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SURGICAL INTENSIVE CARE AND GENERAL SURGICAL UNIT NURSES

by
Julia Ellen Nelson

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April 15, 1991
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DEDICATION

This thesis is dedicated to my friends and colleagues in the United States Air Force Nurse Corps presently serving in Operation Desert Storm.

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ABSTRACT

↙ Learning is a lifelong process that occurs in professional, personal and social situations. In this descriptive study, Kolb's Experiential Learning Theory was used to determine learning style preferences, environmental press perceptions and learning style-environmental press congruency of 17 surgical intensive care (SICU) and 17 general surgical unit nurses (GSU). Furthermore, the relationship between these variables and job satisfaction was examined.

Using descriptive statistics, one-sample and 2 X 4 chi-square analyses, Student's t-tests and one-way analysis of variance tests, no statistically significant relationships were found for any of the variables between the two groups with the exception of environmental press perceptions of SICU nurses. Surgical intensive care unit nurses significantly perceived either a predominant divergent (52.9%) or convergent (41.2%) press. The majority of the subjects preferred either diverger (38%) or assimilator (34%) learning styles. Of the total sample (N = 34), seven nurses had congruent learning style-environmental press perceptions. Results of the study indicated no differences in job satisfaction scores for any of the variables under investigation.

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CHAPTER I

INTRODUCTION

In an era of rapid change and technological advances, learning becomes essential for personal growth and development (Kolb, 1984). The learning process allows individuals to gain insight, obtain new knowledge and/or skills necessary to adapt to environmental stimuli (Verduin, Miller, & Greer, 1986). Adult learning is not confined solely to academic settings, but occurs in professional, personal and social situations. Learning is a lifelong, multifaceted process.

Effective learning requires congruency between learner and environment. Learning styles influence how individuals assimilate environmental demands. Kolb's (1984) Experiential Learning Theory, whose roots are traced to John Dewey, Kurt Lewin, and Jean Piaget, provides a methodological framework to understand and strengthen the relationships between education, personal development, and work. In experiential learning theory, the workplace serves as a learning environment that reinforces previously obtained knowledge and fosters personal growth and development. Kolb (1984) maintained that to be successful in a discipline an individual's learning style must be congruent with the environmental demands of the work situation. A tenet of experiential learning theory is that all life situations are learning situations and all environments are learning environments (Kolb, 1984; Lashinger & Boss, 1989).

Kolb (1984) showed that professional disciplines attract persons displaying distinct learning styles. Predominant learning styles have been identified in both medical and nursing student populations. Plovnick (1975) found that the learning style of medical students was one of the variables associated with the students' choice of medical specialty. Medical education planners have used the knowledge of predominant learning styles of physicians to successfully design continuing medical education courses (Robins-Sadler, Plovnick, & Snope, 1978).

Nursing research utilizing Kolb's theory of experiential learning has been primarily limited to studies of nursing education. From these studies researchers have identified predominant learning styles, and environmental press perceptions of nursing student populations. Kolb (1984) defined learning style as the method individuals use to organize information and experience. Environmental press was defined as the predominant demands or stimuli characteristic of all learning environments (Kolb et al., 1981). Nurse educators have used the information related to learning styles and environmental press perceptions to structure educational programs designed to enhance student learning activities (Highfield, 1988; Lashinger & Boss 1989; Lassar, 1984; Merritt, 1983). Ensuring learning style-environmental press compatibility increases students' assimilation within a learning environment (Highfield, 1988; Lashinger, 1986; Merritt, 1983).

Although multiple studies have validated the importance of matching individuals to their working environments (Henner & Meir, 1981; Mansfield, Yu, McCool, Vicary, & Packard, 1989; Meir & Yaari, 1988;

Moos, 1987; Muchinsky & Monahan, 1987; Pervin, 1968, 1987; Witt & Handal, 1984), research findings addressing the learning styles and environmental press perceptions of nurses employed in specific clinical areas are non-existent in the published literature. Results from the studies in fields other than nursing indicate that increased perceptions of job satisfaction result when the match between person and environment is congruent (Witt & Handal, 1984). Pervin (1968) stated that the degree of person-environment match is expressed in perceptions of increased job satisfaction, where a mismatch results in perceptions of job dissatisfaction. Kolb et al. (1981), in their study of learning style-environmental press congruency of engineers and social workers, arrived at similar conclusions. Persons whose learning style matched the predominant environmental press of the discipline were more satisfied with their jobs than individuals whose learning styles did not match.

The nursing literature is replete with studies addressing conditions which contribute and detract from job satisfaction. Because decreases in employee satisfaction ultimately may translate into diminished quality of patient care (Larson, Lee, Brown, & Schorr, 1984; Mottaz, 1988; Weisman & Nathanson, 1985; Wolf, 1981), enhancement of variables contributing to job satisfaction is considered to be advantageous to health care organizations. Study findings have shown that the more satisfied employees are with their employment situation, the more likely they will stay in the job (Brief, 1976; Bush, 1988; Mottaz, 1988; Wolf, 1981). Wandelt, Pierce, and Widdowson (1981), in their study of 3500 nurses working in Texas, concluded that

"dissatisfaction stems from the work setting, rather than nursing practice" (p. 23). Therefore, developing strategies targeted at enhancing employee-work setting congruence would contribute to improving nursing job satisfaction.

Given the problems associated with job dissatisfaction and the expense of replacing and orienting nurses, research focusing on identifying variables which contribute to enhancement of person-environment congruence would ultimately facilitate the improvement of patient care. Experiential learning theory provides a framework for understanding the manner in which individuals learn from their environments. A knowledge of learning styles and environmental press perceptions of nurses in different clinical areas and the relationship of person-environment congruence to job satisfaction promotes maximization of the resources of both employee and employer.

Statement of the Purpose

The major purposes of this study were to describe the differences, if any, in learning style preferences and environmental press perceptions of surgical intensive care and general surgical unit nurses and to describe the relationship, if any, between these variables and job satisfaction. A secondary purpose of the study was to determine differences, if any, in job satisfaction between nurses with congruent and non-congruent learning style-environmental press perceptions.

Conceptual Framework

The constructs of learning, environment and satisfaction underlie the conceptual framework of this study (Figure 1). Kolb's (1984) Experiential Learning Theory combines perceptual, experiential,

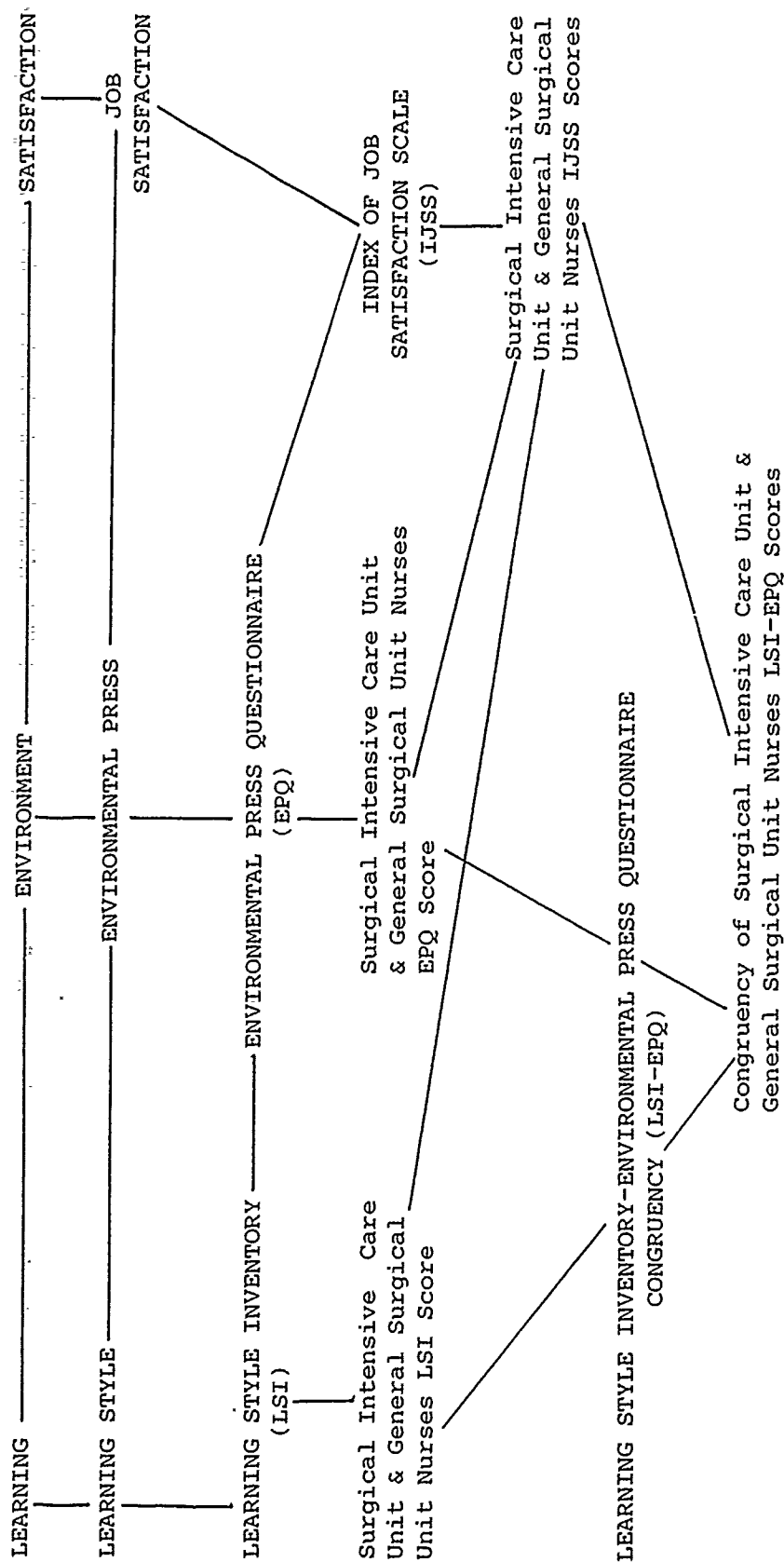


Figure 1. Conceptual framework for the investigation of learning style preference, environmental press perceptions and job satisfaction of surgical intensive care unit and general surgical unit nurses based on Kolb's (1984) Experiential Learning Theory.

cognitive, and behavioral learning models to provide a holistic, integrative perspective to describe human adaptation to the social and physical environment. Paramount to the theory are the constructs of learning and environment. The construct of satisfaction is related to the presence or absence of congruency between learning and environment.

According to Kolb (1984), the process of learning occurs in a cycle consisting of four processes: concrete experience (feeling), reflective observation (watching), abstract conceptualization (thinking), and active experimentation (doing). The concrete experience process occurs when the learner experiences a situation. The reflective observation process is characterized by the learner reflecting on the meaning of the experience, formalizing relationships and ideas about the experience, and placing the experience into perspective. Formulation of concepts and generalizations about the experience represents the process of abstract conceptualization. Finally, in the process of active experimentation the learner derives hypotheses from the experience and actively tests the hypotheses. The tests produce new experiences and the cycle continues (Kolb, 1984; Lashinger & Boss, 1984).

Learning Styles

Learning styles, according to Kolb (1984) are acquired patterns in which two of the above processes are accentuated, or preferred by the learner. Kolb (1984) placed the four processes along two dialectical distinct perpendicular axes (Figure 2). The vertical axis represents the concrete experience and abstract conceptualization continuum and illustrates how learners perceive. The horizontal axis represents

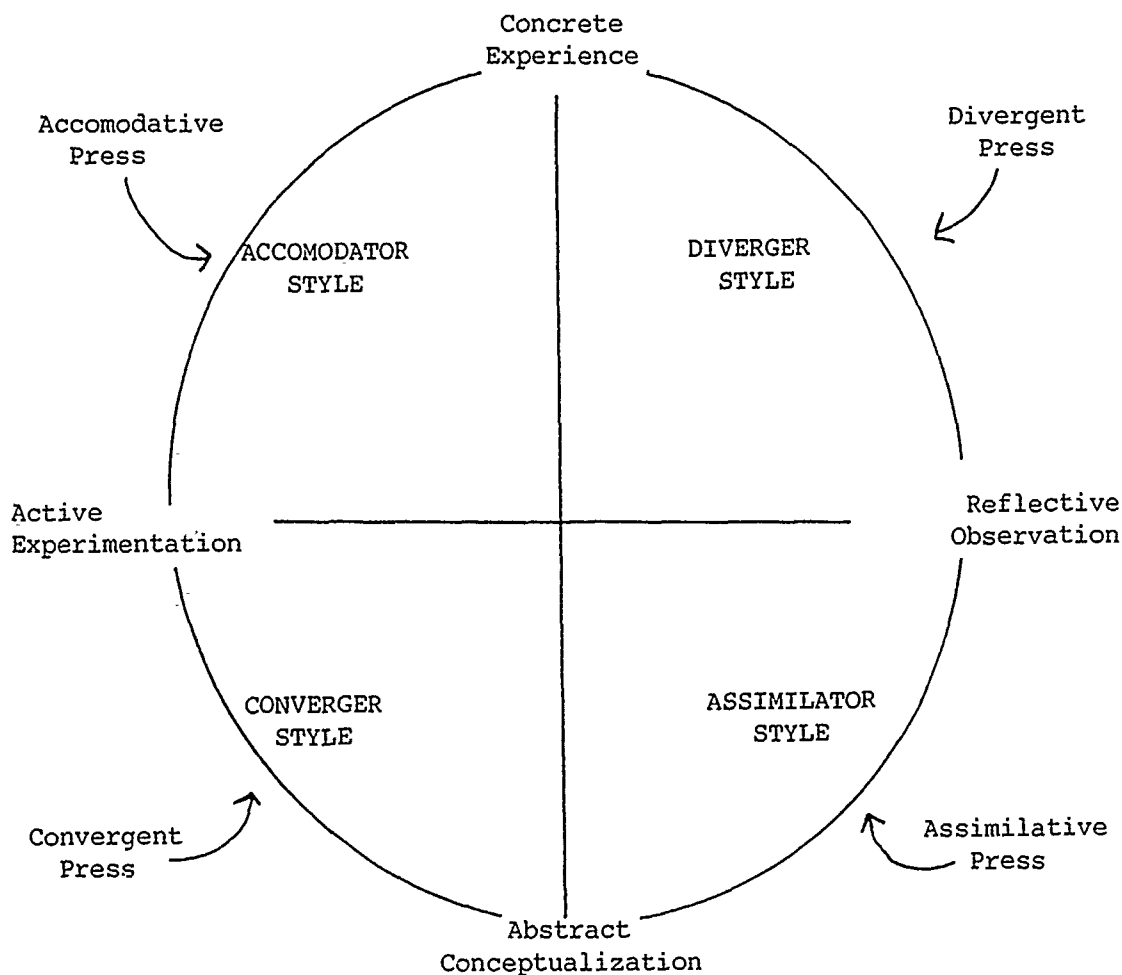


Figure 2. The learning cycle, learning styles, and environmental press.
Note. From Professionaleducation and career development: Cross sectional study of adaptive competencies in experiential learning (p. 265) by D. Kolb, D. Wolfe, R. Fry, G. Bushe, G. Gish, W. Griggs, J. Gypen, S. Manring, and R. Sims, 1981, Cleveland, OH: Case Western Reserve University, Department of Organizational Behavior Weatherhead School of Management. (ERIC Document Reproduction Service No. ED 209 493)

active experimentation and reflective observation continuum and illustrates how learners process what they perceive (Kolb & Smith, 1986). Within each of the quadrants created by the intersection of the axes are four distinct learning styles which reflect the combination of two of the processes of learning, e.g., active experimentation and concrete experience.

Kolb (1984) categorized learning styles into four distinct classes dependent on the predominant learning modes: diverger, assimilator, converger, accommodator (Figure 2). The diverger learning style reflects concrete experience and reflective observation processes. Individuals classified as divergers learn best when able to observe situations rather than act; they formulate meaning and value from situations. Divergers enjoy brainstorming and are "people oriented" (McBer & Co., 1981). The assimilator learning style reflects reflective observation and abstract conceptualization processes. Individuals classified as assimilators are able to inductively reason and formulate theory; they are more "task" oriented than "people oriented" (McBer & Co., 1981). A converger learning style reflects abstract conceptualization and active experimentation processes. Individuals classified as convergers are able to problem solve and make decisions based on finding solutions to questions or problems (McBer & Co., 1981). Lastly, the accommodator style reflects active experimentation and concrete experience processes. Individuals who are classified as accommodators are considered to learn through "hands on" experience, rely on "gut" feelings, and are more apt to take risks (McBer & Co., 1981). According to Kolb (1984), individuals tend to favor one of the

four learning styles. Persons tend to adopt a learning style which is perceived as most beneficial to acquiring information from their environments (Kolb, 1984; Kolb & Smith, 1986; Lashinger & Boss, 1989).

Environmental Press

Kolb and Fry (1975) classified learning environments according to four types of environmental press which correspond to the four learning processes. Environmental press refers to the required learning competencies necessary for successful functioning in a discipline. Fry (1978) devised a taxonomy of competencies required within each environmental domain which corresponded to Kolb's four learning processes. The four types of environmental press are: divergent, assimilative, convergent, and accommodative (Figure 2). A divergent press reflects an affectively oriented environment and requires individuals to be sensitive to people's feelings, sensitive to values, listening with an open mind, gathering information and imagining implications of ambiguous situations. An assimilative press reflects a perceptually oriented environment and requires individuals to organize information, build conceptual models, test theories and ideas, design experiments, and analyze quantitative data. A convergent press reflects a symbolically oriented environment and requires individuals to create new ways of thinking and doing, experiment with new ideas, choose the best solutions, set goals, and make decisions. Lastly, an accommodative press reflects a behaviorally oriented environment and requires individuals to be committed to objectives, seek and exploit opportunities, influence and lead others, be personally involved, and

deal with people (Fry, 1978; Kolb et al., 1981). Because each discipline exposes individuals to certain learning environments, success in a discipline is more likely when personal learning style-environmental press are matched (Kolb, 1981; Kolb et al., 1981; Kolb & Smith, 1986). Furthermore, Kolb (1981) suggested that individuals possessing learning styles incongruent with the environmental press of their discipline either change their learning style or leave the discipline.

Job Satisfaction

Satisfaction was defined by Price (1972) as the "degree to which the members of a social system have a positive affective orientation toward membership in the system" (p. 156). Job satisfaction refers to individuals' affective orientation towards work roles which they are currently occupying (Vroom, 1964). As a concept, job satisfaction has generated numerous research investigations; by the 1970s over 3,000 studies on job satisfaction appeared in the literature (Locke, 1976). Studies have shown that job satisfaction is a function of work-related rewards and values (Locke, 1969; Mottaz, 1988). Work-related rewards refer to the intrinsic benefits, i.e., achievement, personal satisfaction, self-esteem, and extrinsic benefits, i.e., pay, hours, promotions, corresponding to the occupation. Work values refer to the employee's needs, desires or what the person seeks to attain from the employment situation (Mottaz, 1988). According to Mottaz (1988), the greater the perceived congruence between work rewards and work values, the greater perceived work satisfaction. For purposes of this study,

learning style-environmental press congruency was classified as an intrinsic work-related reward.

The congruence of learning style, environmental press perceptions and job satisfaction have not been examined in nursing practice settings. However, Kolb et al. (1981) used a similar conceptual framework to investigate the relationship among the variables within engineering and social work disciplines. The researchers confirmed the existence of the relationships between learning style, environmental press and job satisfaction in their study of 436 social workers and engineers who were alumni of Case Western Reserve University. Social workers and engineers whose learning styles and environmental press were congruent reported higher degrees of job satisfaction. Kolb et al. (1981) suggested that the information is useful to organizations as it promotes identification of the necessary learning styles and skills required for effective job performance and job satisfaction.

Therefore, the conceptual framework for this study was based on the implied relationships among learning style, environmental press and job satisfaction (Figure 1). The concept of learning style was measured using the Learning Style Inventory (LSI). Scores obtained from the LSI categorize subjects according to one of the four learning styles. The concept of environmental press was measured using the Environmental Press Questionnaire (EPQ). Subjects' perceptions of the four environmental presses are obtained based on their EPQ scores. Lastly, the concept of job satisfaction was measured using the Index of Job Satisfaction Scale (IJSS). The scale measures the degree to which subjects are satisfied with their employment situation. The three

scales was used to investigate learning style preference, environmental press perceptions, and job satisfaction in surgical intensive care and general surgical unit nurses.

In summary, according to Kolb's Experiential Learning Theory, success in a discipline is more likely when personal learning styles and environmental press perceptions are congruent. Kolb (1984) defined four complementary categories of learning styles and environmental press perceptions which characterize individuals and work environments. Furthermore, the success or "fit" of learning styles and environmental press can be translated into perceptions of job satisfaction. Specifically, by describing the predominant learning styles, environmental press perceptions, and the relationship of these variables to job satisfaction in intensive care and general unit nurses, the study findings may have implications for nursing education and service.

Problem Statement

Although research studies have identified the predominant learning styles of nursing students, only a few studies have examined the learning styles of employed nurses (Christensen, Lee, & Bugg, 1979; McCart et al., 1985). No studies have been conducted to evaluate person-environment congruency in employed nurses, which according to Kolb (1984) is necessary for individual success in the work environment.

Success in the work environment is considered an intrinsic work reward that can be translated into job satisfaction (McCloskey, 1974; Mottaz, 1988; Stamps & Piedmonte, 1986). However, researchers have concluded that hospitals have become less satisfying places to work (Aiken, 1981; Bush, 1988; Mottaz, 1988). Nurse turnover rates are

generally higher in intensive care units than in general medical-surgical units (Anderson & Basteyns, 1981; Bailey, Steffen, & Grout, 1980). Of the many models depicting the multiple variables influencing job satisfaction, none of the models has identified individual learning styles in relation to the work environment as possible contributors or detractors to job satisfaction. With the high costs associated with recruitment and orientation of nurses, strategies identified through research that focus on improving the "fit" between employee and job would ultimately enhance nursing as a profession.

The need for studies investigating predominant learning styles and environmental press perceptions of nurses functioning within various nursing clinical areas and the degree to which the variables influence job satisfaction is evident. Findings from this study are expected to provide information on the predominant learning styles and environmental press perceptions of staff nurses employed in specific clinical settings, and their relationship, if any, to perceived job satisfaction.

Research Questions

1. Is there a predominant learning style preference of nurses working in a surgical intensive care unit?
2. Is there a predominant environmental press perception of nurses working in a surgical intensive care unit?
3. Is there a predominant learning style of surgical intensive care unit nurses who report that they chose to work in surgical intensive care unit?

4. Is there a difference between learning style preferences and reported job satisfaction of nurses working in an intensive care unit?
5. Is there a difference between environmental press perceptions and reported job satisfaction of nurses working in a surgical intensive care unit?
6. If learning style and environmental press perceptions are congruent, do intensive care nurses report a higher degree of job satisfaction?
7. Is there a predominant learning style preference of nurses working on a general surgical unit?
8. Is there a predominant environmental press perception of nurses working in a general surgical unit?
9. Is there a predominant learning style of general surgical unit nurses who report that they chose to work on the unit?
10. Is there a difference between learning style preference and reported job satisfaction of nurses working on a general surgical unit?
11. Is there a difference between environmental press perceptions and reported job satisfaction of nurses working in a general surgical unit?
12. If learning style and environmental press perceptions are congruent, do general surgical unit nurses report a higher degree of job satisfaction?
13. Is there a difference in learning style preferences of surgical intensive care and general surgical unit nurses?

14. Is there a difference in environmental press perceptions of intensive care and general surgical unit nurses?
15. When learning style and environmental press perceptions are congruent, is there a difference in degree of job satisfaction of intensive care and general surgical unit nurses?

Definition of Terms

For the purpose of this study, the following definitions were used:

1. Learning Style: The way in which individuals organize information and experience, as measured and categorized by the Learning Style Inventory (Kolb, 1984). Categories include: accommodator, diverger, converger, and assimilator.
2. Environmental Press: Required learning competencies intrinsic to the environment necessary for successful functioning, as measured and categorized by scores obtained using the Environmental Press Questionnaire (Kolb et al., 1981). Categories include: accommodative, divergent, convergent, and assimilative.
3. Job Satisfaction: A pleasurable emotional state resulting from the appraisal of one's job as achieving, or facilitating the achievement of one's job value as measured by the Index of Job Satisfaction Scale (Brayfield & Rothe, 1951).
4. Congruency: The matching of similar learning style and environmental press perception categories, e.g., diverger learning style and divergent environmental press (Kolb et al., 1981).

Significance of the Study

The significance of this study is related to its use as an empirically based strategy to examine the fit between nurses and the

employment situation. According to Kolb's (1984) Experiential Learning Theory, learning involves a method for individuals to master content and skills and adapt to reality. Success in a discipline is dependent on congruency between learning style and environmental demands. Because individuals favor a predominant learning style, evaluation of the individual's preferred learning style and the dominant competencies imposed by the environment are necessary to determine learning style-environment congruency. Given the professional nursing trends of job dissatisfaction, turnover, stress and burnout (Bush, 1988; Hinshaw & Atwood, 1983; Mottaz, 1988), the congruency of learning style and environment press of nurses may be a significant factor in promoting job satisfaction and retention.

The cost of replacing, orienting and educating nursing personnel is dependent on type and geographic location of the facility (Kennedy, Camden, & Timmerman, 1990). Wise (1990) estimated the accession costs of nurses in a 350 bed general hospital located in a western state at \$5,435 for a nurse experienced in the setting; \$13,744 for a nurse experienced in nursing who is orienting to a new clinical specialty; and \$12,097 for a new graduate hire. Costs associated with the replacement of employees do not include hidden economic factors such as recruitment, lessened productivity of new employees, and overtime pay (Mansfield, Yu, McCool, Packard, & Vicary, 1989; Seybolt, 1986; Wolf, 1981).

Health care organizations gain several benefits in evaluation of employee learning styles and environmental press perceptions. Initially, evaluation of a newly recruited nurse's learning style would ensure employee-environment "fit". If the environment posed a different

learning press, managerial strategies could be implemented that would compensate for the incongruence and prevent employee frustration and dissatisfaction.

Furthermore, evaluation of learning styles could enhance the effectiveness of preceptor programs. Currently, preceptor programs have been advocated as effective and efficient methods of orienting new nurses (Dufault, 1990; Giles & Moran, 1989; Knauss, 1980; Shamian & Lemieux, 1984). Matching the learning styles of preceptors with preceptees, would promote a more effective and efficient learning situation.

An additional benefit of the evaluation of learning style and environmental press is the development of staff educational programs that reflect the learning styles of the course participants. Highfield (1988) and Lashinger and Boss (1989) concluded from their research that student performance improved when nursing student learning styles were matched with congruent teaching strategies. A similar strategy would be cost effective in continuing education and staff development programs by reducing the expense incurred in providing various orientation, skill development, and continuing education activities.

The results of the study identified the learning styles and environmental press perceptions of nurses working in two specific clinical areas and examined the differences in perceptions of job satisfaction in both groups of nurses in relation to the variables under investigation. Findings from this study can provide an empirical basis for improving the congruency between nurse's learning style, working environment and job satisfaction.

Summary

The purposes of this study were to describe the predominant learning styles, environmental perceptions, and learning style-environmental press congruency of nurses working in surgical intensive care and general surgical units, and to investigate the relationship of these variables to job satisfaction. Learning is a process that allows individuals to interact with the environment. Successful integration into any environment is dependent on the congruency between one's individual learning style and environmental demands. If nurses' learning styles and environmental perceptions are known, then effective strategies aimed at improving the congruence can be developed. Kolb's (1984) Experiential Learning Theory provided the conceptual framework for the study. The concepts of learning style, environmental press and job satisfaction were identified as the basis for 15 research questions.

CHAPTER II

LITERATURE REVIEW

The conceptual framework underlying this study served as a guide for selection of literature to be reviewed. Literature related to the general theories of learning, environment, and satisfaction, as well as research findings related to learning styles, environmental press, and job satisfaction are presented and discussed in this chapter.

Learning

Educators and academicians began to seriously investigate the process of learning with the advent of the industrial revolution (Chickering, 1977). However, researchers did not begin to theoretically examine the influence of individual differences on the learning process until the beginning of this century (Bonham, 1988). In the 1930s a group of progressive educators spearheaded by John Dewey (1938) envisioned a new philosophy of education. Dewey (1938) proposed that an intrinsic relationship existed between actual experience and education, and that all learning was in fact experiential in nature. In addition, psychologists and sociologists began to investigate differences that existed among groups of people based on race, sex, and social class (Bonham, 1988). In the 1960s, researchers began to inquire how these individual differences influenced the effectiveness of various educational methods. Concern for disadvantaged learners and for improving individualized instruction within public and private educational systems emphasized the need to identify children's unique learning processes (Keefe, 1979). Research investigating the learning

styles of adults did not surface until the 1970s when Kolb first described his theory of adult-oriented learning (Bonham, 1988). Although several theories were proposed to explain adult learning styles, Kolb's Theory of Experiential Learning was considered to have the most well-defined theoretical basis (Bonham, 1988; Kirby, 1979).

Although Kolb (1984) incorporated the works of Kurt Lewin, Jean Piaget and Carl Jung, John Dewey's philosophical convictions of an intimate connection between education and experience served as the foundation of Kolb's Experiential Learning Theory. Kolb (1984) used Lewin's work on group dynamics to explain his concrete experience-abstract conceptualization dimension. Lewin (1951) discovered that learning was best facilitated in an environment of tension between concrete experience and analytical integration. Kolb incorporated Piaget's cognitive development theory to explain the cycle in which learning transpires. Piaget (1968) maintained that the key to learning involves two interactional processes: the adjustment of concepts to experience and assimilation of concepts to experience. Finally, Kolb (1984) incorporated Carl Jung's belief that individuals possess basic life orientations as the result of the interaction with their environments. Using four theoretical orientations, Kolb (1984) defined learning as a process whereby individuals assimilate, interpret, and integrate stimuli from their environment.

Environment

The understanding of the process involved in individual-environmental interaction has been the focus of numerous studies in sociological and psychological disciplines. Humanistic

perspectives view persons as acting upon the environment, whereas behaviorists view the environment acting upon the person (Kolb et al., 1981). Kolb's construct of environment resulted from the conceptual integration of theoretical models developed by environmental theorists Lewin and Bronfenbrenner.

Lewin (1951) postulated that learning was a function of both personal and environmental variables. Environmental variables include not only the person's physical surroundings, but also the social context in which the interaction occurs. Based on his theoretical propositions, Lewin developed the formula:

$$B = f (P,E)$$

(where B is behavior, P is person, and E is environment), to explain both the influence of individual predispositions (instincts, drives, traits) and environmental forces on behavior. Within Lewin's model, behavior is the product of person-environment interaction, instead of a causal force. Bronfenbrenner (1977) perceived the person-environment interaction as the process whereby individuals throughout their lifetimes progressively accommodate to environmental stimuli. Bronfenbrenner (1977) identified four distinct categories of environmental stimuli: the "micro-system", the relationship that exists between person-environment in an immediate setting; the "meso-system", the multiple "micro-systems" that interact with an individual; the "exo-system", an extension of the "meso-system" encompassing the culture and society to which the individual belongs; and the "macro-system", the general prototypes or blueprints for environmental systems. Intrinsic to Bronfenbrenner's model are the concepts that the individual perceives

all the above relationships and the person-environmental interaction is a dynamic, multi-dimensional process.

Building on the work of Lewin and Bronfenbrenner, Kolb et al. (1981) conceptualized the construct of environment as affecting and being affected by the variables of person and behavior. The interrelationship between person-environment-behavior is central to Kolb's (1984) Experiential Learning Theory. Kolb et al. (1981) recognized behavior as both a consequence of and a cause of the person's transaction with the environment. They theorized that not only is a person's behavior influenced by the environment, but the environment is shaped by the person's behavior. Learning, according to Kolb (1984), not only results from person-environment interaction, but also influences person-environment interactions.

Satisfaction

Satisfaction was defined by Price (1972) as "the degree to which the members of a social system have a positive affective orientation toward membership in the system" (p. 156). Furthermore, Price (1972) distinguished "satisfaction" from "general satisfaction," which refers to a level of satisfaction with life as a whole. Pervin (1968) stated that satisfaction was best viewed as a function of the individual, task, and situational variables.

The construct of satisfaction is most often associated with motivation theorists. Maslow (1970), who began his work in the 1940s, suggested that satisfaction was a measure of needs fulfillment. According to Maslow (1970), human needs formed a five-level hierarchy: physiological needs, safety needs, belongingness and love needs, esteem

needs, and the need for self actualization. Because the needs are arranged in a hierarchy, lower needs must be met prior to higher level needs. Maslow (1970) believed that individuals are both partially satisfied and dissatisfied in all the basic needs at one time. Dissatisfaction serves as a motivator for behavior; as one need is met, another emerges (Maslow, 1970). Several research studies and theories of job satisfaction have been based on Maslow's Needs Fulfillment Theory.

Maslow's theory has been used to guide several nursing studies. Pablo (1976) devised a work satisfaction scale based partly on Maslow's hierarchy to study job satisfaction among nurses employed in Canadian long term care facilities. Slocum, Susman, and Sheridan (1972) concluded that fulfillment of self actualization needs by nurses was significantly correlated with work performance ($r = .55$, $p < .01$). The nurses were less satisfied with self actualization needs than with esteem, social, safety or physiological needs. Benton and White (1971) and Marlow (1966) concluded that unfulfillment of lower levels needs resulted in perceptions of job dissatisfaction among nursing supervisors and staff nurses.

Herzberg (1966) used Maslow's hierarchy of needs to investigate motivation in the workplace. The two-factor theory stated that satisfaction and dissatisfaction are not polar opposites in conceptual orientation, but two separate and sometimes unrelated phenomena. Factors that influence satisfaction are considered motivational or intrinsic factors (achievement, recognition, advancement, growth); factors that influence dissatisfaction are considered hygiene or extrinsic factors

(company policy, supervision, working conditions). Furthermore, absence of motivational factors does not necessarily produce dissatisfaction. Herzberg's theory has been used as the template for several job satisfaction studies in nursing populations.

Gillies and Franklin (1988) used Herzberg's theory in their pilot study to identify whether managerial styles influenced staff nurse perceptions of job satisfaction. Results of the study indicated that the 43 nurses sampled were more satisfied with managers who displayed intrinsic oriented managerial styles (professionalism and autonomy), than with extrinsic styles (concerned more with administrative policy and pay). White and Maguire (1973) studied job satisfaction among nursing supervisors. Factors found to contribute to job satisfaction included: direct patient care, performance and use of skills, possibility for growth and recognition, and acquisition of knowledge. Factors found to contribute to job dissatisfaction included problems encountered with supervision and working conditions. Anderson and Basteys (1981) repeated a study conducted by Huckabay and Jagla (1979) that incorporated Herzberg's Theory to investigate stressors in intensive care settings. Both studies indicated that intrinsic factors contributed the most to satisfaction and extrinsic factors contributed to perceptions of job dissatisfaction.

However, several studies have confirmed that motivation factors can produce perceptions of dissatisfaction and hygiene factors can produce perceptions of satisfaction (Butler & Parsons, 1989; Friedlander, 1963; House & Wigdor, 1967; Stamps & Piedmonte, 1986). Butler and Parsons (1989) investigated medical, nursing and administrative personnel

perceptions of intrinsic and extrinsic factors that are most influential in Registered Nurse (R.N.) retention. The respondents indicated that monetary compensation was the most significant factor in R.N. retention, followed by control and managerial support. In this study, extrinsic factors rather than intrinsic factors, were perceived as job satisfiers, contradicting Herzberg's theory. Wagner, Loesch, and Anderson (1977) were unable to categorize job satisfiers and dissatisfiers in accordance with Herzberg's Theory. The researchers concluded that work satisfaction involves more than motivational and hygiene factors and was mediated by individual characteristics and the type of nursing position held. Ullrich (1972) and Longest (1974) concluded that both motivational and hygiene factors can produce both satisfaction and dissatisfaction in nursing populations.

The Needs Fulfillment theory provided a model for work satisfaction relating to the degree in which an individual's needs are met in the work situation (Korman, 1971; Stamps & Piedmonte, 1986). Persons who perceive greater needs are more satisfied when the need is fulfilled. Likewise, if the need goes unfulfilled, the person perceives greater dissatisfaction. From the Needs Fulfillment Theory emerged two other models: the Discrepancy Model and the Multiplicative Model.

The Discrepancy Model defined work satisfaction as the difference between what an individual requires and the extent to which the job fulfills those needs (Stamps & Piedmonte, 1986). Porter, Lawler and Hackman (1973) defined work satisfaction as the difference between what individuals obtain from their job and what they desire from the job. The more workers desire from their job, the greater the amount of

dissatisfaction if the need is not fulfilled (Iglen, 1971; Porter, Lawler, & Hackman, 1973; Stamps & Piedmonte, 1986). Paramount to this model is that satisfaction is the result of an individual's perception of the existing discrepancy, rather than actual differences between what one wants and what one perceives the job offers (Locke, 1973). Larson, Lee, Brown and Shorr (1984) used this theoretical framework to investigate if individual oriented variables (personality, family situation, financial issues, mobility, and work factors) affected job satisfaction and work performance of newly hired nurses. Job satisfiers included work factors and interpersonal relationships; job dissatisfiers included financial issues, work schedules, mobility factors, and adequate staffing levels. Christian (1986) used this model to investigate job satisfaction of nurse faculty members. One hundred sixty three faculty members in eight state-supported baccalaureate and master's programs were polled and indicated that higher perceptions of job discrepancy resulted in higher perceptions of job dissatisfaction.

The Multiplicative Model hypothesized that work satisfaction resulted from the weighting of various work related and personal needs (Stamps & Piedmonte, 1986). Vroom (1964) stated that the degree to which an individual's current job fulfills those needs is a measurement of satisfaction. Individuals attach different levels of importance to work related and personal needs, and satisfaction is the product of the degree to which the needs are fulfilled (Vroom, 1964). In a comprehensive study investigating multiple variables postulated to affect job performance, McCloskey and McCain (1988) incorporated Vroom's theoretical framework to explain the job satisfaction component.

Results of the study indicated that multiple variables, e.g., career commitment, education, job satisfaction and feedback were determinants of job performance.

The Social Reference Group Theory emerged out of criticism of the Needs Fulfillment Theory. The theory stated that work satisfaction occurs when individuals and their social group perceive the job as meeting both individual and group needs (Korman, 1973). According to Stamps and Piedmonte (1986), the theory stresses the importance of other persons' perceptions in shaping co-worker's needs and, in theory, individual perceptions of satisfaction can only be measured in reference to a peer group. Adams (1973) maintained that work satisfaction is dependent on the degree to which individuals perceive the degree of satisfaction or dissatisfaction in other members of their reference group. Furthermore, feelings of dissatisfaction can result when individuals feel they are being under rewarded when compared to their reference group. Feelings of guilt may occur if individuals feel over rewarded when compared to their reference group (Stamps & Piedmonte, 1986). Kramer and Hafner (1989) used components of this model in their study of the impact of shared values on staff nurse perceptions of job satisfaction and productivity. Results of the study indicated that perceptions of congruence between staff nurses and clinical experts, nurse managers, and administrators resulted in lower job satisfaction scores; perceptions of congruence with fellow staff nurses resulted in higher job satisfaction scores.

In summary, various theoretical frameworks have been used to investigate job satisfaction within nursing populations. By far,

Maslow's and Herzberg's theories of job satisfaction have been the most predominantly used to study nursing job satisfaction.

Learning Styles

Kolb (1984) defined learning styles as the individual's characteristic means of perceiving and processing information. In Kolb's theory, learning involves a four step circular process: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Additionally, the stages are categorized along two diametrically opposed dimensions: concrete experience-abstract conceptualization, and active experimentation-reflective observation. Kolb's (1976) study of 807 graduate students confirmed the negative correlational relationship predicted in his theory for both the concrete experience-abstract conceptualization dimension ($\underline{r} = -.57$; $p < .001$), and the active experimentation-reflective observation dimension ($\underline{r} = -.50$; $p < .001$). Additional research studies have also confirmed the polar relationship of the learning processes (Highhouse & Doverspike, 1987; Smith & Kolb, 1985).

Smith and Kolb (1985), using a sample of 1,446 ethnically diverse adults between the ages of 18 and 60, also reported a negative correlation between concrete experience-abstract conceptualization processes ($\underline{r} = -.42$, $p < .001$), and between active experimentation-reflective experimentation processes ($\underline{r} = -.33$, $p < .001$). Highhouse and Doverspike (1987) with a population of 111 introductory psychology students, reported a negative correlation value for the concrete-abstract dimension ($\underline{r} = -.42$, $p < .01$), and the active-reflective dimension ($\underline{r} = -.45$, $p < .001$). The data lend support

to Kolb's model in which an individual learner tends to favor one process from each of the two dimensions. To explain the moderate rather than high correlational coefficients, Kolb (1984) maintained that highly developed strengths in opposing orientations are possible because the dimensions are dialectically opposed. Persons could conceivably prefer both concrete experience and abstract conceptualization learning processes.

Kolb (1984) categorized persons as acquiring one of four learning styles: diverger, assimilator, converger, and accommodator. Each style reflects the combination of two of learning processes. Furthermore, Kolb (1984) suggested that disciplines attract individuals with a learning style congruent with its structure of knowledge. To test this hypothesis, Kolb (1984) investigated whether graduate student learning styles corresponded to their undergraduate majors. A sample of 817 graduate management students enrolled at Massachusetts Institute of Technology indicated that, overall, the students with business backgrounds displayed accommodative learning styles; students with history, political science, psychology, and English backgrounds displayed diverger learning styles; students with economics, mathematics, sociology, chemistry, and physics backgrounds displayed assimilative learning styles; and students with nursing and engineering backgrounds displayed converger learning styles. Kolb (1984) acknowledged that the small sample size precluded the results from being generalized to any of the disciplines.

Several research studies have investigated the application of Kolb's theory to both medical students and practicing physicians. Kolb

(1984) stated that learning styles of physicians and medical students should reflect their undergraduate training and their learning style is reflected in their choice of medical specialty. Plovnick (1975) examined whether the preferred learning style influenced the student's choice of medical specialty. Sixty four seniors (64% of the class) and 72 freshman (68% of the class) attending a large medical school in the eastern United States were sampled to determine whether a preferred learning style influenced their choice of medical specialty. Results of the study indicated that learning styles were associated with predictable medical specialties. Of the 47 senior students sampled who indicated a career preference, 43% of the students who preferred accommodator learning styles and 30% of the students who preferred diverger learning styles chose family practice and primary care specialties. In addition, 55% of the students who preferred converger learning styles chose medicine specialties. Finally, 42% of the students who preferred assimilative learning styles chose pathology and academic medicine specialties. Plovnick (1975) concluded that the learning style identified in the sample corresponded with Kolb's theoretical model; students who were more concrete oriented preferred specialties that reflected this orientation. Furthermore, Plovnick (1975) stated that the information was useful in preparing students for career roles. For example, concrete learners, i.e., accommodators and divergers, required more direct work experience and identification with role models to help them choose the career path most congruent with their learning styles.

Wunderlich and Gjerde (1978) replicated Plovnick's study using a sample of 200 practicing physicians randomly selected from the Hartford phone book, all 270 resident physicians in the University program, and all 66 fourth-year medical students at the University of Connecticut. Unlike Plovnick (1975), the researchers concluded that learning styles did not correlate with medical specialty. The predominant learning style for both physicians (46%) and students (56%) was converger, followed by accommodator (26% physicians and 18% students), assimilator (15% for both physicians and students), and diverger (13% for physicians, 10% for students). Furthermore, the preferred medical specialty was not correlated with a particular learning style. The researchers performed analysis of variance statistical tests to evaluate whether learning style was associated with choice of career specialty; results indicated no significant differences between the groups.

Kolb's model has been used to enhance medical educational programs. Robins-Sadler, Plovnick, and Snope (1978) used Kolb's theory to survey the predominant learning styles of family practice residents and faculty from four residency programs associated with Rutgers University. Of the 108 physicians sampled, 40% were categorized as accommodators, 31% were categorized as convergers, 16% were categorized as divergers, and 13% were categorized as assimilators. The results obtained in the study were consistent with those reported by Plovnick (1975). Furthermore, the learning styles of 15 faculty were obtained: 13% of the faculty members were classified as accommodators, 20% were classified as divergers, 53% were classified as convergers, and 13% were classified as assimilators.

Using the results obtained in the study, Robins-Sadler, Plovnick, and Snope (1978) recommended that the differences in learning style existing between the faculty members and residents be adjusted by providing learning opportunities for concrete oriented learners, such as workshops or group discussions.

Several studies have characterized the predominant learning styles attributed to both employed and student nurse populations. According to Kolb's theory, the nursing profession is a "people" oriented profession whose learning styles are more oriented towards concrete experience rather than abstract conceptualization. Christensen, Lee and Bugg (1979) investigated the relationship of locus of control, learning styles and motivational needs of nurse practitioner graduates of Wichita State University. Of the 53 nurse practitioners sampled, 70% preferred accommodative or diverger learning styles. McCart, Toombs, Lindsay, and Crowe (1985), as part of the Continuing Professional Education Project, investigated the predominant learning styles of four professional groups: nurses, architects, accountants, and clinical dietitians. The results obtained in the study indicated that the 45 nurses sampled preferred a diverger learning style. Although the samples in the above studies are small, and the findings cannot be generalized to all nursing populations, the results do support Kolb's contention that nurses prefer concrete learning styles.

Kolb's theory has been used as the theoretical framework for several studies in nursing education. According to Lashinger and Boss (1984) and Holbert and Thomas (1988) the assumptions underlying Kolb's theory are congruent with those of nursing and nursing education and

support a holistic view of man, focus on the individual, and emphasize the importance of learning through experience.

Lassan (1984), using a descriptive research design, compared learning styles of 126 generic and Registered Nurse (R.N.) students enrolled in a baccalaureate program. Overall, the generic students displayed accommodator learning styles. whereas the R.N. students displayed diverger learning styles. Merritt (1983) studied the learning style preferences of baccalaureate nursing students to determine if age and nursing employment experience affected preferred learning styles. Using an ex post facto posttest-only design, 466 generic and R.N. students enrolled in upper-division nursing courses in six accredited BSN programs were surveyed. Findings of the study indicated that the generic students preferred more structure, affiliation, and achievement than did the R. N. students; age and work experience did not impact learning style preferences of the two groups.

Lashinger and Boss (1984) compared the learning styles of incoming nursing students with the learning styles of more advanced nursing students attending two undergraduate nursing programs. The sample consisted of two groups: 166 first year students enrolled in a community college (diploma) and university baccalaureate program; and 102 second year students from the community college program and fourth year students enrolled in the university program. The predominant learning style of the first group was diverger (31%), followed by accommodator (28%), converger (24%), and lastly, assimilator (17%). The predominant learning style of the second group of students was diverger (37%), followed by accommodator (36%), assimilator (18%), and

converger (8%). The results indicated that the advanced group of students favored more concrete learning styles, supporting Kolb's (1984) contention that as individuals are exposed to a discipline, the discipline's predominant learning style becomes accentuated. Lashinger and Boss (1984) recommended that knowledge of students' learning styles fostered development of educational strategies aimed at the enhancement of student learning activities.

Highfield (1988) investigated learning style preferences in a convenience sample of 65 volunteer, primarily minority, baccalaureate nursing students. Almost half (48%) the total sample had completed or begun nursing education prior to enrolling in their current program. Fifty-six percent of the nurses sampled preferred an assimilative learning style ($p < .0001$), and no significant differences were found between the junior and senior groups. Contrary to results obtained in previous studies, this group of student nurses preferred an abstract orientation. Highfield (1988) concluded that the results may have been attributed to the characteristics of the sample.

In summary, Kolb's theory of experiential learning has been applied to several distinct professional populations. Although all four learning styles have been identified in nursing populations, the majority of studies conducted have indicated that nurses prefer concrete learning styles. Studies investigating the predominant learning styles of employed nurses according to clinical areas are non-existent in the published literature.

Environmental Press

Murray (1938) coined the term environmental press to refer to the demands or stimuli inherent in collegiate environments that must be adapted to for successful student integration. His reinforcement model contended that the extent to which individuals interact with the environment was dependent of whether or not the environment met the students needs. Kolb et al. (1981) used Murray's concepts to define environmental press within their theoretical framework. According to Kolb's experiential learning theory, all environments possess intrinsic characteristics or competencies that must be mastered by the learner for successful functioning within the environment.

Few research studies have investigated Kolb's theoretical concept of environmental press. Fry (1978) developed the typology of learning environments from his research of environmental press in a graduate school of architecture. Each of the typologies corresponded with Kolb's learning style processes. As part of the Lifelong Learning and Adult Development Project, Kolb et al. (1981) investigated the predominant learning styles and environmental press perceptions of engineers and social workers who were alumni of Case Western University. The cohort study sampled students who had graduated with bachelor degrees in engineering or master of science degrees in social work in 1955, 1960, 1965, 1970, and 1975. The sample size included 318 engineers and 118 social workers. Results of the study indicated that the engineers preferred a converger learning style (41%) and perceived an abstract/symbolic environmental press. The sample of social workers preferred diverger (34%) and accommodator (29%) learning styles, and

perceived concrete/affective and concrete/perceptual environmental press. From these studies Kolb (1984) posited that individuals choose disciplines with environments compatible with their own learning style.

Due to the humanitarian orientation of the nursing profession, Kolb (1984) characterized the environmental press of nursing as one that corresponds with an accommodative and divergent press. In her study of learning styles and environmental press perceptions of baccalaureate nursing students, Lashinger (1986) confirmed Kolb's characterization of nursing environmental press perceptions. After a three month clinical experience in psychiatric and medical-surgical nursing, the learning style preferences and environmental press perceptions of 68 third year nursing students were obtained. Results of the study indicated that that 33% of the students preferred a diverger learning style; 28% preferred an accommodator learning style; 18% preferred a converger learning style; and 18% preferred an assimilator learning style. The majority of students sampled preferred concrete learning styles as predicted by Kolb's theory. The students' environmental press perceptions for the medical surgical rotation included: 28% of the students perceived an accommodative press, 32% perceived a divergent press, 32% perceived a convergent press, and 24% perceived an assimilative press. The students' environmental press perception for the psychiatric setting indicated that: 29% perceived a convergent press, 28% perceived an accommodative press, 31% perceived a divergent press, and 25% perceived an assimilative press. The diversity of environmental press scores may indicate that nursing environments exert a balanced press. According to Kolb (1984), environments in which no

one competency dominates is preferred for it allows the integration and development of all the learning processes.

In a second study of environmental press perception in student populations, Lashinger and Boss (1989) surveyed 121 upper-level generic baccalaureate and 76 second and third year R.N. students enrolled in a nursing theory course. Results of this study also supported Kolb's categorization of nursing environmental press as accommodative or divergent. Both the generic and R. N. students perceived the clinical environment as requiring more concrete than abstract competencies ($t = 21.37$; $df = 164$; $p < .0001$). Results of the study further supported Kolb's description of learning styles and environmental press perceptions within nursing populations. However, the samples were small and included only a few practicing nurses. Studies of environmental press perceptions of employed nurses categorized by clinical area are non-existent in the published literature.

Job Satisfaction

Job satisfaction is the degree to which work related rewards and values meet perceived individual needs (Kallenberg, 1977; Locke, 1969; Mottaz, 1988; Vroom, 1964). According to Kallenberg (1977), jobs in themselves have no meaning; it is the "value" an individual attributes to the employment situation and the rewards, both intrinsic and extrinsic, associated with the job that determines job satisfaction. To understand the concept of job satisfaction within industrial organizations, research has concentrated on identifying the variables that contribute to or maximize employee job satisfaction.

Variables Affecting Job Satisfaction

Job satisfaction has been extensively studied in a myriad of nursing populations, as nurses constitute the largest professional group providing patient care in hospitals (Bush, 1988; Stamp & Piedmonte, 1986). Results of research studies have indicated that employee perceptions of job satisfaction directly influence turnover, burnout, and absenteeism, and indirectly influence productivity (Hinshaw, Smeltzer & Atwood, 1987; Larson, Lee, Brown, & Schorr, 1984; Mottaz, 1988; Mueller & McCloskey, 1990; Stamps & Piedmonte, 1986). The published literature is replete with studies addressing the multiple variables that influence job satisfaction in nursing populations.

The primary reason nurses leave their jobs is dissatisfaction (Mottaz, 1988; Wandelt, Pierce, Widdowson, 1981; Wolf, 1981). Godfrey (1978a, 1978b, 1978c) surveyed 17,000 nurses concerning their perceptions of job satisfaction. Seventy-eight percent of the staff nurses reported that they were "barely" satisfied, and 70% of intensive care and coronary care nurses reported that they were either "barely" or "moderately" satisfied with their current employment situations. In the sample, identified work satisfiers included: feelings of accomplishment at the end of the day, adequate staffing, authority to do the work the way it should be done, appropriate scheduling, direct patient care, recognition, and positive relationships with co-workers.

Wandelt, Pierce, and Widdowson (1981) investigated factors contributing to job dissatisfaction. Of the 3500 employed and unemployed nurses surveyed, the factors identified as dissatisfiers included: low salaries, amount of paperwork, inadequate administrative

support, decreased opportunity for continuing education, and a working environment that was not conducive to providing a sense of worth as a member of the health care team. From the data obtained in the study, Wandelt, Pierce, and Widdowson (1981) concluded that dissatisfaction stemmed from the work setting rather than nursing practice.

Mottaz (1988) compared the degree of work satisfaction perceived among 1,645 randomly selected members of various groups: university faculty, organizational administrators, elementary school teachers, registered nurses, police officers, clerical workers, factory foreman, and factory workers. Of the four professional groups surveyed, nurses reported the lowest level of work satisfaction. Mottaz (1988) used multiple regression analysis, controlling for age, gender, education, total income, and marital status, to identify the major determinants of work satisfaction for each of the groups. Within the nursing population, intrinsic task rewards, i.e., task significance, task involvement, and supervisory assistance were the greatest contributors to nursing satisfaction. Extrinsic rewards, i.e., salaries, working conditions and fringe benefits were not perceived by the nursing subjects as significant contributors to job satisfaction.

Similar results had been previously reported in a study conducted by McCloskey (1974). McCloskey (1974) used Maslow's hierarchy of needs to investigate the influence of rewards and incentives on staff nurse turnover rates. In the study, safety rewards and incentives were defined as to those needs that met Maslow's physiological and safety needs, social rewards and incentives that met Maslow's social needs, and psychological rewards and incentives that met Maslow's ego and

self-fulfillment needs. Ninety-four full time medical-surgical nurses were selected for the study. Each nurse had left a nursing position four months prior to being surveyed. Results of the study indicated that the rewards contributing the most to job satisfaction included: psychological rewards (opportunity to attend educational programs, career advancement, job responsibility, recognition), followed by safety rewards (salary raises, weeks of vacation, weekends off), and finally social rewards (more contact with peers, different supervisors). A significant finding from McCloskey's (1974) study was that salaries were not viewed as important a contributor to job satisfaction as researchers had previously reported.

Building on the work of McCloskey (1974), Everly and Falcione (1976) randomly sampled 144 female staff registered nurses from four east coast metropolitan hospitals. The researchers investigated which aspects of the working environment were perceived by nurses as contributing the most to job satisfaction. A factor analysis determined four underlying dimensions contributing to 59% of the variance. Factor I, relationship orientation, e. g., relationships with fellow workers, immediate supervisors, and supervisory personnel, accounted for 23.7% of the variance. Factor II, internal work rewards, e. g., good working conditions, enjoyment of my work, opportunity to develop new skills, and enjoyment in the opportunity to use skills, accounted for 15.7% of the variance. Factor III, external work rewards, e. g., opportunity for advancement, pay, employee benefits, accounted for 11.9% of the variance. Lastly, Factor IV, administrative policies, e. g., hospital policies and recognition of past service, accounted for 7.5% of the

variance. Everly and Falcione (1976) concluded that nurses perceived job satisfaction in complex terms, and that interpersonal relationships as well as intrinsic and extrinsic rewards need to be examined as contributors to job satisfaction.

Stamps and Piedmonte (1986) developed a work satisfaction scale to measure job satisfaction in nursing populations. The researchers identified six variables cited in the literature as significant contributors to job satisfaction: pay, autonomy, task requirement, organizational requirements, interactions, and job prestige/status. The researchers sampled two groups of nurses regarding their perceptions of the importance of the variables on job satisfaction. The first group consisted of 278 nurses; the second group consisted of 279 nurses. In the first group of nurses, job status was reported as the most important factor, followed by interaction, autonomy, organizational requirements, pay, and task requirements. The second group of nurses sampled rated job status as the most important contributor to job satisfaction followed by interaction, autonomy, task requirement, pay and organizational requirements. Stamps and Piedmonte (1986) concluded from their investigation that both intrinsic work related and interpersonal variables were the most significant contributors to nursing job satisfaction.

Job satisfaction has been investigated as a variable contributing to nursing turnover (Hinshaw, Smeltzer, & Atwood, 1987; Price & Mueller, 1981). Price and Mueller (1981) identified seven variables indicated in the literature as contributors and detractors to job satisfaction: routinization, participation, communication, integration,

pay, distributive justice (the degree to which rewards and punishments are related to the amount of input into the organization), and promotional opportunity. Utilizing a two-step, longitudinal design, the researchers sampled 1,091 non-supervisory registered nurses. Results from the study indicated that routinization of tasks ($\underline{r} = -.31$, $p < .001$), and opportunity ($\underline{r} = -.06$, $p < .05$) were negatively correlated with job satisfaction. Participation ($r = .11$, $p < .001$), communication ($\underline{r} = .19$, $p < .001$), and promotional opportunity ($\underline{r} = .17$, $p < .001$) were positively correlated with job satisfaction. Price and Mueller (1981) concluded that job satisfaction had no significant net influence on turnover, but served as an important mediating variable.

Hinshaw, Smeltzer and Atwood (1987) investigated job satisfaction as a determinant of anticipated turnover. Using a non-experimental causal modeling design, the researchers obtained data from 1002 registered nurses, 282 licensed practical nurses, and 282 nursing assistants working all shifts in seven urban and eight rural hospitals. The researchers further divided job satisfaction as either organizational job satisfaction or professional job satisfaction. Hinshaw, Smeltzer, and Atwood (1987) defined organizational satisfaction as "a staff members' positive or negative opinion of the job in terms of pay or reward, nursing administration style, professional status accorded, and interaction with colleagues" (p. 10). Professional/occupational satisfaction was defined as "nursing staff's opinion of the quality of care they delivered, time to conduct their care activities, and general enjoyment of their position" (p. 10). Of the multiple variables shown to influence job satisfaction among registered nurses,

organizational job satisfaction was strongly influenced ($R^2 = .57$) by group cohesion ($B = .27$), job stress ($B = -.34$), control over practice ($B = .17$), and autonomy ($B = .13$). Professional job satisfaction was influenced ($R^2 = .49$) by group cohesion ($B = .17$), job stress $B = -.47$), and autonomy ($B = .18$). Results indicated that organizational satisfiers were perceived by the sample to be as important as the professional satisfiers.

Job Satisfaction: Person-Environment Congruence

Previously cited research studies illustrated the importance of intrinsic, extrinsic and interpersonal variables on nurses' perceptions of job satisfaction. Another important dimension shown to impact employee perceptions of job satisfaction is the congruency between how well individuals are "matched" to their job. Pervin (1968, 1987) in his analyses of the person-environment fit controversy, cited numerous studies reflecting the importance of matching individuals to the proper work environment as a determinant of job satisfaction. Pervin (1968) stated that both interpersonal and non-interpersonal environments exist which correspond to individual personality characteristics. A "match" of individuals to environments is expressed in high performance, satisfaction, and little stress in the system, whereas a "mismatch" results in decreased performance, dissatisfaction, and stress in the system (Pervin, 1968). Pervin (1987) stated that person-environment congruence focused on personal aptitudes in relation to task demanded in the environmental setting and on the personal needs or motives in relation to environmental reinforcers, opportunities and barriers.

The majority of person-environment fit studies have been conducted in disciplines other than nursing. In an attempt to improve the "fit" between nurses and environments, nurse researchers have developed tools to match nurses' temperaments and workstyles with the characteristics of the clinical areas (Mansfeild, Yu, McCool, Vicary, & Packard, 1989). Hener and Meir (1981) investigated person-environment fit among 126 registered nurses to determine whether nurses who had chosen their working situation reported higher degrees of job satisfaction. Results indicated that work preference was positively correlated with job satisfaction ($r = .44, p \leq .01$). Meir and Yaari (1988) measured the congruency of specialty choice within occupations and job satisfaction among 324 subjects, including 49 registered nurses. Results of the study indicated that overall, nurses' choices of nursing specialization were positively correlated with job satisfaction ($r = .42, p \leq .01$).

Intrinsic to Kolb's theory of experiential learning is the concept that success in a discipline is dependent on a match between an individual's learning style and environmental press. Success is translated into perceptions of job satisfaction (Kolb, 1984; Kolb et al., 1981). If an individual possesses the learning skills commensurate with the environmental requirements, then the learning that occurs translates into effective performance and job satisfaction. In a study conducted by Kolb et al. (1981), learning styles preferences, environmental press perceptions and degree of job satisfaction were obtained from a sample of 91 engineers who were enrolled in the Case Western Alumni Project. Results of the study

indicated that the engineers whose learning styles corresponded with their perceived environmental press also reported higher degrees of job satisfaction. A majority of the engineers displayed converger learning styles, and perceived a convergent press. Furthermore, results from the study indicated that the engineers who displayed highly convergent learning styles were more satisfied in a highly convergent press environment, whereas engineers with highly convergent learning styles who perceived low convergent environmental press were the least satisfied.

In a second study conducted by Kolb et al. (1981), environmental press perceptions and job satisfaction were investigated in a group of 270 engineers and 111 social workers. The researchers categorized the group into three person match and mismatch combinations: person's skills exceeded the demands of the job, i.e., overqualified; person's skills were congruent with the demands of the job, i.e., matched; and, demands of the job exceeded the person's skills, i.e., underqualified. The respondents were asked to describe the environmental press of their work environment and their corresponding level of ability to meet these job requirements. The hypothesis driving the study was that both the under qualified and overqualified groups would report lower degrees of job satisfaction than the matched group. Results of the study indicated that, as predicted, respondents who thought their skills matched the environmental press of the work environment reported higher degrees of job satisfaction. The results were statistically significant at the .01 level. Both studies supported Kolb's belief

that persons with learning styles congruent with the environmental press competencies required in the working environment were more satisfied than individuals whose learning styles and environmental press perceptions were mis-matched. Published research studies in which job satisfaction was investigated as a measure of the congruency between learning styles and environmental press perceptions in nursing populations are absent in the literature.

Summary

Literature pertaining to each of the constructs and concepts within the conceptual framework were reviewed. The theoretical evolution of the constructs of learning, environment and satisfaction was outlined. Research studies investigating the predominant learning styles of medical and nursing students were reported. Literature related to environmental press perceptions in engineering, social work and nursing populations was discussed. Research studies addressing the variables shown to contribute to job satisfaction in nursing were reviewed. Research findings were reported that related job satisfaction to both person/environment congruency, and learning style-environmental press congruency in engineering and social work populations.

CHAPTER III

METHODOLOGY

The study design, sample and setting, procedures for protection of human subjects, and data collection instruments are discussed in this chapter. The plan for data collection and analysis is also presented.

Design

A descriptive study design was used to examine the predominant learning styles and environmental press perceptions of surgical intensive care and general surgical unit nurses, and to identify and describe the differences, if any, that exist between these variables and job satisfaction in the two populations. In addition, the design was used to examine differences, if any, in job satisfaction between surgical intensive care unit and general surgical unit nurses with congruent and non-congruent learning style-environmental press perceptions.

Sample

The target population included all registered nurses working in the surgical intensive care unit and general surgical unit who were employed in a Southwestern community hospital. Criteria for admission to the study included subjects who were registered nurses:

1. employed in full time or part time staff nurse positions in the surgical intensive care unit and general surgical unit.
2. employed in the surgical intensive care and general surgical unit for at least six months.

Nurses with a minimum of six months work experience in the clinical area

were selected because six months is considered the minimum amount of time required for employees to formulate realistic perceptions of their jobs (Larson, Lee, Brown, & Schorr, 1984; Mueller & McCloskey, 1990).

Setting

The setting for this study was a 374 bed community hospital located in the southwestern United States that has been designated in the nursing literature as a Magnet hospital (McClure, Poulin, Sovie & Wandelt, 1983). The hospital is affiliated with a religious organization and is part of a multi-health agency corporate system operating two of the six privately owned hospitals in the city. The hospital's patient population is similar to the other private hospitals in the area, except that obstetrical services are not offered and pediatric services are limited to the care of older children and adolescents. The hospital has both medical and surgical intensive care units as well as units designated for care of medical patients and surgical patients. Access to the agency was obtained via the Clinical Director for Research, Patient Care Services (Appendix A).

Human Subjects

This study was reviewed and approved by the College of Nursing Ethical Review Committee at the University of Arizona prior to the start of data collection (Appendix B). The purpose and procedures for the study were explained to subjects in a written disclaimer (Appendix C). Confidentiality and anonymity of subject participation was assured with use of subject identification numbers. Only aggregate data were reported. Completion of the three data collection instruments was evidence of subjects' consent to participate.

Instruments

Questionnaires for the study included a demographic data sheet (Appendix D) and three instruments: the Learning Style Inventory, the Environmental Press Questionnaire, and the Index of Job Satisfaction Scale (Appendix E). Demographic data obtained from each respondent included: age, sex, highest educational level, full time or part time employee status, clinical unit of practice, length of time working in present area, years of nursing experience and subject's preference for assignment on the unit.

The Learning Style Inventory (LSI) is an 12 item ipsative scale developed by Kolb (1976). Respondents are asked to rank nine sets of four words that they consider to be most representative of their learning style. Each word corresponds to one of the four learning processes: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). A score is obtained for each of the learning processes, and a cumulative score is then computed for each of two dimensions. The abstract-concrete dimension score is obtained by subtracting the concrete experience score from the abstract conceptualization score (AC - CE). The active-reflective dimension score is obtained by subtracting the reflective observation score from the active experimentation score (AE - RO). The two dimensions scores are then plotted on the learning style grid (Appendix F). Based on the location of the scores on the grid, subjects are classified according to the four learning styles: diverger, assimilator, converger, and accommodator. Smith and Kolb (1985) reported split half reliability coefficients of 0.85 for the

abstract-concrete dimension, and a split half reliability of 0.81 for the active-reflective dimension. Geller (1979) and Wunderlich and Gjerde (1978) reported test-retest reliability coefficients between 0.72 and 0.84 for each of the dimensions. Content validity for use of the instrument in nursing populations has been supported in several studies (Christensen, Lee, & Bugg, 1979; Lashinger & Boss, 1984, 1989; Lissan, 1984). Permission to use the LSI in the study was obtained from the instrument's copyright holder (Appendix G).

The Environmental Press Questionnaire (EPQ) is a 27 item instrument designed to measure the competencies required for successful functioning within learning/work environments. Respondents are asked to rate the importance of each of the 27 tasks on a seven-point Likert scale (not at all important to high level needed). Each of the 27 competencies corresponded to Kolb and Fry's (1975) typology of learning environments: divergent, assimilative, convergent, and accommodator (Appendix H). A mean score for each of the presses is calculated by adding the scores obtained for the tasks corresponding to each press category and then dividing by the number of tasks in the category. Predominant environmental press perceptions are obtained by placing the respondents in whichever category contained the highest press mean. The four environmental press categories correspond to the four learning styles, i.e., diverger, assimilator, converger, and accommodator. Lashinger and Boss (1989) reported Cronbach alpha reliability coefficients ranging from 0.64 to 0.75 for the EPQ with baccalaureate nursing students. Validity of the instrument continues to be investigated (Kolb et al., 1981). However, the EPQ has been successfully used to measure

environmental press perceptions in baccalaureate nursing populations (Lashinger & Boss, 1984, 1989).

The Index of Job Satisfaction Scale (IJSS) is an 18 item scale designed to measure overall job satisfaction. Respondents are asked to rate each of the statements according to a five-point Likert scale (strongly agree to strongly disagree). A job satisfaction score is calculated by converting each response to a weighted number. Strongly agree answers are given five points, agree answers are given four points, undecided answers are given three points, disagree answers are given two points and strongly disagree answers are given one point. A mean job satisfaction score is calculated by dividing the total score by 18. Brayfield and Rothe (1951) reported an odd-even product moment reliability coefficient of 0.77 which was corrected by the Spearman Brown formula to 0.87. Alexander, Weisman, and Chase (1981) reported a Cronbach alpha coefficient of .87 for an adapted version of the IJSS. Validity of the instrument has been supported in both nursing and non-nursing populations (Alexander, Weisman, & Chase, 1981; Brayfield, Wells, & Strate, 1957; Brosnan & Johnston, 1980; Hinshaw & Atwood, 1983; Price, 1962).

Clinical Feasibility Trial

A trial study was conducted to assess the clarity of the statements contained in the questionnaires and to estimate the time required to complete the questionnaires. Four graduate students presently working in either an intensive care or general unit setting were asked to voluntarily complete the questionnaires and provide information on the clarity of the instruments, time required for completion and other

related comments. Results obtained from the feasibility trial indicated that 15 to 20 minutes were required to complete the questionnaires. Respondents reported no difficulties with the clarity of the questions or problems in completing the questionnaires.

Method of Data Collection

Once access to the surgical intensive care unit and general surgical unit was obtained, the nurse managers of each unit were contacted. A meeting with the nurse managers was scheduled to discuss the project and to obtain a list of eligible staff members. Twenty-two surgical intensive care unit nurses and 19 general surgical unit nurses were asked to participate in the study. A subject identification number was assigned to each subject. Questionnaire packets were placed in sealed envelopes in employee mailboxes located on the units. The three instruments were presented in varying sequence to reduce subject bias. After the questionnaires were distributed this investigator attended two regularly scheduled staff meetings on the surgical intensive care unit to explain and answer staff questions concerning the project. Data were collected during the months of January and February, 1991. For all questionnaires not returned within two weeks from the time of initial distribution, a follow up note was sent to the nurses, and, if necessary, a second questionnaire was distributed. Questionnaires were returned to the investigator either in a pre-addressed, stamped envelope that was included with each of the questionnaire packets, or were placed in designated collection boxes located on each of the units.

Data Analysis Plan

Statistical methods used to analyze the data included descriptive statistics, one-sample and 2 X 4 chi-square analyses, two-tailed Student's t-tests using pooled variance estimates and one-way analysis of variance tests. Descriptive statistics were used to analyze the demographic data obtained in the study and to categorize the preferred learning styles and environmental press perceptions of surgical intensive care and general surgical unit nurses. One-sample chi-square analyses were used to examine whether the distribution of learning style and environmental press categories for each of the groups was statistically significant. Two by four chi-square analyses for independent samples were used to determine whether differences existed in the distribution of learning style preferences and environmental press perceptions between surgical intensive care and general surgical unit nurses. Two-tailed Student's t-tests were used to examine the differences in the means obtained for learning style process scores, environmental press scores and job satisfaction scores between the two groups. One-way analysis of variance tests were used to determine whether statistically significant differences existed in mean job satisfaction scores between each of the learning style and environmental press categories. For purposes of this study, differences were considered significant at less than or equal to the 0.05 level of probability.

Summary

A descriptive design was used to investigate the predominant learning styles and environmental press perceptions of registered nurses

in both a surgical intensive care unit and a general surgical unit, and to determine whether differences in job satisfaction exist between the two groups of nurses when learning style-environmental press perceptions are either congruent or non-congruent. All nurses who are full-time or part-time employees of the institution and who worked in the two clinical areas for six months were asked to participate in the study. Three data collection instruments and a demographic data information sheet were used to obtain the subjects perceptions of the variables under investigation. Multiple statistical tests were used to analyze the data. A pre-selected probability level of less than or equal to 0.05 was used to determine significance.

CHAPTER IV

RESULTS OF DATA ANALYSIS

A descriptive study design and a convenience sampling technique was used to examine learning style preferences, environmental press perceptions and degree of job satisfaction between surgical intensive care unit and general surgical unit nurses. Descriptive statistics, one-sample and 2 X 4 chi-square analyses, Student's t-tests and one-way analysis of variance tests were used to examine if differences existed between the groups in relationship to each of the variables under investigation. Characteristics of the sample and the results of data analysis are presented in this chapter.

Instrument Reliability

Reliability coefficients were estimated for each of the questionnaires used in the study. The Cronbach coefficient alpha for the Environmental Press Questionnaire was .91 and the Cronbach coefficient alpha for the Index of Job Satisfaction Scale was .79. Because the Learning Style Inventory is an ipsative scale, Cronbach coefficient alphas were estimated for each of the four learning style processes. A Cronbach coefficient alpha of .79 was obtained for the concrete experience process; .70 for the reflective observation process; .85 for the abstract conceptualization process, and .87 for the active experimentation process. Both instruments demonstrated acceptable reliability estimates of $\alpha \geq .70$ (Burns & Grove, 1987).

Kolb (1984) reported Pearson correlation coefficients to support the polar relationships of the concrete experience-abstract

conceptualization (CE - AC) and reflective observation-active experimentation (RO - AC) dimensions. In this study, a Pearson coefficient of -0.17 ($p = .345$) was obtained for the CE - AC dimension and a Pearson correlation of -0.11 ($p = .53$) was obtained for the RO - AE dimension.

Description of the Sample

A total of 41 surgical intensive care unit and general surgical unit nurses were asked to participate in the study. The sample for analysis consisted of 17 surgical intensive care unit nurses (77% response rate) and 17 general surgical unit nurses (90% response rate). A comparison of the groups by age, employment status and respondent's choice to work on the unit is presented in Table 1. The majority of the nurses in both groups were female (91%) and were full time employees of the institution (82%). All nurses had chosen to work on their respective nursing units. In Table 2, a comparison of the groups by age, experience on the unit and experience in nursing is presented. Mean ages of the subjects were 40 years (S.D. = 7) for surgical intensive care unit nurses and 39.4 years (S.D. = 8.8) for general surgical unit nurses. Surgical intensive care unit nurses averaged 8.5 years (S.D. = 4.4) on the unit and 17 years (S.D. = 8.9) in nursing. General surgical unit nurses averaged 5.6 years (S.D. = 3.4) on the unit and 13.8 (S.D. = 9) years in nursing. A comparison of the educational preparation between the two groups of nurses is presented in Table 3. Nearly half (47.1%) of the surgical intensive care unit nurses were prepared at the baccalaureate level; of those nurses, 35.3% had baccalaureate nursing degrees. The majority of the general surgical

Table 1

Comparison of Groups by Sex, Employment Status and Choice to Work on the Unit

Variable	Groups			
	Surgical Intensive Care Unit (<u>n</u> = 17)		General Surgical Unit (<u>n</u> = 17)	
	n	%	n	%
Sex				
Female	15	88%	16	94%
Male	2	12%	1	6%
Employment Status				
Full Time	15	88%	13	77%
Part Time	2	12%	4	23%
Choice to Work on Unit				
Yes	17	100%	17	100%
No	0	0%	0	0%

Table 2

Description of Age, Experience in Clinical Area, and Experience in Nursing

Groups						
Characteristic	Surgical Intensive Care Unit (<u>n</u> = 17)			General Surgical Unit (<u>n</u> = 17)		
	Mean	S.D.	Range	Mean	S.D.	Range
Age (Yr)	40.0	7.0	33 to 57	39.4	8.8	28 to 54
Experience in Clinical Area (Yr)	8.5	4.4	1 to 17	5.6	3.4	1 to 11
Experience in to Nursing (Yr)	17.0	8.9	3 to 37	13.8	9.0	2 to 34

Table 3

Comparison of Groups According to Highest Educational Degree Earned

<u>Highest Degree Earned</u>	<u>Groups</u>			
	<u>Surgical Intensive Care Unit</u>		<u>General Surgical Unit</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
RN Diploma	5	29.4%	3	17.6%
ADN	4	23.5%	8	47.1%
BSN	6	35.3%	5	29.4%
BS/BA-Other	2	11.8%	0	0.0%
Missing			1	5.9%
Total	17	100%	17	100%

unit nurses had associate degrees in nursing (41.5%) and fewer than one-third (29.4%) were prepared at the baccalaureate level. More surgical intensive care unit nurses (29.4%) were prepared at the diploma level than were general surgical unit nurses (17.6%).

Results Related to Research Questions

Research question 1: Is there a predominant learning style preference of nurses working in a surgical intensive care unit?

Of the 17 surgical intensive care unit nurses (Table 4), six (35.3%) were classified as divergers, six (35.3%) were classified as assimilators, two (11.8%) were classified as convergers and three (17.6%) were classified as accommodators. A one-sample chi-square analysis of the distribution was found to be statistically not significant ($\chi^2 = 2.26$, $df = 3$, $p > .25$). Therefore, findings indicated that the nurses working in the surgical intensive care unit did not have a predominant learning style preference.

Research question 2: Is there a predominant environmental press perception of nurses working in a surgical intensive care unit?

Mean scores for each of the four environmental presses are presented in Table 5. Overall, the presses were similarly perceived by the surgical intensive care unit nurses. The mean environmental press scores ranged from 4.35 to 5.89 on a scale of 1 to 7 (low press perceived to high press perceived). Therefore, findings indicated that the range of scores were fairly consistent across each of the presses.

However, when categorized according to the highest press score perceived by surgical intensive care unit nurses (Table 6), nine (52.9%) were categorized as perceiving a predominant divergent press, seven

Table 4

Comparison of Learning Style Preferences of Surgical Intensive Care Unit (SICU) and General SurgicalUnit (GSU) Nurses

Groups	Learning Style Preference									
	Diverger		Assimilator		Converger		Accommodator		One-Sample p value*	
	n	%	n	%	n	%	n	%	Chi-Square	
SICU ($\bar{n} = 17$)	6	35.3%	6	35.3%	2	11.8%	3	17.6%	2.26	$p > .25$
GSU ($\bar{n} = 17$)	7	41.2%	4	23.5%	3	17.6%	3	17.6%	2.53	$p > .25$

* Significance Level = $p \leq .05$

Table 5

Comparison of Learning Processes and Environmental Press of Surgical Intensive Care Unit (SICU) and General Surgical Unit (GSU) Nurses

Variables	Groups						p-value*
	SICU ($\bar{n}$ = 17)		GSU ($\bar{n}$ = 17)		t-value		
	Mean	SD	Mean	SD			
Learning Processes							
Concrete Experience	26.00	7.33	28.35	7.75	-0.91	0.37	
Reflective Observation	31.59	5.55	30.71	7.90	0.38	0.71	
Abstract Conceptualization	30.06	8.20	29.23	8.07	0.29	0.77	
Active Experimentation	32.41	8.76	31.70	7.90	0.25	0.81	
Environmental Press							
Divergent	5.76	0.62	5.66	0.88	0.39	0.70	
Assimilative	4.55	0.99	4.13	1.08	1.21	0.24	
Convergent	5.89	0.82	5.58	1.15	1.02	0.31	
Accommodative	5.35	0.51	5.23	0.77	0.52	0.60	

* Significance Level = $p \leq .05$

Comparison of Environmental Press Perceptions of Surgical Intensive Care Unit (SICU) and General

Surgical Unit (GSU) Nurses

* Significance Level = $p \leq .05$

(41.2%) were categorized as perceiving a predominant convergent press and one (5.9%) was categorized as perceiving a predominant accommodative press. No surgical intensive care unit nurses perceived a predominant assimilative press. A one-sample chi-square value of 13.82 for the distribution was statistically significant at the .01 level. Therefore, findings indicated that when categorized according to highest perceived press, nurses working in the surgical intensive care unit did perceive predominant divergent and convergent environmental presses.

Research question 3: Is there a predominant learning style of surgical intensive care unit nurses who report that they chose to work in the surgical intensive care unit?

All surgical intensive care unit nurses reported that they had chosen to work in the unit. No further analysis of this study variable was performed.

Research question 4: Is there a difference between learning style preference and reported job satisfaction of nurses working in an intensive care unit?

A comparison of the group means for environmental press and job satisfaction for each of the four learning style categories are presented in Table 7. Mean job satisfaction scores ranged from 3.27 to 3.71 on a scale of 1 to 5 (strongly dissatisfied to highly satisfied). A one-way analysis of variance test of the job satisfaction score means was not statistically significant ($F_{3,13} = 1.17, p = .36$). Findings indicated that no differences in perceived job satisfaction existed for surgical intensive care unit nurses when categorized by learning style preference.

Table 7

Comparison of Group Means for Environmental Press and Job Satisfaction by Learning Style Category of Surgical Intensive Care Unit (SICU) and General Surgical Unit (GSU) Nurses

Environmental Press Perceptions													
Learning Style	n	Divergent Press ^a		Assimilative Press ^a		Convergent Press ^a		Accommodative Press ^a		Job Satisfaction ^b			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
SICU ($\bar{n}$ = 17)													
Divergers	6	5.62	0.61	4.71	0.82	6.11	0.33	5.52	0.62	3.71	0.22		
Assimilators	6	5.81	0.84	4.88	1.21	5.78	0.69	5.36	0.32	3.60	0.34		
Convergers	2	5.86	0.61	4.79	0.10	5.83	0.24	5.71	0.40	3.69	0.12		
Accommodators	3	5.86	0.38	3.43	0.38	5.72	0.67	4.76	0.21	3.27	0.57		
GSU ($\bar{n}$ = 17)													
Divergers	7	5.75	0.77	4.83	1.14	6.00	0.78	5.51	0.45	3.98	0.35		
Assimilators	4	5.07	1.32	3.39	0.73	4.96	1.60	4.71	1.07	3.61	0.36		
Convergers	3	6.38	0.33	3.91	0.79	6.17	0.88	5.71	0.51	3.63	0.25		
Accommodators	3	5.48	0.30	3.67	0.83	4.83	1.20	4.81	0.87	3.69	0.09		

^aPossible Range: 1 (Low Press Perceived) to 7 (High Press Perceived)

^bPossible Range: 1 (Strongly Dissatisfied) to 5 (Highly Satisfied)

Research question 5: Is there a difference between environmental press perceptions and reported job satisfaction of nurses working in a surgical intensive care unit?

A comparison of group means for job satisfaction for each of the four environmental press categories is presented in Table 8. Mean job satisfaction scores ranged from 3.33 to 3.79 on a 5 point scale (strongly dissatisfied to strongly satisfied). A t-test of the difference in means between divergent and convergent press scores was statistically not significant ($t = -1.87$, $p > .20$). Findings indicated that no differences in job satisfaction existed for surgical intensive care unit nurses when categorized by predominant environmental press perceptions.

Research question 6: If learning style and environmental press perceptions are congruent, do intensive care nurses report a higher degree of job satisfaction?

Of the sample, three nurses had congruent learning style-environmental press perceptions (Table 9). The mean job satisfaction score of the two surgical intensive care unit nurses with congruent diverger learning style-divergent press perceptions was 3.55. The mean job satisfaction score of the nurse with congruent converger learning style-convergent press perception was 3.78. The mean job satisfaction score of the 14 nurses with non-congruent learning style-environmental press perceptions was 3.59. These findings indicated that congruency in learning style-environmental press was not necessarily associated with higher degrees of job satisfaction; however, the small sample size limited further statistical analysis of this study variable.

Table 8

Comparison of Group Means for Job Satisfaction by Environmental Press
Category of Surgical Intensive Care Unit (SICU) and General Surgical
Unit Nurses (GSU)

		Job Satisfaction Score [*]	
Environmental Press	n	Mean	SD
SICU (<u>n</u> = 17)			
Divergent Press	10	3.50	0.39
Assimilative Press	0	0.00	0.00
Convergent Press	6	3.79	0.18
Accommodative Press	1	3.33	0.00
GSU (<u>n</u> = 17)			
Divergent Press	6	3.86	0.41
Assimilative Press	1	4.17	0.00
Convergent Press	7	3.66	0.29
Accommodative Press	3	3.67	0.10

*Possible Range: 1 (Strongly Dissatisfied) to 5 (Strongly Satisfied)

Table 9

Comparison of Group Means for Job Satisfaction in Surgical Intensive
Care (SICU) and General Surgical Unit (GSU) Nurses with Congruent
Learning Style-Environmental Press Perceptions (LSI-EPQ)

Learning Style- Environmental Press Congruency	Job Satisfaction Scores [*]		
	n	Mean	SD
SICU (n = 17)			
Diverger Learning Style- Divergent Press	2	3.55	0.16
Converger Learning Style- Convergent Press	1	3.78	-
Non-Congruent LSI-EPQ	14	3.59	0.56
GSU (n = 17)			
Diverger Learning Style- Divergent Press	2	4.14	0.59
Converger Learning Style Convergent Press	1	3.39	-
Accommodator Learning Style- Accommodative Press	1	3.61	-
Non-Congruent LSI-EPQ	13	3.76	0.20

*Possible Range: 1 (strongly Dissatisfied) to 5 (Strongly Satisfied)

Note: Neither groups were congruent for assimilator learning style
and assimilative press.

Research question 7: Is there a predominant learning style preference of nurses working on a general surgical unit?

The distribution of learning style preferences are shown in Table 4. Of the 17 general surgical unit nurses sampled, seven (41.2%) preferred a diverger learning style, four (23.5%) preferred an assimilator learning style, three (17.6%) preferred a converger learning style, and three (17.6%) preferred an accommodator learning style. A one-sample chi-Square analysis of the distribution was found to be statistically not significant ($\chi^2 = 2.53$, $df = 3$, $p > .25$). Therefore, findings indicated that nurses working in the general surgical unit did not have a predominant learning style preference.

Research question 8: Is there a predominant environmental press perception of nurses working in a general surgical unit?

Mean scores for each of the four presses are presented in Table 5. Overall, the divergent, convergent and accommodative presses were similarly perceived by the general surgical unit nurses. The mean press scores range from 5.23 to 5.66. These findings indicated that the range of scores were fairly consistent between divergent, convergent and accommodative presses.

When categorized according to the highest press score perceived (Table 6), six (35.3%) general surgical nurses were categorized as perceiving a predominant divergent press, one (5.9%) was categorized as perceiving a predominant assimilative press, seven (41.2%) were categorized as perceiving a predominant convergent press, and three (17.6%) were categorized as perceiving a predominant accommodative press. A one-sample chi-square analysis of the

distribution was found statistically not significant ($\chi^2 = 5.35$, $df = 3$, $p > .10$). Therefore, findings from the study indicated that nurses working in the general surgical unit did not perceive a predominant environmental press.

Research question 9: Is there a predominant learning style of general surgical unit nurses who report that they chose to work on the unit?

All of the general surgical unit nurses reported that they had chosen to work on the unit. No further analysis of this study variable was performed.

Research question 10: Is there a difference between learning style preference and reported job satisfaction of nurses working on a general surgical unit?

The mean job satisfaction scores for general surgical nurses preferring diverger, assimilator, converger and accommodator learning styles ranged from 3.61 to 3.98 (Table 7). A one-Way analysis of variance test of the means was not statistically significant ($F_{3,12} = 1.57$, $p = .25$). Findings from the study indicated that no difference in job satisfaction existed for general surgical unit nurses when categorized by learning style preferences.

Research question 11: Is there a difference between environmental press perceptions and reported job satisfaction of nurses working in a general surgical unit?

The mean job satisfaction scores of general surgical nurses with predominant divergent, assimilative, convergent and accommodative press perceptions ranged from 3.66 to 4.17 (Table 8). A one-way analysis of

variance test of the job satisfaction score means was not statistically significant ($F_{3,12} = .99, p = .43$). Therefore, findings from the study indicated no differences in job satisfaction existed for general surgical unit nurses when categorized by predominant environmental press perceptions.

Research question 12: If learning style and environmental press perceptions are congruent, do general surgical unit nurses report a higher degree of job satisfaction?

Of the sample, four general surgical nurses had congruent learning style-environmental press perceptions (Table 9). The mean job satisfaction scores of the nurses with congruent learning style-environmental press perceptions ranged from 3.39 to 4.14. The mean job satisfaction scores of the 13 general surgical unit nurses with non-congruent learning styles-environmental press perceptions was 3.76. These findings indicated that congruency in learning style-environmental press was not necessarily associated with higher degrees of job satisfaction; however, the small sample size limited further statistical analysis of this study variable.

Research question 13: Is there a difference in learning style preference of surgical intensive care and general surgical unit nurses? A 2 X 4 chi-square analysis comparing the distribution of learning style categories between surgical intensive care unit nurses and general surgical unit nurses was found to be statistically not significant ($\chi^2 = .68, p = .88$). Furthermore, Student's t-tests comparing differences in the mean learning process scores between both surgical intensive care unit and general surgical unit nurses was not statistically significant

(Table 6). Therefore, findings from the study indicated no differences in learning style preferences between surgical intensive care and general surgical unit nurses.

Research question 14: Is there a difference in environmental press perceptions of intensive care and general surgical unit nurses?

Mean environmental press scores for each of the competencies vary slightly for each of the groups when plotted on Kolb and Fry's (1976) Competency Circle (Figure 3). Greatest differences in environmental press score means existed between the two groups in their perceptions of assimilative press competencies. Comparison of environmental press perception categories between surgical intensive care unit and general surgical unit nurses was examined using a 2 X 4 chi-square analysis. The results were found to be statistically not significant ($\chi^2 = 3.08$, $df = 3$, $p = .38$). Results of the Student's t-tests used to compare the differences in the mean environmental press scores (Table 5) were found statistically not significant. Therefore, no differences in environmental press perceptions were found between surgical intensive care and general surgical unit nurses.

Research question 15: When learning style and environmental press perceptions are congruent, is there a difference in degree of job satisfaction of intensive care and general surgical unit nurses?

The mean job satisfaction score for the two surgical intensive care unit nurses with congruent diverger learning style-divergent press was 3.55, compared to a mean job satisfaction score of 4.14 for the two general surgical nurses with congruent divergent learning style-environmental press. A Student's t-test of the differences in the job

DIVERGENT PRESS:
 (spf) being sensitive to people's feelings
 (sv) being sensitive to values
 (lom) listening with an open mind
 (gi) gathering information
 (ii) imagining implications of ambiguous situations

ASSIMILATIVE PRESS:
 (oi) organizing information
 (bcm) building conceptual models
 (tt) testing theories and models
 (de) designing experiments
 (aqd) analyzing quantitative data

CONVERGENT PRESS:
 (cnw) create new ways of thinking and doing
 (eni) experiment with new ideas
 (cbs) choosing the best solution
 (sg) setting goals
 (md) making decisions

ACCOMMODATIVE PRESS:
 (co) committing yourself to objectives
 (eo) seeking and exploiting opportunities
 (ilo) influencing and leading others
 (bpi) being personally involved
 (dp) dealing with people

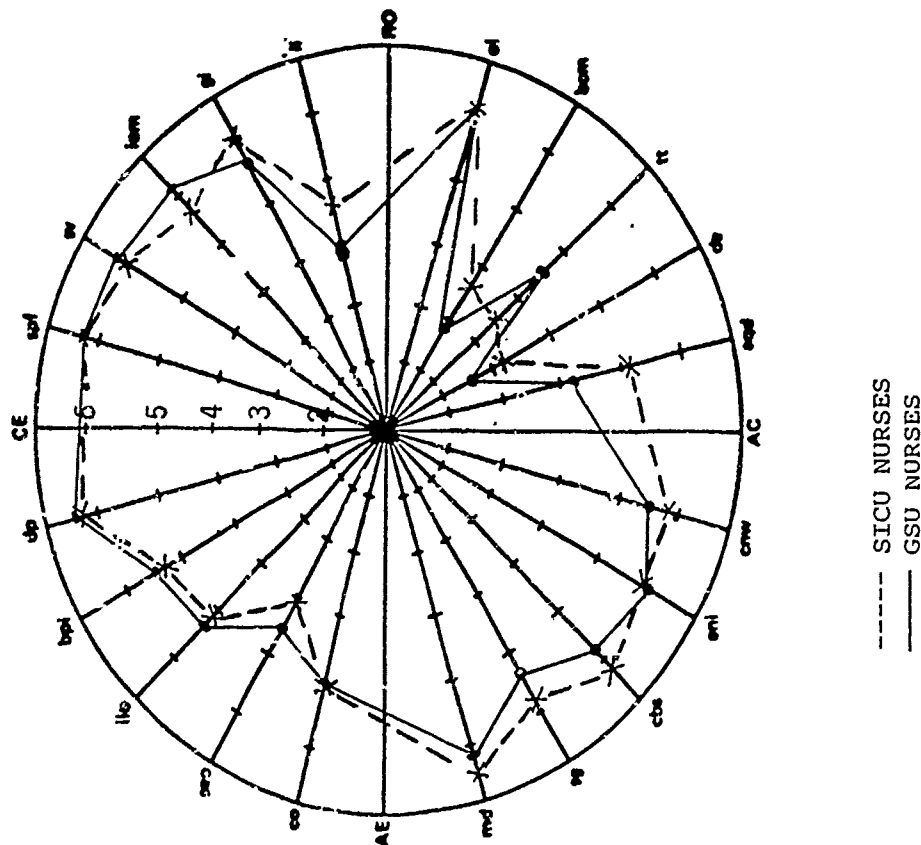


Figure 3. Environmental press perceptions of surgical intensive care unit (SICU) and general surgical unit (GSU) nurses.

satisfaction means between the two groups was statistically not significant ($t = -1.09$, $p = .39$). The surgical intensive care unit nurse and the general surgical unit nurse who displayed congruent converger learning style-convergent press varied slightly in their job satisfaction scores ($\bar{X} = 3.79$, $\bar{X} = 3.39$, respectively). Therefore, findings from this study indicated no differences in degree of job satisfaction between surgical intensive care unit and general surgical unit nurses with congruent learning style-environmental press perceptions.

Summary

Data analysis and findings were presented in this chapter. Seventeen surgical intensive care unit nurses and 17 general surgical unit nurses participated in the study. The majority of the subjects were female, 40 years of age and had worked on their units for 5 to 8 years. Differences between the groups for learning style preferences and degree of job satisfaction were statistically not significant. The distribution of environmental press categories for the surgical intensive care unit nurses was statistically significant: nine nurses perceived a predominant divergent press, seven nurses perceived a predominant convergent press and one nurse perceived a predominant accommodative press. Seven nurses in the sample had congruent learning style-environmental press perceptions. No differences in the means for job satisfaction were found between nurses with congruent and non-congruent learning style-environmental press perceptions.

CHAPTER V

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

The learning style preferences, environmental press perceptions and degree of job satisfaction of surgical intensive care unit and general surgical unit nurses were examined. In addition, the degree of job satisfaction perceived by both groups of nurses when learning style preference and environmental press perceptions were congruent was examined. Within the conceptual framework of the study, learning style preference, environmental press perceptions and learning style-environmental press congruence were considered as factors that influence job satisfaction. A descriptive study design was used to identify subjects' responses to each of the variables under investigation and descriptive statistics, one-sample and 2 X 4 chi-Square analyses, Student's t-tests and one-way analysis of variance tests were used to examine differences between the two study groups. A discussion of the results, limitations of the study, implications for nursing and recommendations for future research are presented in this chapter.

Discussion

The three questionnaires used in the study were shown to be reliable. The Cronbach alpha coefficients for each of the learning processes obtained for the Learning Style Inventory (LSI) were similar to those reported by Smith and Kolb (1985). However, the Cronbach alpha coefficient for the active experimentation dimension was .87, higher than the .78 reported by Smith and Kolb (1985). The Pearson correlations obtained between the two dimensions, concrete

experience-abstract conceptualization and reflective observation-active experimentation, were much lower than those reported by Kolb (1976) and Smith and Kolb (1985). In this study, neither group of nurses perceived strong negative relationships between the dimensions as was reported in Kolb's (1984) study. The "concrete" versus "abstract" and "action" versus "reflection" Kolb (1984) described in his theory were not evident in this population. Results from this study indicated that when answering the LSI, both groups of nurses did not consistently choose concrete learning statements over abstract learning statements (or vice versa), nor did they choose active learning statements over reflective learning statements (or vice versa). According to Kolb (1984), these results are possible because the processes in each dimension are dialectically opposed, therefore individuals could conceivably prefer both processes. This explanation would support the data obtained in this study. The Cronbach alpha coefficient obtained for the Environmental Press Questionnaire (EPQ) was .91, higher than the .75 reported by Lashinger and Boss (1989), and indicates satisfactory reliability in this study population. The Cronbach alpha coefficient obtained for the Index of Job Satisfaction Scale (IJSS) was .79, which was below the .87 Cronbach alpha coefficient reported by Alexander, Weisman, and Chase (1981) for their adapted scale. In future studies, use of an adapted version of the IJSS or a more recently published job satisfaction scale might be considered.

Differences in the demographic characteristics of the two groups were minimal. The mean age for this study sample of 34 subjects was 40 years and 91% of the sample was female. The majority of the subjects,

82%, were full time employees and all subjects had chosen to work on their units. Thirty-five percent of the subjects had associate degrees, 32% had baccalaureate degrees, and 25% had diploma degrees. On the average, subjects had worked seven years on their units and 15 years in nursing. Because research studies investigating learning styles and environmental press perceptions of employed nurses are non-existent in the literature, comparison of the demographic characteristics between this sample and other samples is not possible. However, the mean age of the nurses and average length of employment on the unit are much higher in this sample than that reported in the job satisfaction literature (Dear, Weisman, Alexander & Chase, 1982; Mueller & McCloskey, 1990). A possible explanation for these results is that the institution has been identified as a Magnet hospital. Magnet hospitals have reputations for attracting and retaining nurses, and as being excellent places to work (Kramer & Schmalenberg, 1988; McClure et al., 1983).

Differences in learning style preferences between the two groups of nurses were not statistically significant. Kolb (1984) stated that because of nursing's holistic orientation, nurses would prefer diverger and accommodator learning styles. Results obtained from this study support Kolb's prediction. Fifty-three percent of the surgical intensive care unit nurses and 59% of the general surgical unit nurses preferred diverger and accommodator learning styles as predicted by Kolb's theory (1984). Lashinger and Boss (1984) reported similar percentages in nursing student populations. Of the abstract learning styles, both groups had higher percentages (29%) of nurses preferring assimilator learning styles to converger learning styles. Highfield

(1988) also reported a high percentage of assimilator learning styles in a sample of older, baccalaureate nursing students from primarily minority backgrounds.

Perceptions of job satisfaction for each of the four learning styles were not significantly different in both groups of nurses. For both groups, the surgical intensive care and general surgical unit nurses who preferred diverger learning styles ($n = 13$) were more satisfied with their jobs ($\bar{X} = 3.82$, S.D. = .25). Surgical intensive care nurses who preferred accommodator learning styles ($n = 3$, $\bar{X} = 3.27$, S.D. = .57) and general surgical unit nurses who preferred an assimilator learning style ($n = 4$, $\bar{X} = 3.61$, S.D. = .36) were the least satisfied with their jobs. In both groups, the job satisfaction scores indicated that, overall, nurses were "slightly" satisfied with their jobs. Although comparative studies investigating job satisfaction and learning style preferences are non-existent in the published literature, the job satisfaction scores obtained in this study are consistent with results obtained by Godfrey (1978) and Mottaz (1988). The scores were not significantly different between each of the learning styles to clearly define the relationship which exists between job satisfaction and learning style. A larger sample size, possibly using a more precise job satisfaction scale, may clarify the relationship between the two variables.

Differences in environmental press perceptions between surgical intensive care and general surgical unit nurses were statistically not significant. A majority of the subjects, 85%, perceived either a predominant divergent (44%) or convergent press (41%). In the sample,

differences among the four environmental press scores were small, which suggests that the environments of both units exert a fairly balanced press. Similar conclusions were reported by Lashinger (1986) in her study environmental press perceptions of third year baccalaureate nursing students. Small differences between environmental press perceptions could support the suggestion that individuals preferring various learning styles are able to adjust to the predominant environmental press of the unit. An interesting finding from this study was that only one general surgical unit nurse perceived a predominant assimilative press. One possible explanation for this result is that the competencies associated with an assimilative press are not readily associated with nursing environments. Competencies such as building conceptual models, designing experiments and analyzing quantitative data are not considered primary job characteristics in nursing units.

As with learning styles, job satisfaction scores were not significantly different for each of the environmental press perceptions. Within the two groups, surgical intensive care nurses who perceived a convergent press were the most satisfied with their jobs, whereas the one general surgical unit nurse who perceived an assimilative press was the most satisfied. Excluding the groups that were composed of only one subject, the mean job satisfaction scores varied little across the environmental press perception categories. Therefore, on the basis of these data a relationship between the two variables cannot be determined. A larger sample size and more precise job satisfaction tool may more effectively describe the relationship between environmental press perceptions and job satisfaction.

Only 20% of the nurses sampled had congruent learning style-environmental press perceptions. The percent of expected learning style-environmental press perception congruency within a study population has not been reported in the literature. However, Kolb et al. (1981) in their study of learning style-environmental press congruence stated that individuals choose disciplines with environments compatible with their own learning styles. Findings from this study did not support this conclusion. Although diverger and assimilator learning styles were the most preferred in the sample, divergent and convergent presses were the most perceived, and no nurses were congruent for assimilator learning style-assimilative press congruence. Furthermore, all of the nurses had chosen to work on their units. With the representation of all four learning styles among the subjects and a small percentage of learning style-environmental press perception congruence within the sample it is unlikely that these subjects chose nursing because of its environmental press compatibility with their learning styles.

Differences in job satisfaction scores were not statistically different between nurses with congruent and non-congruent learning style-environmental press perceptions. In this sample, the two general surgical nurses with congruent diverger learning style-divergent press perceptions reported the highest mean job satisfaction score. However, the standard deviation was .59 indicating that one of the respondents was satisfied whereas the other respondent was only marginally satisfied. The small number of nurses with congruent learning style-environmental press perceptions precludes identification of the

relationship between these variables. Therefore, the conclusion of Kolb et al. (1981) that individuals with congruent learning style-environmental press perceptions are more satisfied with their jobs could not be supported with the findings obtained in this study. One possible explanation to the low number of nurses with congruent learning style-environmental press perceptions was the categorization of environmental press perceptions according to the highest calculated press score. Data obtained from the study indicated that in both groups, the four presses were similarly perceived and the actual differences between the presses were small. However, subjects were placed into categories of environmental press perceptions, when in fact, they had perceived the four environments similarly.

A second explanation of the low congruency rate, may be related to the instruments used to categorize learning style and environmental press perceptions. In their study of job satisfaction and learning style-environmental press perception congruency Kolb et al. (1981) used the Adaptive Competency Profile (ACP) an alternate instrument used to measure learning style preferences. The ACP is constructed and scored similarly to the EPQ. In this study, use of the LSI in lieu of the ACP may not have as accurately identified learning style-environmental press perception congruency. However, reliability and validity of the ACP has not been established (Kolb et al., 1981; Lashinger & Boss, 1989). A more complete investigation of the relationship between learning style-environmental press congruency and job satisfaction might be accomplished using the ACP and EPQ in a larger sample size.

Limitations of the Study

There are several limitations to the study. The size of the sample was relatively small ($n = 34$). A larger sample may have produced more significant results. A second limitation is that data collection occurred only at one site and subject sampling was not random, thereby limiting the generalizability of the findings. Furthermore, the sample may have been biased because not all eligible respondents returned the questionnaires and because of the inherent bias of self reports. Lastly, both the LSI and EPQ were developed to test for differences between professional groups. Neither instruments may have been specific enough to detect differences within professional groups.

Implications for Nursing

The results obtained from this study, although not statistically significant, are clinically relevant. All four learning style preferences were represented in both groups of nurses. This information is useful from a managerial perspective. In learning situations, whether formal or informal, teaching strategies should be designed to target all four learning styles. For example, unit inservices to introduce new equipment onto the unit should include a brief lecture with theoretical reasoning to capture the attention of the abstract learners; and, group discussion, handouts and diagrams to capture the attention of the concrete learners. The inservice program should provide learners who favor reflective observation process the opportunity to directly observe the equipment being taught, and should allow the learners who favor active experimentation process the opportunity to practice with the equipment. Application of the

knowledge that all four learning style preferences are represented on a unit could ultimately enhance staff learning activities.

The responses to environmental press perceptions in both groups of nurses were similar. Both surgical intensive care unit and general surgical unit nurses perceived predominant divergent and convergent presses. With knowledge of predominant environmental competencies, staff educational programs could be implemented to strengthen perceived staff weaknesses in any of the competencies. For example, if staff members were having difficulty "imagining implications to ambiguous situations," then creation of a staff educational program that incorporates problem solving techniques and case study scenarios could improve adaptation to environmental demands. Furthermore, knowledge of required environmental competencies could be reviewed during staff orientation programs to prepare new staff members to the environmental responsibilities. This would be especially useful in the surgical intensive care unit where both divergent and convergent press competencies were strongly perceived by majority of the subjects.

Identification of preferred staff learning styles and predominant unit environmental press perceptions can be used as managerial tools to improve employee learning effectiveness and adaptation to the work environment. Knowledge and integration of learning style preferences and environmental press perceptions of employees in the work setting may or may not improve employee job satisfaction. No conclusions could be drawn from the data obtained in this study. Future research studies using larger sample sizes, various research designs and different measurement tools can be conducted to investigate the relationship of

these strategies to improve employee job satisfaction.

Recommendations for Future Research

The recommendations for future research include:

1. Conduct a study to compare learning style preferences and environmental press perceptions of intensive care and general surgical unit nurses randomly drawn from several hospitals.
2. Conduct a study using the Adaptive Competency Profile in place of the Learning Style Inventory and a job satisfaction scale which has been developed for the nursing profession.
3. Compare learning style preferences and environmental press perceptions between diploma/associate degree prepared nurses with baccalaureate/graduate prepared nurses.
4. Examine the effectiveness of teaching strategies in continuing education programs that incorporated the predominant learning styles of course participants.

Summary

A discussion of the results of the study, study limitations, implications to nursing and recommendations for future research were presented in this chapter. A descriptive study design was used to examine learning style preferences and environmental press perceptions and the relationship of these variables to job satisfaction of surgical intensive care and general surgical unit nurses. A secondary purpose was to examine if differences in job satisfaction exist when learning style-environmental press perceptions are congruent. The total sample consisted of 34 subjects. Multiple statistical analyses showed no statistically significant differences between both groups for the

variables under investigation with the exception of environmental press perceptions of surgical intensive care unit nurses. Findings from this study can be used to develop managerial strategies targeted at improving employee learning effectiveness and adaptation to unit environments. Recommendations for future research included replication of this study using several intensive care and general nursing units, collecting data at several sites to increase generalizability, comparing educational preparation with learning style preference and environmental press perceptions, and investigating the influence of learning style preferences in staff educational programs on learner outcomes.

APPENDIX A
CLINICAL AGENCY ACCESS LETTER



Carondelet St. Mary's

January 22, 1991

Julia E. Nelson
5855 N. Kolb Road #12208
Tucson, AZ 85715

Dear Ms. Nelson:

Your request to conduct your research entitled, "Differences in Learning Style, Environmental Press Perceptions and Job Satisfaction of Surgical Intensive Care and Ward Nurses," in the surgical and medical intensive care units and the surgical unit at Carondelet St. Mary's Hospital and Health Center has been approved.

The following individuals will be your contact people for the designated units. Each of these contact people will assist you in making arrangements for distribution and collection of your questionnaires.

SICU: Sookie Dominguez, RN, Unit Director, 622-5833, extension 1345

Unit 3500 (Surgical): Rita Brady, RN, Unit Director, or Delia Vidal, RN, extension 3540

MICU: Nancy Denny, RN, extension 1360

We wish you much success in your research endeavor. We ask that you inform your contact people and me when you have completed data collection. Also, please let us know how we might assist you in your plans to share your research findings with the staff at St. Mary's.

Please let me know if you have any questions or need any assistance as you get your project underway.

Sincerely,

Gerri S. Lamb, PhD, RN
Clinical Director for Research

GL/pb

1601 West
St. Mary's
Road

P.O. Box
5386

Tucson
Arizona
85703

(602)
622-5833

A Community Hospital and Health Center
Sponsored by the Sisters of St. Joseph of Carondelet

APPENDIX B

HUMAN SUBJECTS APPROVAL LETTER

College of Nursing

Tucson, Arizona 85721
(602) 626-6154

MEMORANDUM

TO: Julia E. Nelson
5855 N. Kolb #12208
Tucson, Arizona 85715

FROM: Carolyn Murdaugh, Ph.D., R.N., F.A.A.N.
Director of Clinical Research

DATE: December 21, 1990

SUBJECT: Human Subjects Review:

*Differences in Learning Style,
Environmental Press, and Job Satisfaction
of Surgical Intensive Care and Unit
Nurses*

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research if you need access to it.

We wish you a valuable and stimulating experience with your research.

CM:dbf

APPENDIX C
PROJECT DISCLAIMER FORM

LEARNING STYLES, ENVIRONMENTAL PRESS PERCEPTIONS

AND JOB SATISFACTION AMONG INTENSIVE CARE AND WARD NURSES

Registered Nurses who work on surgical and medical intensive care units and general surgical wards are being solicited to voluntarily answer the statements included in these questionnaires. The purposes of this study are to identify the relationships concerning how you learn, the tasks required in your job, and how satisfied you are with your job. You are being asked to voluntarily give your opinion on the statements in these questionnaires. By responding to the questionnaires, you will be giving your consent to participate in this study. Your name is not on the questionnaires, and you may choose not to answer some or all of the questions, if you so desire. Whatever you decide, your job will not be affected in any way. Your questions will be answered and you may withdraw from the study at any time. There are no known risks. The only persons who have access to the data will be the principal investigator and her thesis advisor. The report of the study will contain only grouped data. The questionnaires take approximately 15 to 20 minutes to complete. After completing, please mail the questionnaire back to the investigator in the stamped, pre-addressed envelope, or seal the questionnaires in the enclosed envelope and place in the box designated for this project above the employee mailboxes on your unit. Thank-you for any consideration given this study. If you have any questions please contact me.

Julia E. Nelson, R.N.
Graduate Student, University of Arizona
5800 N. Kolb Rd. #12208

APPENDIX D
DEMOGRAPHIC DATA FORM

Demographic Data

Directions: Please respond to each of the following questions in the space provided.

1. Subject Identification Number: ____
2. Age (in years): ____
3. Sex:
 - a. Female ____
 - b. Male ____
4. Highest degree/diploma held at the present time:
 - a. RN Diploma ____
 - b. ADN ____
 - c. BSN ____
 - d. BS/BA-other ____
 - e. Master's degree or higher ____
5. Employment Status: (check one)
 - a. Full time employee ____
 - b. Part time employee ____
6. What area are you presently working in the hospital?
 - a. Surgical Intensive Care Unit ____
 - b. General Surgical Unit ____
7. Did you choose to work in the unit/ward you are presently working?
 - a. Yes ____
 - b. No ____
8. How long have you worked on your present unit/ward?
(years & months) ____
9. Years and months of total nursing experience (current job plus any previous experience): ____

APPENDIX E
DATA COLLECTION TOOLS

Sample questions from the Learning Style Inventory include:

1. When I Learn: ☐ I like to deal with my feelings
 ☐ I like to watch and listen
 ☐ I like to think about ideas.
 ☐ I like to be doing things.
6. When I am learning: ☐ I am an intuitive person.
 ☐ I am an observing person.
 ☐ I am a logical person.
 ☐ I am an active person.
12. I learn best when: ☐ I am receptive and open-minded.
 ☐ I am careful.
 ☐ I analyze ideas.
 ☐ I am practical.

The Learning Style Inventory can be purchased from:

McBer and Company
137 Newbury Street
Boston, MA 02116
(617) 437-7080

ENVIRONMENTAL PRESS QUESTIONNAIRE

ID# _____

To what extent do you need these work abilities to do well in your working environment? (Circle the appropriate number to the right of each statement)

		Not at All Important				High Level Needed			
1.	Listening with an open mind. . . .	1	2	3	4	5	6	7	
2.	Developing comprehensive plans. . .	1	2	3	4	5	6	7	
3.	Building Conceptual Models.	1	2	3	4	5	6	7	
4.	Committing yourself to objectives. .	1	2	3	4	5	6	7	
5.	Influencing and leading others. . .	1	2	3	4	5	6	7	
6.	Making Decisions.	1	2	3	4	5	6	7	
7.	Designing Experiments.	1	2	3	4	5	6	7	
8.	Being sensitive to values.	1	2	3	4	5	6	7	
9.	Being able to adapt to changing circumstances.	1	2	3	4	5	6	7	
10.	Generating alternative ways of doing things.	1	2	3	4	5	6	7	
11.	Organizing information.	1	2	3	4	5	6	7	
12.	Setting goals.	1	2	3	4	5	6	7	
13.	Experimenting with new ideas and approaches.	1	2	3	4	5	6	7	
14.	Imagining implications of ambiguous situations.	1	2	3	4	5	6	7	
15.	Identifying and defining problems. .	1	2	3	4	5	6	7	
16.	Dealing with people.	1	2	3	4	5	6	7	
17.	Gathering information.	1	2	3	4	5	6	7	
18.	Seeking and exploiting opportunities.	1	2	3	4	5	6	7	
19.	Communicating with others. . . .	1	2	3	4	5	6	7	
20.	Analyzing quantitative data. . . .	1	2	3	4	5	6	7	

(Environmental Press Questionnaire Continued)

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 21. Being sensitive to people's feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Being personally involved. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Testing theories and ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Measuring and evaluating effective
performance. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Working in groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Seeing how things fit in the big
picture. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. Choosing the best solution to a
defined problem. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Used with permission from: Kolb, D. A., Wolfe, D. M., Fry, R. E., Bushe, G., Gish, G., & Griggs, W. H. (1981). Professional education and career development: A cross sectional study of adaptive competencies in experiential learning. (Report No. CE 030519). Cleveland, OH: Case Western Reserve University, Weatherhead School of Management. (ERIC Document Reproduction Service No. ED 209 493)

INDEX OF JOB SATISFACTION

ID # _____

Some jobs are more interesting and satisfying than others. We want to know how people feel about their jobs. This blank contains eighteen statements about different aspects of jobs. You are to circle the response next to each statement which best describes how you feel about your present job. There are no right or wrong answers. We would like your honest opinion on each one of the statements.

SA = Strongly Agree

A = Agree

U = Undecided

D = Disagree

SD = Strongly Disagree

- | | | | | | |
|---|----|---|---|---|----|
| 1. My job is like a hobby to me. | SA | A | U | D | SD |
| 2. My job is usually interesting enough to
keep me from getting bored. | SA | A | U | D | SD |
| 3. It seems that my friends are more interested
in their jobs. | SA | A | U | D | SD |
| 4. I consider my job rather unpleasant. | SA | A | U | D | SD |
| 5. I enjoy my work more than my leisure time. | SA | A | U | D | SD |
| 6. I am often bored with my job. | SA | A | U | D | SD |
| 7. I feel fairly well satisfied with my
present job. | SA | A | U | D | SD |
| 8. Most of the time I have to force myself to go
to work. | SA | A | U | D | SD |
| 9. I am satisfied with my job for the time being. | SA | A | U | D | SD |
| 10. I feel that my job is no more interesting
than others I could get. | SA | A | U | D | SD |
| 11. I definitely dislike my work. | SA | A | U | D | SD |
| 12. I feel that I am happier in my work than
most other people. | SA | A | U | D | SD |
| 13. Most days I am enthusiastic about my work. | SA | A | U | D | SD |
| 14. Each day of work seems like it will never end. | SA | A | U | D | SD |
| 15. I like my job better than the average worker
does. | SA | A | U | D | SD |

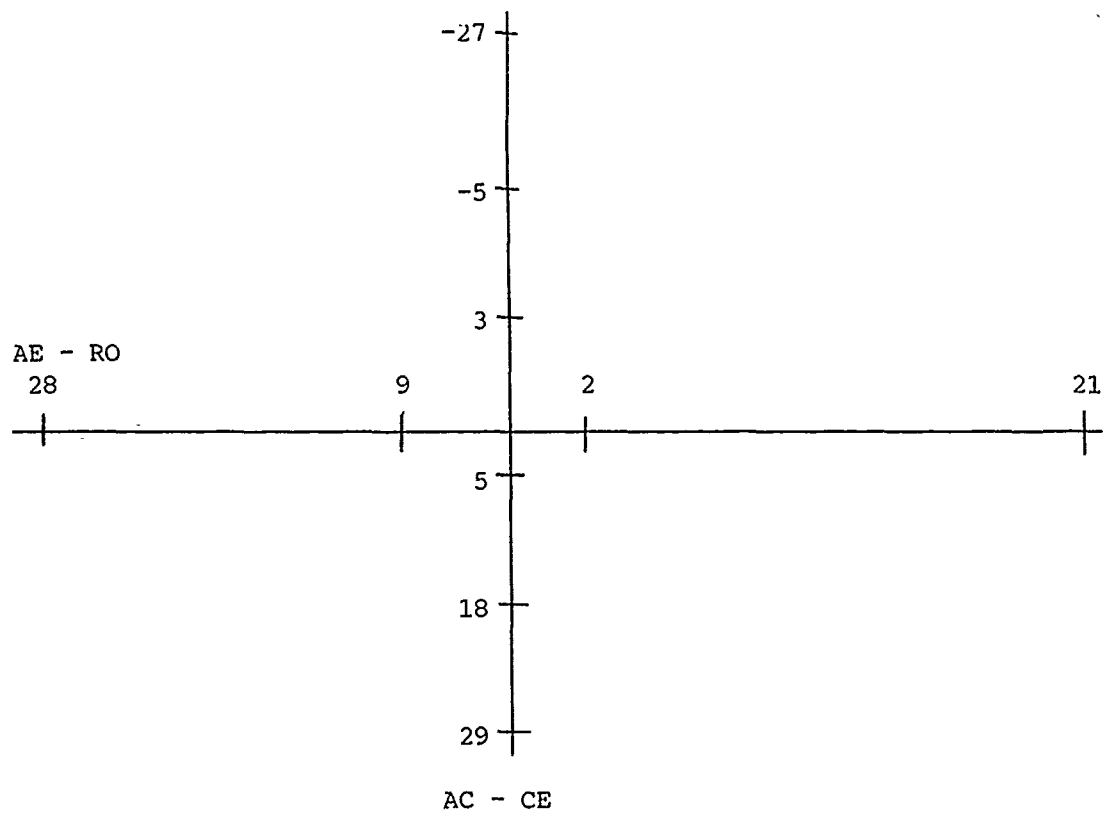
(Index of Job Satisfaction Continued)

16. My job is pretty uninteresting. SA A U D SD
17. I find real enjoyment in my work. SA A U D SD
18. I am disappointed that I ever took this job. . SA A U D SD

Used with permission from: Brayfield, A. H., & Rothe, H. F. '1951).
An index of job satisfaction. Journal of Applied Psychology, 35(5),
307-311.

APPENDIX F
LEARNING STYLE GRID

Learning-Style Grid



The Learning-Style Grid can be purchased from:

McBer and Company
137 Newbury Street
Boston, MA 02116
(617) 437-7080

APPENDIX G
COPYRIGHT PERMISSION FOR LSI

M C B E R & C O M P A N Y

September 24, 1990

Julia Nelson
5855 North Kolb #12208
Tucson, Arizona 85712

Dear Ms. Nelson:

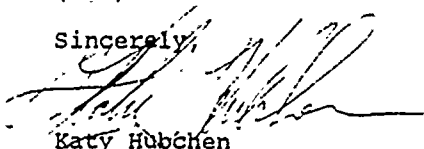
You have our permission with this letter, to use the Kolb Learning Style Inventory (LSI) for your research project provided that you do not photocopy or reproduce the instrument in any manner to gather information from your test subjects.

We do have available a research version of the LSI (designed for data collection) which consists of the test sheet or questionnaire and the profile for plotting the information. This version is sold in packages of twenty-five for \$30.00. You may purchase the directions for scoring separately for \$7.00 each.

We do not handle Kolb's Environmental Press Questionnaire (EPQ) at present. I suspect that this instrument may still be in the early stages of development. For further clarification, I suggest contacting Dr. Kolb's office directly at Case Western Reserve University in Cleveland. The number is (216) 368-2055.

If I can be of any further assistance, please contact me at (617) 437-7080.

Sincerely,



Katy Hubchen
Supervisor
Training Resources Group

APPENDIX H
COMPETENCY CIRCLE OF ENVIRONMENTAL PRESS

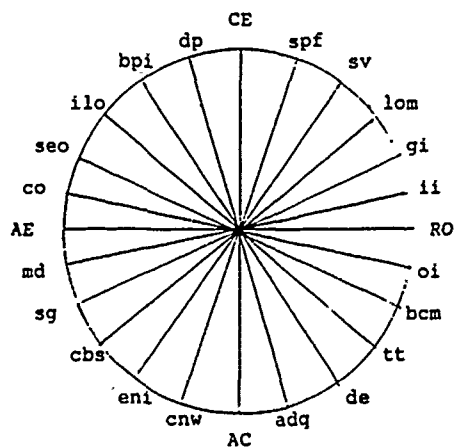
Competency Circle of Environmental Press (Kolb & Fry, 1976)

ACCOMMODATOR

(co) committing yourself to objectives
 (seo) seeking and exploiting opportunities
 (ilo) influencing and leading others
 (bpi) being personally involved
 (dp) dealing with people

DIVERGER

(spf) being sensitive to people's feelings
 (sv) being sensitive to values
 (lom) listening with an open mind
 (gi) gathering information
 (ii) imagining implication of ambiguous situations



CONVERGER

(cnw) create new ways of thinking and doing
 (eni) experiment with new ideas
 (cbs) choosing the best solution
 (sg) setting goals
 (md) making decisions

ASSIMILATOR

(oi) organizing information
 (bcm) building conceptual models
 (tt) testing theories and models
 (de) designing experiments
 (adq) analyzing quantitative data

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