SD
46)	Other students support my independent actions.....	SA	a	d	SD
47)	The curriculum is repetitive.....	SA	a	d	SD
48)	I know more than some students in my program.....	SA	a	d	SD
49)	The curriculum is not challenging.....	SA	a	d	SD
50)	Faculty encourages independence.....	SA	a	d	SD
51)	I get intellectual support from my fellow students.....	SA	a	d	SD
52)	Faculty give me enough time to organize my thoughts.....	SA	a	d	SD
53)	The faculty is large enough to meet my needs.....	SA	a	d	SD
54)	This program gives me enough opportunity to challenge courses.....	SA	a	d	SD
55)	I am getting my money's worth from this program.....	SA	a	d	SD
56)	My baccalaureate program is very satis- fying to me.....	SA	a	d	SD
57)	In my program, other students challenge me.....	SA	a	d	SD
58)	For me, this program is affordable.....	SA	a	d	SD
59)	It would not have mattered to me where I did my BSN.....	SA	a	d	SD
60)	Getting a baccalaureate degree in nurs- ing is vital to my job.....	SA	a	d	SD
61)	I would recommend this program to my colleagues.....	SA	a	d	SD

- | | | | | | |
|-----|--|----|---|---|----|
| 62) | Having RNs in my class gives me self-confidence..... | SA | a | d | SD |
| 63) | My past experiences do not help me as a student..... | SA | a | d | SD |
| 64) | My fellow students appreciate my academic endeavors..... | SA | a | d | SD |
| 65) | In this program, students learn better in a group..... | SA | a | d | SD |
| 66) | The administration here treats all nursing students the same..... | SA | a | d | SD |
| 67) | Faculty here encourage students to critically assess their program..... | SA | a | d | SD |
| 68) | This program gives students lots of practical information..... | SA | a | d | SD |
| 69) | This school helps students make financial aid arrangements..... | SA | a | d | SD |
| 70) | I work better with support from fellow students..... | SA | a | d | SD |
| 71) | Instructional strategies used in this program are appropriate for my level of knowledge..... | SA | a | d | SD |
| 72) | The faculty-student ratio promotes my learning..... | SA | a | d | SD |
| 73) | Variety among faculty allows me to meet my needs..... | SA | a | d | SD |

Please answer the following questions as openly as possible. If necessary, use reverse side.

- 1) Why did you pick this particular baccalaureate program?
- 2) Is it satisfying for you? Yes ____ No ____ Why or why not?
- 3) What made you decide to get a baccalaureate degree in nursing?
- 4) If you could, how would you change your baccalaureate program to make it a more satisfying experience?
- 5) For RNs only: What advice about baccalaureate programs would you give fellow RNs seeking a degree?

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the committee with reference to content and form.

The dissertation is, therefore, accepted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

June 17, 1972

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