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A REPERTORY GRID INVESTIGATION OF SIMILARITIES AND DIFFERENCES IN WORK VALUES AND INTERPERSONAL PERCEPTIONS AMONG NURSING STUDENTS, NURSING FACULTY AND STAFF NURSE ROLE MODELS

by

Bette Barbara Case

A Dissertation Submitted to the Faculty of the Graduate School

of Loyola University of Chicago in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

March

1987

ACKNOWLEDGEMENTS

The author gratefully acknowledges the support and assistance of Dr. Ronald Morgan, director of this dissertation and members of the dissertation committee: Dr. Marilyn Bunt, Dr. Steven Miller and Dr. Martha Wynne. The cooperation of the faculty and students of the Marcella Niehoff School of Nursing and the Nursing Department at Loyola University Medical Center enabled the collection of data. Donna Starsiak, coordinator of the course in which subjects were participating, provided valuable assistance in orienting the author to the course and in accessing subjects. Jack Corliss, Academic Computing Services, and the consulting staff of the Water Tower Campus Computing Center were extremely helpful with data analysis. Robert Case and Associates staff supported production of this paper with graphics and clerical expertise and resources. The important contributions of all these individuals are deeply appreciated by the author.

VITA

The author, Bette Barbara Case, is the daughter of Dr. Earle and Marion Sunderhaft Barnes. She was born November 1, 1945 in Syracuse, New York.

Her elementary and secondary education was obtained at Lowville Academy and Central School, Lowville, New York, graduating in June, 1963, with a New York State Regents' Diploma with honors. In June, 1967 she received the Bachelor of Science in Nursing degree, cum laude, from Syracuse University School of Nursing. In 1966, while attending Syracuse University, she was elected to Sigma Theta Tau, the international honor society of nursing. She received the Master of Science in Nursing degree in February, 1976 from Loyola University of Chicago.

During her 20 year career in nursing, she has held a variety of positions in staff nursing, school health nursing, nursing education and nursing education administration. She was School Health Nurse-Teacher at Parker Gray Middle School in Alexandria, Virginia and at Aviano United States Dependent School, Aviano, Italy. She has taught nursing at Syracuse University School of Nursing and Michael Reese Hospital and Medical Center School of Nursing, Chicago, Illinois. She has held administrative positions in the School of Nursing and in the Department of Nursing at Michael Reese Hospital and Medical Center. She has been an active member of the American Nurses' Association and the National League for Nursing and participated in Illinois chapter programs of both organizations.

She has published "Creating a Motivational Climate for High Quality Nursing Performance," in Nursing Management (December, 1983) and "Research Studies in Hospital Staff Development" with Mary O'Leary and Deborah Marks in Review of Research in Nursing Education, volume I, William Holzemer, ed. (New York: National League for Nursing, 1986)

In 1976, she was admitted to Loyola University of Chicago Graduate School, enabling her to complete the Doctor of Philosophy degree in 1987.

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CHAPTER I

INTRODUCTION

This study was conducted within the context of the nursing profession. Specifically, role modeling was carefully examined within an existing learning situation (a clinical nursing course) which was a part of an academic nursing education program. The learning situation took place during the latter half of the last semester of the senior year of a baccalaureate degree nursing program. Each student was assigned to work with a particular nursing staff member (termed mentor) at a university medical center. The student worked the same schedule as the mentor for the duration of the course, including evening and night shifts and weekends. A team of nursing faculty was responsible for the classroom and clinical teaching of this nursing course. Each faculty member supervised a group of students, made frequent rounds, interacting with each student and mentor and met for a weekly seminar with the group of students. For the student, this clinical experience provided an intensive exposure to a particular staff nurse role model, and the first opportunity to implement some aspects of the staff nurse role, including realities of the clinical work situation.

Differences between nursing faculty and nurses whose primary function is to provide nursing care have been well documented (Smith, 1965; Kramer, 1974; Cason and Beck, 1982, Dalme, 1983) and frequently discussed (Styles, 1982, Novak, 1983; Peterson, 1983; Turnbull, 1983) in nursing literature. In general, nursing faculty members compared with their nursing service colleagues are characterized as taking a more idealistic, individualized and intellectual perspective on nursing care and nursing performance. These differences which

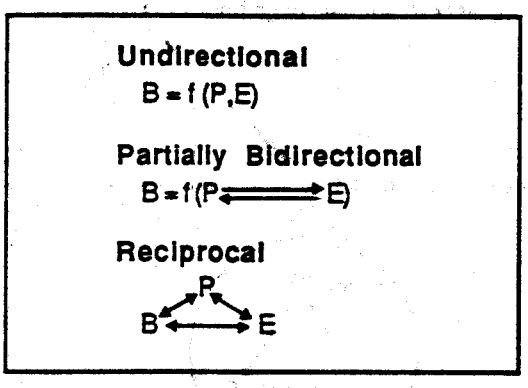
are often referred to as the division or gap between nursing education and nursing service have created a phenomenon called "reality shock" (Kramer, 1974) for the new graduate nurse. Reality shock is the result of a conflict between the value systems and expectations of the "school subculture" and the "work subculture" (Kramer, 1974). Nursing service administrators and new graduate nurses alike reportedly feel disillusioned when they discover that the new graduate is unprepared to function adequately in the work situation (Schorr, 1978). There has been great debate about whose responsibility (i.e., nursing service or nursing education) it is to solve this problem. Over the past ten years, unification and collaboration models have been proposed and implemented across the country (Clark, 1981; MacPhail, 1983). These efforts represent an attempt at rapprochement between nursing service and nursing education. In general, these models require that all nurses accept some responsibility for both patient care and education of students (and in some settings, for nursing research and consultation as well), regardless of the classification of their primary job functions as patient care, education, management or research. It has been suggested that providing clinically expert role models for nursing students during their educational programs is one way to bridge the gap between nursing service and nursing education (Quint, 1967; Dalme, 1983; MacPhail, 1983; Peterson, 1983). In addition to the role modeling influences of nurses whose primary job function is providing nursing care, students may benefit from the role modeling influences of nursing faculty (Archer and Fleshman, 1981; Dalme, 1983; Meyer, 1983).

The term role model appears in job descriptions of practicing nurses not necessarily engaged in formal clinical teaching, particularly nurse managers and Clinical Nurse Specialists. Role modeling has been identified as an important ingredient in the development of nurse researchers (Mayer, 1983; Werley and Newcomb, 1983) and is central to one particular formulation of a theory and paradigm for nursing (Erickson, Tomlin and Swain, 1983).

It is often suggested that knowledge of psychology (Mahoney, 1983) and particularly of the modeling process (Bandura, 1977b; Severance and Gottsegen, 1977) could benefit from investigations set in complex and natural settings. Little research has been reported regarding the functioning of role models in the development of professional identity in nursing (Dalme, 1983). Previous research on modeling has been either of a highly controlled experimental nature (Bandura, 1963; 1966; 1968; 1973; 1977b; Severance and Gottsegen, 1977) or, when conducted in a more natural setting, has compared modeling with other teaching or therapeutic methods (Teevan and Gabel, 1978; Chalmers and Wager, 1979; Frank, 1982; Hall and Cairns, 1984) without examining the modeling process and its correlates. The present study represented a middle ground between these two approaches by exploring role modeling in a natural setting and attempting to identify some of its behavioral and situational correlates.

The theoretical rationale for the design and implementation of the present study is imbedded within the context of a cognitive social learning perspective: specifically, reciprocal determinism. Reciprocal determinism, as discussed by Bandura (1978, 1983) asserts that a person, that person's behavior and that person's environment all influence one another.

Figure 1. Reciprocal Determinism

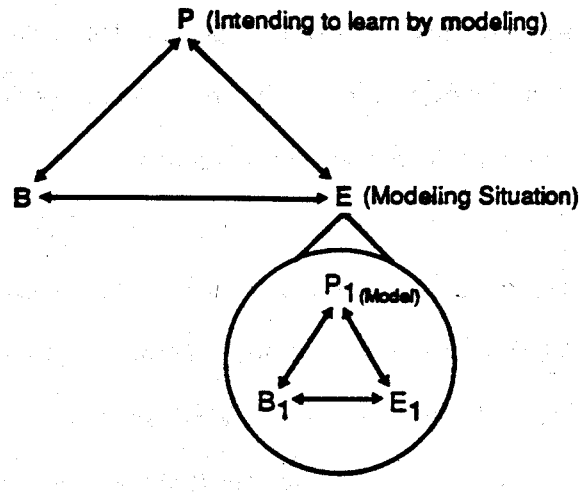


Schematic representation of three alternative conceptions of interaction. (B = Behavior, P = Cognitive and other personal factors, and E = Environmental events.) (Bandura, 1978 p.345)

As displayed in Figure 1, reciprocal determinism, in contrast with other formulations of determinants of human behavior, places greater emphasis upon the active role of cognition and other personal factors and posits a direct relationship between behavior and environment and between a person and that person's behavior. The nature of this interaction is reciprocal over time (Phillips and Orton, 1983; Bandura, 1983), perhaps as a spiral along a temporal dimension.

Modeling, or learning through observation, which has been of great research interest to Bandura (1963; 1966; 1968; 1973; 1977b) can be interpreted as a microcosm of reciprocal determinism. The environment, in the modeling situation interpretation, can be considered to be itself composed of persons (including models), persons' behavior (including behavior to be modeled), situational, and other non-person environmental factors. A person can enter this environment, intending to learn by modeling the behavior of someone in this environment. That person and that person's behavior will both influence and be influenced by the (modeling) environment, as Figure 2 illustrates.

Figure 2. Reciprocal Determinism in the Modeling Situation



Of course learning through modeling may occur without a person necessarily intending to learn in this fashion and entering a situation for that purpose. Learning by modeling is reported to be a natural occurrence in development (Achenbach, 1978) and socialization (Bandura, 1969). For the purpose of the study reported here, however, the focus is upon intentional learning by modeling as a part of an overall planned educational process.

The relationship between a student and role model can be compared with the relationship between a client and psychotherapist. A person intending to learn by modeling enters the situation with the expectation of changing behavior and/or certain personal factors (cognitions, attitudes, values, knowledge, skills) through interaction in the situation. The individual who enters psychotherapy does so with similar expectations. Certain components of the therapeutic relationship are related to therapeutic change and are common among all types of therapies: the client's appraisal of self; the client's belief that the therapist can help; experience of success by the client; active participation by client and therapist; a rationale, conceptual scheme or myth regarding the process, shared by client and therapist; a healing setting (Frank, 1982); reconstructions of personal meaning for the client rather than return to equilibrium and an interplay of feedback (therapist response and reactions to client) and feedforward (client's active restructuring) mechanisms (Mahoney, 1982). The components of the effective psychotherapeutic relationship may have parallels in the modeling relationship which is effective in producing change in the person who enters the situation to become more like the model. The present study was designed to explore some of the personal factors associated with students and role models and their interaction in relation to the change which occurs through learning by modeling. The type of reciprocal feedback described between therapist and client, and between role model and student is an important ingredient of reciprocal teaching (Resnick, 1985; Brown and Campione, 1986). The reciprocal teaching procedure makes use of specialized social interaction which includes not only the expert

performance of the model, but also tailored feedback and progressively greater responsibility in performance for the learner. Through feedback, modeling and increasingly fuller performance, the learner gradually attains independent performance.

The process of learning by modeling is an important means by which a person learns various roles in society and incorporates certain attributes observed in other people into personal structures. Modeling, in this context, especially where a particular defined role in society is concerned, is frequently referred to as role modeling.

Role modeling is often employed as a means of learning in educational and training programs preparing individuals for professions and vocations and as a means of personal, professional and career development beyond basic educational preparation. The preceptor-student relationship is one example of role modeling at work in the educational preparation of health care providers. The preceptor is a practitioner of a particular health care discipline (dentistry, physician's assistant, nursing) with whom a student of the discipline is placed for learning purposes. The student observes and works with the preceptor. The student participates in the care of the preceptor's clients at the preceptor's discretion and depending on the knowledge and skill level of the student and the objectives of the clinical course in which he or she is enrolled. The preceptor is usually not a faculty member of the educational program, though some may receive faculty appointment. The student's performance is evaluated by a supervising faculty member, usually with the input of the preceptor. Presently, preceptorship is receiving national attention in the nursing profession (Turnbull, 1983) due to its applicability as a teaching method in schools of nursing (Walters, 1981; Clark, 1981; Chickerella and Lutz, 1981; Turnbull, 1983, Stuart-Sidall and Haberlin, 1983; Peterson, 1983) and in staff development, inservice education and continuing education for nurses (May, 1980; Boyer, 1981). In addition to the role modeling component, the preceptor role has the components of resource person, supervisor and designer of instruction (Haberlin, 1983).

Fields other than health care use the preceptorship arrangement, though different terminology (such as master-apprentice) may be used.

Role modeling is also considered to be a component of mentorship. Mentorship is usually distinguished from preceptorship on the basis of the introduction to the professional network, specific career guidance, direct support and assistance which the mentor supplies to a protégé over time (Werley and Newcomb, 1983). Mentorship has received much popular attention as a key ingredient to success in the business world. Mentorship has captured the attention of the nursing profession as a means of developing and clarifying professional identity (Styles, 1982, Wolf, 1982; Fagan and Fagan, 1983) and developing professional leadership (Vance, 1982). While there is abundant literature dealing with mentoring and precepting, the concept of role modeling is little developed. Role modeling is mentioned almost without exception in literature related to mentoring, precepting and professional socialization. A role model is usually briefly defined, if at all, as one who presents an example to emulate and admire and inspires the student to follow the example (Werley and Newcomb, 1983). Role modeling "is often assumed to involve an informal and almost mystical process. As a result, the idea that one can formalize the educational process of the modeling relationship is rarely considered or acted upon." (Williams, 1982, p. 11).

Overall, the purpose of the study reported here was to identify some of the correlates of the effective modeling relationship (student's appraisal of self and of role model and perceived interpersonal styles and autonomy of the student and the role model) and contribute to knowledge regarding the educational process of the modeling relationship. The study was designed to address the following research questions:

1. What are the differences among nursing students, nursing faculty and staff nurse role models in terms of work values and perceptions of the professional interpersonal environment?

2. What changes occur in nursing students' work values and perceptions of the professional interpersonal environment over the duration of an experience in learning by role modeling?

3. Are there relationships among changes which occur in a nursing student over the duration of an experience in learning by role modeling and the work values and perceptions of the professional interpersonal environment held by the student's staff nurse role model?

4. Are there relationships among changes occurring in nursing students over the duration of an experience in learning by role modeling and any of the following parameters?

   a. student's self-appraisal

   b. student's appraisal of her staff nurse role model

   c. perceived interpersonal styles of the student and of her staff nurse role model

   d. perceived autonomy of the student and of her staff nurse role model

Data were collected from nursing students (n = 48), their assigned staff nurse mentors (n = 11), and nursing faculty (n = 36) participating in a clinical nursing course at a university medical center. Measures of work values (a portion of the Work Values Inventory) and perceptions of the professional interpersonal environment (the Role Model Repertory Grid) were administered to nursing faculty and staff nurse mentors. Measures of work values and perceptions of the professional interpersonal environment were administered to students at the outset and the conclusion of the clinical learning experience.

The Work Values Inventory (Super, 1970) is a 45 item questionnaire which measures work values on 15 different dimensions (e.g., independence, creativity, intellectual stimulation, economic return). Based upon the results of a pilot study conducted by the investigator, 30 of the 45 items were chosen for use in the present investigation.

The Role Model Repertory Grid was used to measure perceptions of the professional interpersonal environment. The Role Model Repertory Grid was developed by the investigator based on a methodology developed by George A. Kelly (1955) and adapted for use in numerous research situations in which psychological constructs used to interpret the environment are of particular interest (Ryle, 1975; Greenberg, 1978; Platt, 1980). The subject

rates individual persons on given characteristics. The content (i.e., the individual persons and given characteristics included in the Role Model Repertory Grid) used to adapt the methodology to the nursing context was based upon nursing research findings related to characteristics which differentiate among students, practicing nurses, nurse managers and nurse faculty (Kramer, 1974; Lum, 1978; Hurley, 1978; Schmalenberg and Kramer, 1979; Dalme, 1983) and published information regarding learning in the preceptor relationship (Chickerella and Lutz, 1981; Douville, 1983; Stuart-Sidall and Haberlin, 1983). The Role Model Repertory Grid used in the present investigation was a refinement of the version of the instrument pilot tested by the investigator. Content was revised to exclude ambiguous material and items which yielded little between group variance. Content was incorporated from the results of an open-ended questionnaire which had been a part of the pilot study. The revised Role Model Repertory Grid was considerably shorter than the pilot version, in that the subject was required to rate eight persons on 18 characteristics as compared with 12 persons on 21 characteristics in the pilot version. Since the total number of potential subjects was relatively small (120 persons), a high rate of participation by potential subjects was very important. Results of the pilot study suggested that reducing the length of the instruments would increase the number of actual subjects. Comparisons were made among the student, faculty and staff nurse role model groups and between students at the onset of the course and students at the conclusion of the course. These comparative results identified ways in which the student, faculty and staff nurse role models differed from one another and ways in which students changed over the duration of the experience to the extent that these differences could be measured by the instruments used. Furthermore, these comparisons indicated in what ways and to what degree students became more like their staff nurse role models (or their faculty members) over the duration of the course.

The Role Model Repertory Grid required that subjects rate themselves on given characteristics. Students rated their staff nurse role models on these characteristics.

Therefore it was possible to construct from the Grid, measures of: student self-appraisal; student's appraisal of her staff nurse role model; perceived interpersonal styles of the student and of her staff nurse role model; perceived autonomy of the student and of her staff nurse role model. The relationships among these measures and changes occurring in students over the duration of the course (toward greater similarity to staff nurse role models in work values and professional interpersonal perceptions) were examined.

Finally, findings of the proposed study are discussed within the context of reciprocal determinism. A reciprocal deterministic interpretation of findings distinguishing among three subgroups within a profession, and the persistence of these differences despite historical efforts at rapprochement, is offered. Findings demonstrated that learning occurs through role modeling and that this learning can be interpreted within the contexts of reciprocal determinism and research regarding the importance of the quality of the relationship between students and their role models. The results of this research project provide a further articulation and refinement of the reciprocal determinism paradigm; contribute to the further definition of learning by role modeling; demonstrate a unique application of the Repertory Grid methodology; suggest further applications and adaptations of the Repertory Grid methodology; suggest extensions of this research toward predictive findings; offer instructional implications for learning situations in which learning by role modeling is an intended outcome, and pose a number of questions for further research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Literature representative of five topics relevant to the study of learning by role modeling is reviewed here: reciprocal determinism, modeling/role modeling, parallels between the role model-student relationship and the psychotherapist-client relationship, mentoring/precepting and the nursing profession. Each topic is presented as a separate subsection.

The reciprocal deterministic perspective is explained and applied to the process of learning occurring through role modeling. A reciprocal deterministic analysis of differences among faculty, student and staff nurse mentor groups is offered. The relationship of the reciprocal deterministic perspective to the peculiar instrumentation (the Work Values Inventory and the Role Model Repertory Grid) of the study is also described. Modeling and role modeling are defined within the context of the reciprocal determinism model and previous research findings are presented. The point is made (in some cases explicitly by other researchers) that little investigation of the process of learning by modeling and role modeling has been conducted in complex naturalistic settings. The applicability of the specialized social interaction used in the reciprocal teaching method to the learning situation studied in the present investigation is identified. The importance of role modeling in professional socialization in nursing is discussed. A number of parallels between the role model-student relationship and the psychotherapist-client relationship are identified and discussed. Modeling has been employed extensively in therapy by Albert Bandura. Beyond this

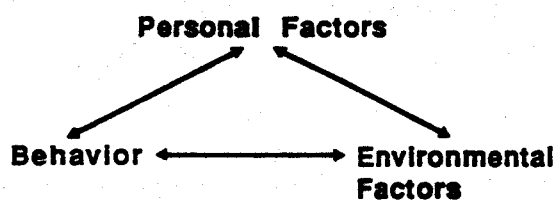
however, reported determinants of success in psychotherapy regardless of the specific therapeutic mode used have much in common with elements reported to be important to the success of learning by role modeling. Certain general goals of therapy are similar to the goals of the learning by role modeling situation which serves as the theoretical context for this study: increased self-direction and self-confidence. Issues raised regarding appropriate concerns and methodology for the study of psychotherapy and behavioral change are presented because of their relevance to the present investigation. Role modeling is considered to be a very important component of mentorship and preceptorship. The use of these two approaches in nursing education is described. Discussion of the nursing profession centers around reported differing perspectives between nurse educators and nurses whose primary role function is patient care. Ways in which the process of learning by role modeling might be useful in reconciling these differences and contributing to the development of nursing as a profession are discussed.

This combined body of literature related to reciprocal determinism, modeling/role modeling, parallels between the role model-student relationship and the psychotherapist - client relationship, mentoring/precepting and the nursing profession creates an overall framework for the investigation at hand. Specific findings reported regarding each of the five topics reviewed in this chapter were incorporated in the development of the Role Model Repertory Grid.

Reciprocal Determinism

Albert Bandura (1978, p. 346) presents a social learning model of human behavior which asserts that, "behavior, internal personal factors, and environmental influences all operate as interlocking determinants of each other." He expresses this relationship diagrammatically as shown in Figure 3 and terms this perspective reciprocal determinism.

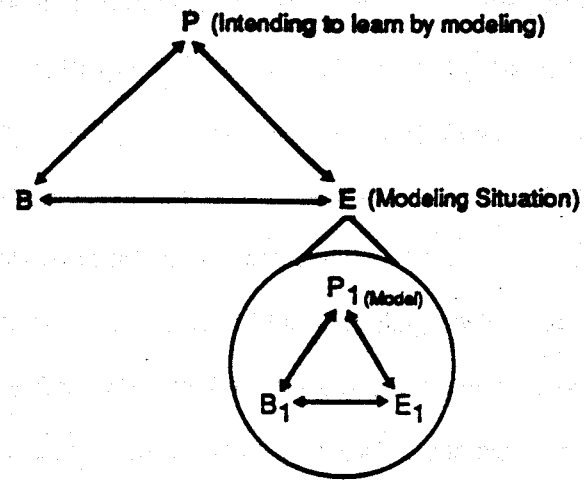
Figure 3. Reciprocal Determinism



The reciprocal deterministic perspective is distinct from other formulations of human behavior by describing behavior as an influence on personal and environmental factors--"an interacting determinant, not a detached byproduct that plays no role in the production process." (Bandura, 1983). From the reciprocal deterministic viewpoint behavior, personal factors and environmental factors are considered to be direct influences upon one another. Therefore, reciprocal determinism affords a person (i.e., personal factors) a more active role in the process and the importance of feedback among determinants (personal factors, behavior and environmental factors) is emphasized. Bandura conceptualizes the effects of these determinants upon one another as occurring reciprocally over time rather than all acting upon one another simultaneously at a given point in time (Phillips and Orton, 1983; Bandura, 1983).

Reciprocal determinism is a useful framework for the study of learning by modeling. The modeling situation, an environment which an individual may enter to learn, can be conceptualized as itself containing the determinants personal factors, behavior and environmental factors, as shown in Figure 4.

Figure 4. Reciprocal Determinism in the Modeling Situation



In Figure 4, P represents the personal (including cognitive) factors associated with an individual who enters a modeling situation in order to learn from a human model. B represents the behavior of this individual who enters the modeling situation. The modeling situation is represented by E and can be considered to contain: the personal factors associated with other persons in the environment, one of whom is the designated model (P_1); the behavior of other persons, including that of the designated model (B_1), and non-person environmental factors which are a part of the modeling situation (E_1).

Williams (1982) supplies an example in discussing the way in which a professional aspiring to leadership positions might develop the charisma requisite to this progress. "Such 'charismatic' competence is created by a process of exposure to specialized tasks in a supportive environment wherein role models (mentors) can be observed at close range and where feedback is provided." (Williams, 1982, p. 3). She cites Graen and Cashman's (1975) findings describing some specific resources which a leader might distribute differentially favoring particular subordinates to whom the leader wished to provide opportunities to practice modeled leadership behavior: "task assignments, especially non-routine tasks;

necessary information; support and a personal relationship; intervention to alter the consequences of a subordinates' actions; opportunities for participation in decision making; visibility. ... A subordinate...can reciprocate with time and energy; greater responsibility and risk taking; concern for the success of the entire unit or organization; and loyalty and support of the leaders." (Williams, 1982, p. 5). The points made by Williams underline the importance of: a reciprocal feedback process; the active roles played by model and learner; the model-learner relationship, and a supportive environment.

The effect of persons as a part of the modeling environment was investigated by Dalme (1983) in a study of nursing students' preferences for nursing faculty and nursing staff role models. She asserts that "the positive or negative character of developing identity is determined more by environmental influences that by inherent personality structure " (p. 36) and that the student culture--i.e., effect of peers as a part of the environment--influences the transmission of the values of nursing faculty and nursing staff to nursing students. Bandura's (1973) description of the component subprocesses in the social learning analysis of observational learning emphasizes the importance of feedback in shaping a learner's matching performance of modeled events.

Reciprocal determinism was chosen as a framework for this study because of the emphasis placed upon the active role of the individual person and feedback and because it is useful in accounting for differences between the nurse faculty and staff nurse subgroups within the nursing profession.

The learner plays an active role in the modeling situation when working closely with a role model. The learner incorporates messages about the model's role in the setting, indirectly experiences the role through observation and gradually acquires parts of the model's role--not totally integrating or rejecting the model's role, but evolving his own role (Douville, 1983). Whether or not an individual acquires specific modeled events is related in part to his estimate of his ability to match the performance (i.e., his self-efficacy with respect to the particular

behavior) and the functional value which he believes the behavior will serve for him (Bandura, 1977a, 1977b). The relationship between model and learner can be considered parallel to the therapist-client relationship. Strupp (1986) suggests that educational situations, as well as parenting, are more appropriately used as situations analogous to therapy than is the traditionally used medical model. It is likely that some of the client (i.e., person) factors related to change in all approaches to psychotherapy, such as hope for improvement, self-efficacy, autonomy, self-direction and self-trust (Mahoney, 1982) may have parallels in a modeling situation which is of an educational rather than therapeutic nature.

New models of human cognition emphasize the active and instrumental role of the person participating in an ongoing exchange with the environment through cognition and behavior (Mahoney, 1983). One of these approaches, motor theories, combines feedback and feedforward mechanisms. Feedforward mechanisms are concerned with active cognitive restructuring and elaboration as compared with the self-regulating or equilibrium restoring connotations of feedback (Mahoney, 1983). Reciprocal feedback functions in the professional socialization process in the socializer-socializee relationship (Conway, 1978; Hurley, 1978; Schorr, 1978; Styles, 1982; Mayer, 1983). Continuous feedback is an important element of the preceptor-student relationship (Henneman, 1983), which is a professional socialization experience for the student in the context of the professional education program.

Reciprocal teaching (Resnick, 1985; Brown and Campione, 1986) employs specialized social interaction between teacher and learner. The teacher models expert performance and supports the learner in gradual mastery. The teacher provides feedback specifically tailored to the learners' needs and based upon learner responses. The learner is encouraged to assume an active role in learning and accept progressively greater responsibility for performance. Reported experience with reciprocal teaching includes elements not directly related to the learning by role modeling context of the present

investigation: the student assuming the teacher role at intervals in a peer group, and the incorporation of feedback from the student group into the learning process (Resnick, 1985; Brown and Campione, 1986). Nevertheless, the specialized social interaction taking place between student and role model, particularly the reciprocal feedback with continuous individualized adjustments and progressively increasing responsibility of the student seems to be the same social process which takes place in reciprocal teaching.

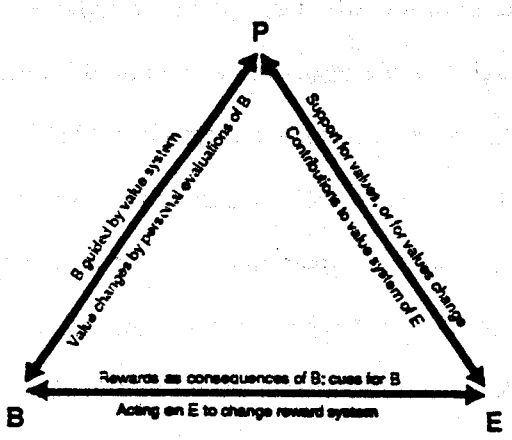
Reciprocal determinism offers some explanation for differences between nurse faculty and nurses whose primary responsibility is patient care. Each group uses a different value system to evaluate nursing performance (Smith, 1965; Kramer, 1974; Schorr, 1978). In general, faculty take a more idealized and individualized perspective. This value system, in the reciprocal deterministic view, is a part of personal factors. The value system partially determines behavior and also is partially determined by behavior. The outcomes of the behavior are experienced by the person as either satisfying or unpleasant. When satisfying, the value system may be strengthened; unpleasant outcomes may result in questioning or changing the value system. The environment contributes to, or partially determines whether outcomes are satisfying or unpleasant. The response of other persons in the environment and the privileges or material goods which may be consequences of behavior influence the persistence of the behavior, and reciprocally, the behavior may act on the environment to change the environment to a context more appropriate for the behavior. The value system and other personal factors partially determine the environment by contributing through the value system of the interpersonal environment, to the decision making process about what rewards will be available for what behaviors.

Within the environment the major goals of activities taking place heavily influence the values and behaviors which will be rewarded. If the goal of one environment is education of nursing students and the goal of another is to provide nursing care, different values and behaviors may be perpetuated in each environment. The fact that education is often

considered to be for future practice while provision of care of necessity deals with present practice accentuates differences between the two endeavors.

A person may choose a particular environment because the value system to be found and reinforced there is in close correspondence to his own, or he may seek a new situation hoping to change some of his values along the lines of what he expects will be supported in the situation he chooses. These relationships are represented in Figure 5.

Figure 5. Perpetuating a Group Value System: A Reciprocal Deterministic Interpretation



As long as a choice exists for the individual between two environments, each with a different value system, the individual is likely to choose the environment which will best support his values and value his skills or make adjustments in his values and skills so that they are in harmony with his environment. This tends to perpetuate the two value systems rather than leading to one unified value system integrating the two.

Therefore, given that which is reported above, reciprocal determinism appears to provide an appropriate integrative framework for this study. It supplies a theoretical basis for

interpreting differences among the three groups who are the subjects: nursing faculty members, nursing students, and staff nurse role models of nursing students. This application of reciprocal determinism is shown in Figure 5. Further, essential aspects of the process of learning by modeling include active roles of the learner and the model, feedback between these individuals and a supportive environment. These are also important features of the reciprocal deterministic perspective of human behavior. Finally, the reciprocal deterministic perspective supports the selection of the instruments used in this study: a portion of the Work Values Inventory and the Role Model Repertory Grid. Measuring work values and comparing results among the three groups of subjects yields information about some of the personal factors which each group brings to the learning situation. Changes in the work values of students over the duration of the experience in learning by role modeling can be discussed in the context of the effects of the learning environment (which as shown in Figure 4, contains personal factors associated with the model and the behavior of the model). The Role Model Repertory Grid provides information about how subjects discriminate among significant individuals in the professional environment on the basis of given characteristics. Thus, it identifies personal factors (in the form of discriminations about significant individuals) which are associated with each group of subjects. Comparison of selected ratings of the significant individuals provided in the Role Model Repertory Grid identifies ways in which faculty members perceive their immediate supervisors differently from ways in which staff nurse role models perceive their immediate supervisors, suggesting that each group may receive positive feedback for different behaviors. Since each subject rates "myself" on the same characteristics as the significant individuals provided, it is possible to determine which of the significant individuals the subject perceives to be most like "myself." Students rate their staff nurse role models on the given characteristics, which permits identification of ways in which students perceive themselves as becoming more like their role models over the duration of the course. Reciprocal determinism would interpret such changes on the part of

students as a result of the reciprocal interaction of the personal factors the student brought to the situation with the students' behavior in the situation and the environment (including personal factors associated with the role model and the behavior of the role model). Given characteristics upon which subjects rate themselves and significant individuals include characteristics which are important in the reciprocal deterministic perspective, such as elements of self-efficacy (self-confidence, assuming responsibility for own actions, personal power, self-direction, efficiency, leadership), rapport with others, supportiveness, flexibility and decision making based on problem solving (as contrasted with decision making based upon institutional rules). That said, reciprocal determinism appears to be a formulation particularly well suited to the study of learning by role modeling.

Modeling/Role Modeling

Bandura and his associates have produced extensive research on the subject of modeling (Bandura, 1977b). Modeling is differentiated from imitation (a concept more limited and focused upon motor behaviors) and identification (a concept more diffuse and difficult to address empirically) (Bandura, 1977b). The active role of the observer and of cognition are essential in the process of learning by modeling. The component subprocesses in the social learning analysis of observational learning include encoding and rehearsal by the observer and stress the importance of feedback and the motivational value of anticipated outcomes of behavior rather than reinforcement (Bandura and Jeffrey, 1973). Some of Bandura's specific findings in relation to modeling include: the power to control rewards on the part of a model is related to increased imitation of that model and outweighs same sex imitation (Bandura, Ross and Ross, 1963); general patterns of social behavior, such as moral judgment, can be acquired through modeling (Bandura and McDonald, 1968); observers of low intelligence, having feelings of incompetence, low self-esteem and who have been frequently rewarded for imitated responses are more susceptible to modeling effects (Bandura, 1977b);

acquisition of behavior can be accomplished more quickly with a model; observed outcomes of behavior of a model are effective in strengthening or weakening inhibition of the response by an observer and facilitating the response by the observer, and usually outweigh the effects of model characteristics such as high prestige, power, intelligence and competence (Bandura, 1977b); the observer's assessment of his ability to reach certain outcomes is of critical importance (Bandura, 1977a).

Other researchers have demonstrated: interaction of gender of observer, attribution of success with the experimental task and gender of the model among college men and women (Severance and Gottsegen, 1977); the superiority of a modeling/role playing teaching method over lecture/discussion in the training of college student mental health paraprofessionals in interpersonal techniques (Teevan and Gabel, 1978); modeling and interactive operations collaborate in determining the character of aggressive expression: among first and second grade boys, observation gave information regarding the setting and context of behavior and the acts of peers were powerful in the regulation of behavior (Hall and Cairns, 1984). Wager (1979) states that human models are one of the strongest influences on attitude formation and change, having more total impact on behavior change than direct experiences. He suggests that it is very reinforcing to learn through modeling because mistakes and consequent punishment can be avoided.

Most previous research concerning modeling has: taken place in limited experimental settings; dealt mostly with inconsequential experimental tasks, performance of which is readily measured by a behavioral checklist approach, and concentrated upon school age children as subjects. The requirement of a novel stimulus (having extremely low to zero probability of occurring under the stimulus conditions) to demonstrate a matching performance of modeled events (Bandura, 1977b) has indicated the choice of the laboratory setting for modeling research. However, Bandura has himself suggested that: there is probably a greater reinforcement effect with self-selected models and duration of exposure than with controlled

single or multiple models (1966); the laboratory findings may not be generalizable to complex functional behaviors in more naturalistic settings (1977b); more venturesome and talented observers are likely to derive greater benefit from observing exemplary models (1977b).

Little research has been done using idealized models whose behavior has a high utilitarian value (Bandura, 1977b). Previous research in more naturalistic settings which has compared modeling with other teaching or therapeutic methods has not explored correlates of effective modeling processes. The research reported here aimed to study modeling and its correlates in a field setting.

Role modeling is a form of learning by modeling which occurs naturally in the socialization process. Role modeling is used as a learning method in professional and vocational education programs and is considered to be a means by which minorities might prepare for fuller participation in society (Williams, 1982). Role modeling is usually defined as presenting an example which others emulate (Haberlin, 1983; Stuart-Sidall and Haberlin, 1983). This idea is basic to most literature on the subject. Complementary defining characteristics are that: a role model teaches by his actions (Murphy and Hammerstad, 1981); a role model is one who is admired and inspires others to emulate his example (Werley and Newcomb, 1983); a role model helps an individual perceive himself in a new role without threatening the loss of the old role (Erickson, Tomlin and Swain, 1983); role models are among the comparison group types of reference groups: an individual observes a role model who possesses and displays a particular role and compares his observations with his own performance to learn (Lum, 1978), and role modeling is one means to produce change in a social system: an individual may simply initiate a new behavior and others will follow this lead (Schmalenberg and Kramer, 1979). Though often mentioned in popular and professional literature, role modeling is infrequently discussed or examined. The term seems to be commonly understood and "is often assumed to involve an informal and almost mystical process. As a result, the idea that one can formalize the educational process of the modeling

relationship is rarely considered or acted upon." (Williams, 1982, p. 11). Haberlin (1983) states that role modeling is an extremely effective mode of teaching, but that it is one for which the prospective role model cannot prepare (Haberlin, 1983). Williams (1982), however, asserts that it is possible to learn to role model and to learn to learn from role models. She assumes that "the effectiveness of role model relationships varies as a function of how the two persons in the situation approach the relationship, the degree to which they are cognizant of its forces, and the extent to which they understand the psychological factors involved." (Williams, 1982, p. 11).

Role modeling has long been an important concept in nursing education (Backenstose, 1983; Bergeron, 1983). Nurse faculty members serve as role models for nursing students (Archer and Fleshman, 1981; Meyer, 1983). Dalme (1983) found that faculty members were the most frequent choice for role models by second year (senior) nursing students. First year students more often chose other nurses in the clinical setting or expressed no preference for role models. Dalme notes that professional identity is the only new ingredient (among sex, ethnic and social identity) added for synthesis into personal identity in late adolescence. She indicates that staff nurses also become significant referents of behavior for students late in their educational sequence.

Staff nurses are used in many nursing education programs as specifically designated role models for students. Some of the intended outcomes of learning by role modeling include: professionalism, self-responsibility, accountability, clinical expertise and peer acceptance (Rowe, 1983). Criteria used by one nursing program for evaluating the role modeling performance of the staff nurse in relation to the student include: number of times staff nurse and student meet together; nature of the exchange of feedback; openness of communication and trust and how support is provided to the students (Rowe, 1983). Exemplification is identified as one component of the professional socialization relationship (Styles, 1982). Other components described in Styles' formulation relate to aspects of the

modeling relationship and process: identification, appraisal (feedback), instruction, sanction and collaboration. The socializer, or role model, "acquaints the socializee with tacit and explicit values of the work environment and assists her to an adjustment which preserves our mutual professional values." (Styles, 1982, p. 207).

Role modeling is considered to be important for professional and career development beyond basic educational preparation in nursing. "As a professional role model, each nurse has an impact on the profession and the environment." (Chaska, 1983, p. 875). Newly graduated nurses and nurses newly employed by particular institutions are often placed in observational learning situations to learn priority setting, decision making, delegation of tasks and communication skills (Murphy and Hammerstad, 1981). Staff nurses, as well as students, need exemplary role models (MacPhail, 1983). The role model function appears in job descriptions of nurse managers and Clinical Nurse Specialists. Graduate students in nursing are expected to serve as role models (Glass and Coleman, 1983) and nursing faculty are advised to be role models regarding the use and practice of nursing research in the clinical setting (MacPhail, 1983). Tumminia (1981) notes that there are few male nurse faculty role models available for male students of nursing. The great interest in role modeling as a means of professional development in nursing and the practice of designating nurses to function as role models for specific students makes nursing a particularly meaningful context within which to study the role modeling relationship.

Parallels between the Role Model-Student Relationship and the Psychotherapist-Client Relationship

The change in an individual's behavior, knowledge, skills, values or attitudes which occurs following a relationship with a model can be seen as parallel to change in these attributes following a psychotherapeutic relationship. Bandura (1977b) has used modeling as a form of therapy in the treatment of individuals suffering from phobias. There are

components related to change in psychotherapy which are shared by all forms of therapy: an emotionally charged, confiding relationship with a helping person; a healing setting; a rationale, conceptual scheme or myth shared by patient and therapist; active participation of patient and therapist in a ritual; experience of success for the patient, to combat demoralization; patient's self-appraisal as one capable of improvement; patient's appraisal of therapist as one who can help (Frank, 1982). Frank states that the determinants of success in psychotherapy are in the patient/therapist relationship and not in the procedure (1982). Bandura (1977a) uses the concept of self-efficacy (one's estimate of his ability to perform in a particular way) as an integrative framework which explains and predicts changes occurring in various modes of therapy. Self-efficacy has been criticized as indistinct from the individual's perceptions of probable outcomes of behavior (Eastman and Marzillier, 1984). However, the present investigation did not address that problem, but explored relationships of both self-confidence regarding performance and outcomes of performance to learning by role modeling. Change in therapy is also described as reconstructions of personal meaning rather than return to equilibrium: a feedforward (active restructuring through exchange with the environment) process which interplays with feedback (Mahoney, 1982). Mahoney (1982) emphasizes the role of hope in therapy and that a desired outcome of therapy is the individual's increased appreciation for his own resources. Gendlin (1986) asserts that the subprocesses and microprocesses of psychotherapies cut across different therapeutic methods and are relevant in situations other than the therapeutic setting. The learning by role modeling situation appears to be such a situation. Psychotherapy has been defined as the creation of an interpersonal context (characterized by acceptance, warmth, empathy, respect, and caring) in which therapeutic learning occurs (Strupp, 1986). "The therapist becomes a better mentor than the significant figures of the patient's past . . ." and counteracts learning which occurred in previous unsatisfactory relationships (Strupp, 1986, p. 123).

The relationship between role model and learner is viewed as critical (Williams, 1982). Training in the helping relationship, coaching and giving feedback is provided as a part of one program preparing preceptors (Murphy and Hammerstad, 1981). A role model for a nursing student must demonstrate excellence in nursing practice (Atwood, 1979; Clark, 1981; Murphy and Hammerstad, 1981; Walters, 1981; Wolf, 1982; Backenstose, 1983; Maes, 1983; Stuart-Sidall, 1983) and professional commitment (Murphy and Hammerstad, 1981; Backenstose, 1983; Bergeron, 1983; Stuart-Sidall, 1983). Other characteristics of the role model, the student and the role modeling relationship which are frequently cited are similar to components of the psychotherapeutic relationship. The themes of self-efficacy and building a sense of self-worth and control are indicated in the importance of: the role model encouraging student autonomy (Backenstose, 1983; Douville, 1983; Maes, 1983; Stuart-Sidall, 1983); the student maintaining control over the fulfillment of learning objectives (Votroubek, 1983); self-directiveness on the part of the student (Walters, 1981; Backenstose, 1983; Douville, 1983; Maes, 1983) and on the part of the role model (Wolf, 1982; Maes, 1983). Active participation in the relationship by the role model (Clark, 1981; Walters, 1981; Backenstose, 1983; Bergeron, 1983; Stuart-Sidall, 1983) and by the student (Douville, 1983) is described as enthusiasm for the learning process. Certain elements of the communication style of the role model are considered important: tact (Douville, 1983); receptivity (Douville, 1983; Werley, 1983); problem-solving style (Murphy and Hammerstad, 1981); communication at the student's level (Henneman, 1983), and good rapport with colleagues (Stuart-Sidall, 1983). Flexibility is seen as an important characteristic of the role model (Walters, 1981; Bergeron, 1983; Douville, 1983; Henneman, 1983). The role model-student relationship is described as supportive (Clark, 1981; Murphy and Hammerstad, 1981; Walters, 1981; Styles, 1982; Backenstose, 1983; Haberlin, 1983; Stuart-Sidall, 1983). Role modeling allows students to take risks in a protective environment (Archer and Fleshman, 1981). The accepting, supportive nature of the role of therapist is similar to the elements of communication style,

support and flexibility. The feedback and feedforward mechanisms in therapy are present in the effective role modeling relationship as: continuous feedback (Henneman, 1983); objective appraisal of student performance (Bergeron, 1983; Douville, 1983); willingness to share (Walters, 1981; Bergeron, 1983; Douville, 1983; Maes, 1983); ability of the role model to manage questions and opinions of the student (Clark, 1981); the role model's disclosure of his cognitive processes, strategies, motives and feelings and the student's request for this disclosure (Schmalenberg and Kramer, 1979; Haberlin, 1983); the role model's emphasis upon problem solving as opposed to recall (Backenstose, 1983); the role model's use of examples (Stuart-Sidall, 1983); use of a democratic versus paternalistic process by the role model (Williams, 1982). Williams' (1982) instructional program for learning to learn from role models includes the learner reviewing role modeling influences in his family and personal history--a process which feedforwards (restructures) past experiences for use in the present context.

The increased sense of self-worth, confidence, self-direction, coping skills, and control which are desired outcomes of therapy have counterparts in learning outcomes attributed to role modeling relationships: professional maturity, confidence, organization skills (Chickerella and Lutz, 1981); stress management, interdisciplinary relationships in the clinical setting, attitudes toward work, clientele and community affairs, and integration of personal and professional life (Douville, 1983); hard work and discipline, dedication to the job, independence, honesty, persistence, tactfulness (Fagan and Fagan, 1983); professional roles, values, attitudes and expectations (Werley and Newcomb, 1983).

Viewing the student-role model relationship and the client-therapist relationship as parallel, certain issues raised concerning the study of psychotherapy and behavioral change have been taken into account in the design of the present investigation. Gendlin (1986) recommends: increased emphasis upon exploratory studies; recognition and study of the interaction process between patient and therapist rather than variables associated with

patients and with therapists separately; that dimensions of the person (cognition, feeling, imagery, behavior) be studied together and that dimensions of therapy (chemical, social, psychological) be controlled and studied together rather than isolated, since dimensions naturally occur together; comparing successes with failures within a given therapy rather than comparing treatment with control groups so that research findings may be used to improve success rates rather than to assert superiority of one therapeutic mode over another, or over no therapy; and separating the process of therapy from the outcomes of therapy. Strupp (1986) also emphasizes the importance of interpersonal interaction, noting that interpersonal and procedural factors may not be separable, and cautions that focusing on outcomes can be problematic since healthy adjustment is continually in process and may not be accurately represented by a measurement taken at a given point in time. The present investigation addressed the foregoing concerns in several ways. The study reported here was exploratory in nature: the investigation studied four general questions; the construction of the Role Model Repertory Grid included information about the learning by role modeling experience which had been collected from students, staff nurse role models and faculty members in a pilot study. The information was collected with open-ended questions so that the most salient aspects of the experience for the participants could be identified and represented on the Role Model Repertory Grid. Data analysis included exploratory techniques: responses to175 items per subject were placed selectively in various combinations, evaluated for the appropriateness of the combinations and used as variables. Although variables associated with students and with role models were used in the analysis, variables associated with their relationship (interpersonal styles and student's appraisal of the role model) were also used. By constructing and studying the variable: change in the student over the duration of the learning by role modeling experience toward greater similarity to the role model, a situation parallel to comparing successes and failures in therapy was created. A control group was not used, as the purpose of the study was to explore and describe the learning by role modeling

experience and not to compare it to other modes of learning. While the outcome of change in the student was used in the analysis, process variables (interpersonal styles and student's appraisal of role model) concerning the student-role model relationship were also considered. Findings of the present investigation are applicable for defining areas of focus in a more process oriented investigation of learning by role modeling.

Many of the characteristics (a supportive relationship which facilitates learning goals) and outcomes (gains in self-confidence and functional skills) of the effective psychotherapeutic relationship which are cited above are presented in literature related to mentoring and precepting as desirable characteristics and outcomes.

Mentoring/Precepting

Role modeling is a component of mentorship (Vance, 1979; Williams, 1982; Werley and Newcomb, 1983). In addition to serving as a role model, the mentor: grooms his protégé by providing special learning opportunities (Williams, 1982); is an experienced adult who befriends and guides the less experienced (Fagan and Fagan, 1983); is a teacher, promoter and door opener (Vance, 1982). Mentorship is a type of role phenomenon which can be subsumed under the concept of socialization (Werley and Newcomb, 1983).

Mentorship in nursing has been identified as an important process for improving the preparation of newly graduated nurses (Schorr, 1978) and for clarifying the identity of the nursing profession in the future (Wolf, 1982). Studies of mentorship within the nursing profession have shown that mentoring as a part the career development of leaders in the profession exceeds that found among influentials in the business world (Vance, 1982) and that nurses, as compared with police and teachers, report closer identification with mentors and greater satisfaction with the experience (Fagan and Fagan, 1983). Nurses credited the mentoring process with: gain in self-confidence; learning technical expertise, interpersonal work relationships and understanding of the administration of the hospital; providing a

someone (in the person of the mentor) who listened to ideas and encouraged creativity (Fagan and Fagan, 1983).

Preceptorship is another learning process used in nursing which incorporates role modeling. Preceptorship does not include the introduction to the professional network, specific career guidance, direct support and assistance which a mentor supplies to a protégé over time (Werley and Newcomb, 1983). It is a more narrowly defined clinical teaching role of a shorter duration in which a practicing nurse role model works with a learner. In addition to the role model component, precepting includes the roles of resource person and supervisor (Haberlin, 1983; Schubert, 1983); designer of instruction (Haberlin, 1983) and facilitator of the student's goals and objectives (Henneman, 1983). The preceptor helps the student apply intellectual learning to the realities of the work situation (Turnbull, 1983).

The preceptor role has received national attention in nursing (Turnbull, 1983). It is employed in schools of nursing (Chickerella and Lutz, 1981; Clark, 1981; Walters, 1981; Peterson, 1983; Stuart-Sidall and Haberlin, 1983; Turnbull, 1983) where it offers the advantage of more economical use of faculty time; increased professional credibility by allowing time for faculty involvement in direct patient care, research and consultation and nursing staff involvement in education; preparation of students for future mentor roles (Backenstose, 1981). Staff development, inservice education and continuing education for nurses are also using preceptorships for learning purposes (May, 1980; Boyer, 1981; Murphy and Hammerstad, 1981; Walters, 1981). Benner (1984) recommends strengthening preceptor efforts for neophyte nurses and hypothesizes (based on her research which has identified a qualitative difference in thinking between higher and lower levels of expertise in nursing performance) that the most appropriate preceptor for the advanced beginner might be the competent nurse, who (in Benner's model) has not yet progressed to the stages at which the qualitative difference exists: proficient and expert. Nurse externships, which are summer employment opportunities in patient care for nursing students immediately before

the senior year of their collegiate nursing program, make use of preceptors for teaching and supervision.

From that which has been reported above, it can be seen that mentoring and precepting are two examples of the use of role models in the nursing profession. Styles (1982) suggests that a variety of other supportive modes of socializer-socializee relationships are possible and should be explored. However, for the purpose of present investigation only the mentoring and precepting modes have been delineated because of their emphasis upon role modeling.

Context Of The Study: The Nursing Profession

Nursing education today reflects a move from apprenticeship training into the arena of academic preparation, but there is concern as to how to combine the elements of clinical nursing experience and college education without compromising the quality of either (Peterson, 1983). In general, many nursing department administrators, and many newly graduated nurses as well, have felt that the clinical nursing experience provided in the basic education program is insufficient to prepare the new graduate to function adequately in the work setting. Nurse educators have not necessarily disagreed, but have been of the opinion that the basic educational program should not produce a finished product (i.e. an expert nurse) but one who is ready to enter practice. During the past ten years schools of nursing and nursing departments whose function is to provide nursing care services in health care agencies have developed programs, both separately and cooperatively to strengthen the preparation of the new graduate for the work environment.

Evidence of differing perspectives between nurse educators and nurses whose primary function is providing nursing care is abundant. Through content analysis of performance evaluations of nursing staff by head nurses and of nursing students by nurse educators, Smith (1965) found significant differences in the expectations of head nurses and

nurse faculty. Head nurses placed greater emphasis upon: leadership, directiveness, obedience, conformity, cooperation, appearance and composure. Nurse educators stressed sensitiveness, physical supportiveness and cognitive skills. Benner (1984) reports little consensus among nurse educators, newly graduated nurses and nursing service managers regarding what the newly graduated nurse can, cannot, should, and should not do.

In 1974, Kramer described a phenomenon called "reality shock" which occurs when the newly graduated nurse experiences the conflict between the "school subculture" and the "work subculture." Dominant values of the school subculture are: comprehensive, total patient care with individualization and family involvement; use of judgment, autonomy, cognitive and decision making skills. The work subculture values: providing safe care for all the patients (as a group as compared with individuals); organization; efficiency; cooperation; responsibility. The school stresses general role behaviors and principles, while the work situation demands role specific behaviors (Schmalenberg and Kramer, 1979). The instructional program, The Path to Biculturalism developed by Kramer and Schmalenberg (1977), has been widely employed in nursing schools and nursing departments to address the conflict between school values and work goals. Benner (1984) describes the tension between theory and practice as the tension between the use of rules to determine actions and actions resulting from the lessons of experience.

Cason and Beck (1982) documented dissimilarities between graduate faculty and practicing Clinical Nurse Specialists and between graduate faculty and nursing administrators in the importance assigned to various behaviors which are a part of the Clinical Nurse Specialist role. Faculty placed more importance upon autonomy and accountability; administrators valued collaboration and interdependence more highly. Graduate students resembled the Clinical Nurse Specialists at the beginning of their clinical experience. Over the course of the academic year their ranking of behaviors did not change significantly, but did become even more like the Clinical Nurse Specialists in the relative importance given to

various behaviors. In addition, faculty placed higher value on: self-evaluation; acceptance of outcomes of own behavior and risk taking on behalf of the patient and less importance upon patient education than other groups.

Although efforts have been made at rapprochement between nursing education and nursing service, differences remain an issue (Schorr, 1978; Turnbull, 1983; Dolan, 1984). MacPhail (1983) suggests that the practice environment is in need of more questioning inquiry, flexibility and independence of thought and action and less rigidity, conformity, rules and regulations and adherence to patterns without scientific bases. Styles (1982) raises the question of whether it is reasonable for the practice setting to socialize students to a patient focused role and for schools of nursing to socialize students to the role of nursing in society in a more general way.

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Role modeling is proposed as a part of the solution to bridge the gap between nursing service and nursing education (Quint, 1967; Novak, 1983; Peterson, 1983). Clinical practice settings containing staff nurse role models offer students an alternative to the faculty ideal (Dalme, 1983). In settings in which unification models are in operation, each nurse's role requires performance (and modeling) of practice, education, research and consultation responsibilities (Clark, 1981). Kramer's research indicated that for the individual nurse, the solutions to the conflict between school and work subcultures lay in developing one's own sources of positive feedback for whatever value system one wishes to retain (Kramer, et al., 1972). This idea is supported in Braito and Caston's (1983) findings that job satisfaction in nursing is related to intrinsic reward systems and cohesiveness of the nursing unit. Role modeling is a potential means of learning this conflict resolution mechanism. Benner (1984) takes the position that as a result of experience, nurses at higher levels of expertise use perceptual distinctions that cannot be grasped conceptually and therefore have difficulty in making their knowledge explicit for learners. "A clinical discipline needs expert clinicians to

model this dynamic transaction between personal knowledge and the clinical situation." (Benner, 1984, p. 9)

Students need to have the opportunity to observe what it is they are expected to emulate (Atwood, 1979; MacPhail, 1983). Nurse managers and nurse faculty are not the best available models for some aspects of the staff nurse role. A healthy balance of personal and professional interests is an important model characteristic (Chaska, 1983).

Beyond basic educational preparation for nursing, role modeling has been identified as an important ingredient in the preparation of nurse researchers (Mayer, 1983; Werley and Newcomb, 1983), Clinical Nurse Specialists (Sills, 1983) and nursing leaders (Vance, 1982). One particular formulation of a theory and paradigm for nursing considers role modeling as central (Erickson, Tomlin and Swain, 1983). It is predicted that "role modeling, preceptorship, apprenticeship, mentor relationships - the whole gamut of interpersonal-intellectual dynamics that characterize science and its practitioners - will come with a steady growth of scholarship and scientific investigation in nursing." (Werley and Newcomb, 1983, p. 215). Because the ability to learn from role models and the facilitation of learning by role modeling is important to professional socialization and career development in nursing and the development of nursing as a profession, further knowledge about the process of learning in this fashion will be useful to the nursing profession.

Recapitulation

Reciprocal determinism was chosen as the perspective of the present investigation because it offered a means of describing influences at work in the situation in which learning takes place by role modeling and because it provided an interpretation of the persistence of differences in subgroups within a professional group. The major foci within this cognitive social learning perspective are the active role played by the individual in cognitive

restructuring and elaboration and the dynamic interplay of personal, environmental and behavioral factors in determining one another.

In the present investigation, modeling, specifically learning some aspects of a particular professional role through intense exposure to a specific model, was studied in a field setting. The use of more naturalistic settings and expert models has been recommended as a means to advance knowledge in this area (Bandura, 1977b; Severance and Gottsegen, 1977; Mahoney, 1982).

Interestingly, there appear to be a number of parallels between the learner-role model relationship in the educational context and the psychotherapeutic relationship. Modeling is itself frequently used as a form of therapy (Bandura, 1977b). A person enters psychotherapy with the expectation that some change will occur facilitated by the relationship with a therapist. A corresponding situation exists in the case where learning occurs by role modeling: a learner enters the setting for close exposure to a human model with the expectation that he or she will evolve a changed role which will incorporate his or her observations of the model. Some components have been found to be related to change in psychotherapy, regardless of the particular therapeutic mode (Frank, 1982; Mahoney, 1982). These components may have parallels in the change which occurs in learning through role modeling: the learner's appraisal of self; the learner's appraisal of the role model; the ease and style of communication between student and role model; the perceived autonomy of the student and the role model.

The nursing profession, which served as the context of this study has relied on forms of role modeling for preparing students for the practice of nursing. Two specific processes: mentoring and precepting are receiving much attention in nursing as means of professional development and education. Both of these processes have a significant role modeling component.

As stated at the end of Chapter 1, the findings of this study should contribute to knowledge in educational psychology by: expanding our knowledge base related to

reciprocal determinism; further defining learning through role modeling and its correlates, outside of the laboratory setting; demonstrating an application of Repertory Grid methodology; suggesting further applications and adaptations of Repertory Grid methodology; suggesting extensions of this research toward predictive findings; offering instructional implications for learning situations in which learning by role modeling is an intended outcome, and posing a number of questions for further research. Findings may be applicable not only in formal educational situations, but in social contexts in which role modeling might be a means to development and advancement (Williams, 1982): specifically in assisting ethnic minorities and women to participate more fully in society.

CHAPTER III

METHOD

Research Questions

This study was designed to address the following research questions:

1. What are the differences among nursing students, nursing faculty and staff nurse role models in terms of work values and perceptions of the professional interpersonal environment?

2. What changes occur in nursing students' work values and perceptions of the professional interpersonal environment over the duration of an experience in learning by role modeling?

3. Are there relationships among changes which occur in a nursing student over the duration of an experience in learning by role modeling and the work values and perceptions of the professional interpersonal environment held by the student's staff nurse role model?

4. Are there relationships among changes occurring in nursing students over the duration of an experience in learning by role modeling and any of the following parameters?

   a. student's self-appraisal

   b. student's appraisal of her staff nurse role model

   c. perceived interpersonal styles of the student and of her staff nurse role model

   d. perceived autonomy of the student and of her staff nurse role model

Subjects

Of the ninety-five subjects participating in this study, 48 were students; 36 were staff nurse role models, and 11 were nursing faculty members. Nursing students were senior nursing students in the latter half of the last semester of the program of a university school of nursing and enrolled in the course (see Appendix A for course syllabus) which included the learning by role modeling experience component. Staff nurse role models were members of

the nursing staff of a university medical center who were specifically designated to serve as "mentors" for nursing students in the course which included the learning by role modeling experience component. A particular role model was assigned for each individual student. Nursing faculty were university faculty members responsible for teaching and clinical supervision of the course which included the role modeling experience component. At the time of data collection, these subjects were participating in a clinical nursing course in which each student worked with a specifically designated staff nurse role model (called "mentor" within the context of the course) for an average of 33 hours per week over a five week period. Fifty-two student-mentor pairs were participating in the course at a university medical center. Seven nursing faculty members were providing the clinical instruction for the course at this medical center. Each faculty member related to a group of student-mentor pairs, ranging from four to ten pairs per faculty member and averaging eight pairs per faculty member. Faculty members made rounds to the various clinical units to which students were assigned, conferring with each student and mentor and providing clinical teaching and supervision. Each faculty member met with her group of students for a two hour seminar each week.

For the purposes of the present investigation, learning by role modeling was operationalized as a change in a nursing student's perceptions of the professional interpersonal environment (assessed by The Role Model Repertory Grid) and work values (assessed by the Work Values Inventory) over the duration of the intense exposure to a staff nurse role model which occurred in the clinical nursing course. A more complete definition of learning by role modeling would also include changes in behavior, knowledge, skills, and attitudes acquired through observational learning. In the context of the study, the student acquired knowledge through classes, readings, and other experiences beside those which included the role model. Nursing skills had been previously acquired by the student to a large extent. Measuring nursing behaviors which might be novel for the student would have

created an unmanageable situation for data collection. In addition it would have been difficult to compare learning of newly acquired behaviors across a number of students since the specific skills learned might differ for each individual student depending upon the nursing specialty in which the clinical experience took place. According to a reciprocal deterministic perspective, behavior, in a more general sense, is influenced by personal factors such as cognition and values. Perceptions of the professional interpersonal environment and work values acquired during observation of a model are probably acquired through observation of behavior more than through verbal explication of these perceptions and values by the model. Bandura's (1973) criteria for a novel modeling stimulus was satisfied by the uniqueness of the experience for the student of working full shifts, a typical work schedule which includes evenings, nights and weekends and exposure to a typical staff nurse patient assignment. These experiences were not previously provided in an integrated form in the curriculum. The student was continuously in the presence of a particularly designated staff nurse role model throughout the experience.

Student-staff nurse role model pairs worked together, rotating shifts, working weekends, and assuming typical staff nurse responsibilities. The time lapse was approximately five weeks and 168 hours of clinical experience from the onset to the conclusion. From the reciprocal deterministic perspective, the experience would effect environment (i.e., staff nurse role models and faculty) as well as the students. Over a longer time period, it might have been possible to observe some effect of the experience upon faculty and staff nurses, however because they were more professionally mature and because the experience was not as unique for them as it was for the student, their perceptions of the professional interpersonal and work values were not expected to be as dramatically affected as the students'. The pilot study provided supportive evidence for considering nurse faculty and staff nurse mentors stable in the perceptions and values under

consideration over the duration of the learning by role modeling experience. A similar assumption has been made in previous research (Cason and Beck, 1982).

The school of nursing offered the course in clinical agencies other than the medical center, However, it was only at the medical center that each student worked consistently with the same mentor. Students and mentors working at other clinical sites were not included, since it was anticipated that the effect of an experience in learning by role modeling would be more clearly demonstrated in a situation in which the student interacted consistently with the same staff nurse role model. Nursing faculty members who were providing clinical instruction at other clinical sites were included in an attempt to increase the number of subjects in the faculty group such that comparison among the faculty, student and mentor groups would be more meaningful.

Fifty-two students, 52 mentors, and 16 faculty members were invited to participate in the study. Data were contributed by: 48, or 92.3% of the students; 36, or 69.2% of the mentors, and 11, or 68.8%of the faculty members. One hundred percent of the faculty members who were teaching at the medical center contributed data. Most subjects were White females. Approximate age, gender and racial composition of the sample is shown in Table 1.

All faculty members held masters' degrees in nursing; 36% were doctorally prepared. Most of the staff nurse role models (85%) held baccalaureate degrees in nursing. Less than ten per cent were masters' prepared and less than ten per cent held an associate degree or diploma as their highest level of educational preparation. Several of the staff nurse role models were enrolled in masters' degree programs.

Table 1. Age, Gender and Racial Characteristics of the Sample

	AGE (YEARS)	GENDER	RACE
Students (n=48)	20 - 30 (most early 20s)	98% female (1 male)	98% White (1 Latino)
Role Models (n=36)	Late 20s to mid 30s (3 > 40)	100% female	97% White (1 Black)
Faculty (n=11)	30s to 40s (1 > 60)	100% female	91% White (1 Asian)

As Table 2 shows, the majority of the subjects were working in medical or surgical clinical areas, including general units, critical care areas, the operating rooms, and specialty units such as the bone marrow transplant unit and the burn unit. Twenty-two per cent were working in community or mental health oriented settings including the emergency room, the community nursing service of the medical center, and the psychiatric care unit. The remaining 15% were working in maternal and child health areas, including obstetrics, pediatrics and the neonatal and pediatric intensive care units. The numbers of students, mentors and faculty members in the clinical specialty categories of medical-surgical, community and mental health, and maternal and child is shown in Table 2.

Table 2. Clinical Specialty Categories of the Sample

GROUP	MEDICAL-SURGICAL	COMMUNITY AND MENTAL HEALTH	MATERNAL AND CHILD	TOTAL
Students (n=48)	32	10	6	48
Role Models (n=36)	23	7	6	36
Faculty (n=11)	5	4	2	11
Total	60	21	14	95

Instrumentation

Instruments used in this study were a portion of the Work Values Inventory (Super, 1970) and the specially constructed Role Model Repertory Grid. One year prior to data collection for this study, the investigator conducted a pilot study in order to refine the instruments to be used. Subjects for the pilot study were the students, mentors and faculty members who were participating in the clinical nursing course at that time. Eighty-four subjects contributed data to the pilot study: 43 students; 35 mentors, and six faculty members.

Work Values Inventory

The Work Values Inventory (Appendix F) was administered in its entirety to subjects in the pilot study. This instrument has been widely tested by its author Donald Super (1970). It measures "satisfactions which men and women seek in work and the satisfactions which may be the concomitants or outcomes of work." (Super, 1970 p. 4). The subject rates 45 items on a five point scale indicating the importance the subject places upon each of the 45 possible satisfactions listed. The task requires ten to 15 minutes. Scoring procedures yield a score for each subject on 15 dimensions of work values, each composed of three items. These dimensions are: altruism; aesthetics; creativity; intellectual stimulation; achievement; independence; prestige; management; economic return; security; surroundings; supervisory relations; associates; way of life; variety.

Super (1970) reported reliability coefficients ranging from .74 to .88 (median .83) over a two week time interval with 99 tenth graders. Validity studies have involved correlations of Work Values Inventory dimensions with scales of Strong's Vocational Interest Blank, the Kuder Preference Record and the Allport-Vernon-Lindsey Study Of Values. Social desirability has been shown to inflate altruism responses and lower independence responses (Super, 1970).

In an attempt to reduce the data to groupings of items which accounted for most of the variance in the sample, data from the pilot study administration of the Work Values Inventory were subjected to factor analysis. The intent was to reduce the number of variables summarizing the Work Values Inventory from Super's 15 dimensions in order to facilitate comparisons among groups and subsequent interpretations. Further, it was considered to be desirable to decrease the number of Work Values Inventory items presented to subjects so that the task of responding was simplified encouraging an increased response rate. Thirteen factors having eigen values greater than one were extracted using a principal components analysis and Varimax rotation. The first 7 factors were selected for use in the present investigation. The basis for selection was that the difference between variance accounted for by Factor VII and variance accounted for by Factor VIII was greater than the difference in variance accounted for between any two other consecutive factors with the exception of the difference in variance accounted for between Factor I and Factor II. Only items having a loading of 0.50 or greater on their respective factors were retained. The portion of the Work Values Inventory used in this study (Appendix G) was a 30 item instrument. Table 3 presents the seven factors, the composition of each, the Work Values Inventory dimension to which each of the items contributes and the reliability coefficient (Cronbach's alpha) of each factor.

Role Model Repertory Grid

The Repertory Grid methodology was developed by psychologist George A. Kelly to identify the major psychological constructs used by an individual to interpret personal reality (Kelly, 1955). The methodology has been adapted for use in numerous research situations in which ways of construing reality and oneself in relation to others are of particular interest (Ryle, 1975; Slater, 1976; Pope, 1977; Greenberg, 1978; Smith, 1978; Platt, 1980; Stewart, Stewart and Fonda, 1981; Beail, 1985). A Repertory Grid is formed by a subject indicating to what extent specific persons, places or objects possess certain specific characteristics. Each

Table 3. Factors of the Work Values Inventory

Factors	Work Values Inventory Items	DIMENSIONS	Cronbach's alpha (N=84)
I. Internal Reward	Have freedom in your own area	INDEPENDENCE	0.85
	Make your own decisions	INDEPENDENCE	
	Are your own boss	INDEPENDENCE	
	Use leadership abilities	MANAGEMENT	
	Try out new ideas and suggestions	CREATIVITY	
	Have authority over others	MANAGEMENT	
	Contribute new ideas	CREATIVITY	
	Gain prestige in your field	PRESTIGE	
II. External Reward	Have good contacts with fellow workers	ASSOCIATES	0.84
	Are one of the gang	ASSOCIATES	
	Form friendships with your fellow workers	ASSOCIATES	
	Know your job will last	SECURITY	
	Are looked up to by others	PRESTIGE	
	Are always sure of having a job	SECURITY	
	Know that others consider your work important	PRESTIGE	
III. Economic Return	Can get a raise	ECONOMIC RETURN	0.85
	Are paid enough to live right	ECONOMIC RETURN	
	Have pay increases that keep up with the cost of living	ECONOMIC RETURN	
IV. Mental Challenge	Need to be mentally alert	INTELLECTUAL STIMULATION	0.75
	Have to keep solving new problems	INTELLECTUAL STIMULATION	
	Are mentally challenged	INTELLECTUAL STIMULATION	
	Use leadership abilities	MANAGEMENT	
V. Surroundings	Like the setting in which your job is done	SURROUNDINGS	0.76
	Have a good place in which to work (good lighting,quiet, clean, enough space,etc.)	SURROUNDINGS	
	Have adequate lounge, toilet and other facilities	SURROUNDINGS	
VI. Altruism	Feel you have helped another person	ALTRUISM	0.82
	Add to the well being of other people	ALTRUISM	
	Help others	ALTRUISM	
VII. Aesthetics	Add beauty to the world	AESTHETICS	0.69
	Need to have artistic ability	AESTHETICS	
	Make attractive products	AESTHETICS	

characteristic is a bipolar construct, such as happy--sad. Figure 6 is an example of a partial Repertory Grid. To complete the Grid in Figure 6, a subject would be asked to use the box at the intersection of the row for each characteristic with the column for each person to indicate to what extent each person possesses each characteristic. This would be accomplished in one of three alternative ways: the subject might be asked to place a checkmark in the box to indicate that the person possesses the characteristic at the left side of the continuum; the subject might be asked to rank the persons from the person who possesses the most of the characteristic at the left side of each continuum to the person who possesses the most of the characteristic at the right side of each continuum; the subject might be asked to rate each person on each characteristic on a scale, for example a scale of one to seven, one representing the left side of each continuum and seven representing the right side of each continuum. The subject may not be asked to interact with the physical format of the Grid at all, depending upon the context of the research or therapy and the capabilities of the subject. The Grid might be formed and completed by the researcher or therapist, using information obtained through a carefully structured interview with the subject.

Figure 6. A Partial Repertory Grid

	Self	Mother	Father	Brother	Friend	Ideal Self
Happy----------Sad						
Loving--------Selfish						
Smart---------Stupid						
Honest-----Insincere						

In the language of Repertory Grid methodology, the bipolar characteristics are called constructs and the persons are called elements. The elements need not necessarily be persons; they might be places, objects, activities or any concrete entity which might be of interest. Constructs and elements may be provided entirely by the therapist or researcher, or the subject may be asked to generate all or some of the constructs and/or elements. When subjects' Grids are to be grouped for the purpose of analysis or when a subject's Grid is to be compared with another Grid (either a Grid completed by the same subject at another time, or by another subject), constructs and elements are provided.

The concept of reliability is not applied to Grid methodology; in reported clinical and research uses of the approach, change is a desired finding when subjects are retested, rather than being evidence of reliability problems with the method (Ryle, 1975; Fransella and Bannister, 1977). As Beail notes, ". . . the repertory grid is a flexible and diverse methodology and not a standardised test with a set procedure" (Beail, 1985, p. 22) and therefore, usual means of establishing reliability and validity are not applicable. Ryle (1975) reports some validity evidence in which grid findings were supported by psychometric testing and clinical symptomatology.

There are a number of options for analyzing Repertory Grid data. These include nonparametric methods, some of which do not require the use of a computer (Kelly, 1955; Stewart, Stewart and Fonda, 1981), and multivariate statistical procedures including factor analysis, principal components analysis, multidimensional scaling and cluster analysis (Fransella, 1977). In England, where Repertory Grid technique is used widely in therapy and research (including market research), several computer programs designed specifically for Grid analysis are available (Beail, 1985). Regardless of the specific method used, the general form of the results of Repertory Grid analysis reduces the data in at least two ways by identifying relationships among constructs and relationships among elements. Interpretation of these relationships reveals which constructs are seen by a subject to exist together (e.g., in

terms of the example in Figure 6, the subject might view happiness and selfishness as being commonly found together) and which elements are seen to be similar to one another (e.g. in terms of the example in Figure 6, the subject may view self as being similar to mother and ideal self being similar to father). Some analytic techniques, such as principal components analysis, reduce the data further by computing the correlations of elements with constructs, creating principal components. Usually the first principal component accounts for 30% to 50% of the total variance and the second principal component accounts for 10% to 25% of the total variance. Principal components are defined by a latent root, a construct vector and an element vector. Loadings of each element and each construct on each vector are calculated. A graphic representation is produced in which principal components appear as axes intersecting at right angles and elements are plotted in the four quadrants formed by the intersecting principal components.

The Role Model Repertory Grid utilized in the present study was developed by the investigator to measure perceptions of the professional interpersonal environment. The content used to adapt the methodology to the nursing context was based upon nursing research findings related to characteristics which differentiate among students, practicing nurses, nurse managers, and nurse faculty (Kramer, 1974; Lum, 1978; Hurley, 1978; Schmalenberg and Kramer, 1979; Dalme, 1983) and published information regarding learning in the preceptor relationship (Chickerella and Lutz, 1981; Douville, 1983; Stuart-Sidall and Haberlin, 1983).

The Role Model Repertory Grid was pilot tested along with the Work Values Inventory with 84 subjects. One Grid was prepared for students (Appendix H) and another Grid was prepared for mentors and faculty (Appendix J). The two versions were identical with the exception of one element: students were asked to rate their mentors and mentors and faculty were asked to rate their immediate supervisors.

The Role Model Repertory Grid had role titles listed as the elements along the horizontal axis. The role titles represented 12 people (including the subject) who have been significant in the professional experience of the subject (e.g. RN I would like to be like; most influential nursing instructor). The subject identified (but did not submit to the investigator) particular persons who fit these descriptions. The subject wrote identifying names or initials on a removable label. In the pilot study, students, faculty members and most of the mentors completed the Grid at the beginning of the course and then again at the conclusion of the course. Therefore, provision was made for subjects to keep the label containing the names or initials of the persons secure. This was done by asking subjects to remove the label after completing the Grid, affix it to a second Grid which was stapled to the first and seal this second Grid in an envelope which was provided. At the time of the second completion of the Grid, the investigator returned the envelope to the subject, so that the second Grid could be used for rating the same persons on a second occasion. Faculty members and mentors completed the Grid on two occasions in the pilot study so it could be established that the faculty members and mentors remained more stable in their perceptions over the duration of the course than did the students.

Twenty-one bipolar constructs (e.g. cooperative---competitive; idealistic---realistic) were listed along the horizontal axis of the Grid. Subjects rated each element (person) on each construct on a scale of one to seven. The task required approximately one hour.

Based upon results of the pilot study, the Role Model Repertory Grid developed for the pilot study was revised. The goals of revision were to eliminate elements and constructs which: produced little between group variability, provided redundant information or appeared from subjects responses to be ambiguous or unclear. Further, information about salient constructs which might not have been included in the Role Model Repertory Grid was sought from pilot study subjects. This information was gathered using an open-ended questionnaire, Perceptions of the Mentorship Questionnaire (Appendix L). Finally, as was the case with the

Work Values Inventory, it was desirable to reduce the number of constructs and elements so that the task of responding was simplified, in order to increase response rate.

Frequency distributions and means and standard deviations of Grid ratings were computed for the pilot study sample as a whole and separately for student, mentor and faculty groups. Some constructs (e.g. helpful, easy to communicate with, assertive) were rated very similarly by all groups and were eliminated on that basis. Two groupings of elements (least successful RN I know, nursing instructor who had little influence, and RN I hope I am never like, and their opposites: most successful RN I know, nursing instructor who had great influence, RN I would like to be like) were rated very similarly by all groups. The successful and unsuccessful RN elements and the influential and noninfluential nursing instructor were eliminated, leaving the positive and negative role model [RN I would (not) like to be like] to represent the groupings of elements. The constructs related to clinical skill and clinical knowledge were used similarly by all groups, and therefore were replaced with the construct of clinical expertise. The masculine---feminine construct was used by many subjects to identify the gender of the person being rated (i.e. ratings were largely ones or sevens) and was therefore eliminated.

Analysis of responses to the Perceptions of the Mentorship Experience Questionnaire indicated that student, faculty and mentor groups were generally in agreement on the benefits and important learning outcomes of the course and on the characteristics of students and of mentors which contribute to an effective learning experience. Important benefits and learning outcomes for the student included the students' experience of the reality of the staff nurse role, increased autonomy and accountability and increased understanding of cooperative effort, teamwork and the leadership role of the nurse. Since it was anticipated that student self-appraisals on the Grid would reflect gains in these areas, it was important that these areas be represented as constructs in the Grid. Leadership was added as a construct. The other important benefits and learning outcomes were already

presented in constructs (e.g. realistic, use of problem solving for decision making, self-confidence, taking of responsibility for own actions, self-direction, rapport with others, supportiveness, and cooperativeness). Most important characteristics of an effective mentor were patience, clinical expertise, leadership, supportiveness, willingness to teach and promotion of the student's independence and active role. On this basis, patience and supportiveness were added to the Grid constructs. Most important characteristics of the student who learns effectively from a mentor were desire to learn, flexibility and self-confidence. These qualities were already Grid constructs.

These revisions reduced the number of elements from 12 to eight and the number of constructs from 21 to 18. Because pilot study results had indicated a tendency for subjects to choose extreme ends of the scale, the extremes were emphasized by adding modifiers to the constructs (e.g. very inefficient---extremely efficient) in order to encourage subjects to use mid-range values. The location of the removable label was changed based on the suggestion of pilot study subjects. Since the role titles provided as elements were not needed by subjects once they had identified on the label the real people who fit the descriptions, the task of rating was facilitated by having the label in direct proximity to the rating spaces of the Grid.

Approvals and Consents

This study required the approval of: the Research Committee of the school of nursing (Appendix B); the Director of Nursing Research of the medical center (Appendix C); and the Institutional Review Board of the medical center (Appendix D). Subjects' rights of voluntary participation, confidentiality and anonymity were protected. Data and results of data analysis which might permit identification of individual subjects were held in confidence by the investigator. Results have been reported in aggregated form and without reference to characteristics of individuals or situations that would make it possible to identify any subject or

associate any subject with particular data. Subjects were asked not to identify themselves by name on the data collection instruments. Data could not be completely anonymous because it was necessary to match each student's responses with the related mentor and faculty member and to compare student's responses at the beginning of the experience with responses at the conclusion of the experience. For this purpose, subjects indicated on their questionnaires the medical center unit (or units in the case of faculty) to which they were assigned. This information was used by the investigator only for the purpose of data analysis and not shared with the subjects or other representatives of the school or the medical center. There were no known risks to subjects associated with participation in this study. All data gathered were voluntarily self-reported responses to questions related to the work experience and the clinical experience. Questions were not personally intimate in nature. Subjects were fully informed of the foregoing information related to confidentiality, anonymity, voluntary participation, their right to discontinue participation at any time, and the nature of implied consent. This information was provided to subjects in a cover letter (Appendix E) which accompanied data collection instruments.

Procedure

Data were collected at a medical center and school of nursing each of which was a part of a university located in the midwest. The university, at the time of the study, was a Roman Catholic, urban university. Enrollment exceeded 15,000. At the time of the study, the medical center, was a 530 bed tertiary care center located in a suburban area a short distance from a major city. Approximately 4,500 persons were employed by the medical center, approximately 1,300 of these were Department of Nursing employees. Approximately 60% of the 900 registered nurses held baccalaureate degrees in nursing. The only nursing students having clinical experiences at the medical center were students of the university school of nursing.

The school of nursing, at the time of the study, had well established and fully accredited undergraduate and graduate programs in nursing with an enrollment of 575 undergraduate students and 157 graduate students. There were 50 full time faculty members and ten half-time or part time faculty at the time of the study.

Data were collected over a six week period in the latter half of the spring semester of the 1985-1986 academic year. Prior to beginning data collection, the investigator met with the faculty member who was coordinating the nursing course to plan data collection. The first data collection occurred in the students' second week of clinical experience. Data collection was not begun during the first week in order to allow students an opportunity to form a first impression of their mentors, since an appraisal of the mentor by the student was a part of the data to be collected.

During the second week of the students' clinical experience, the investigator met with each faculty member whose students were assigned to the medical center. In each meeting a time was arranged for the investigator to meet with students for the purpose of data collection. These sessions occurred either immediately before or immediately after the weekly seminar for the week. Each faculty member provided the investigator with a list of mentors and their work schedules for the week. Each faculty member received the letter to subjects (Appendix E), the portion of the Work Values Inventory used in the study (Appendix G), and the faculty and mentor version of the Role Model Repertory Grid (Appendix K). The investigator described the study and gave instructions for responding to the questionnaires, using the questionnaires themselves to clarify the explanations. Faculty members were asked to return the completed questionnaires to a mailbox in the school of nursing offices at the medical center which had been assigned to the investigator for the duration of the data collection period. During the students' second week of clinical experience, the investigator met with the students in classrooms located at the medical center. Groups ranged in size from four to 30 students. The large range in group size was due to combined group seminars. The

investigator distributed to each student: a letter to subjects (Appendix E), the portion of the Work Values Inventory used in the study (Appendix G), and the student version of the Role Model Repertory Grid with a second blank Grid and envelope attached (Appendix I). The investigator reviewed orally the contents of the letter to subjects and the instructions for completing questionnaires. Students were advised that the purpose of the second copy of the Grid and the envelope was to protect their privacy in terms of the persons they had identified on the removable label adjacent to the role descriptions on the Grid. Students were instructed to remove the label after completing the Grid and place it in the label space on the second Grid. Students were instructed to fold the second Grid, place it in the envelope, complete the identifying information on the envelope and seal the envelope. Students were assured that the investigator would not open the envelope and would use the identifying information on the envelope only for the purpose of returning the envelope to the appropriate student at the time of the second data collection. Completed questionnaires and sealed envelopes were returned to the investigator as individual students completed them.

While the course was in progress, the investigator approached each staff nurse role model (usually on the clinical unit where she was working). The investigator introduced herself, described the study and gave the letter to subjects and questionnaires to each staff nurse role model. The investigator reviewed orally the contents of the letter and the instructions for completing the questionnaires, using the questionnaires to clarify the instructions. Staff nurse role models were asked to return questionnaires to the investigator through the interdepartmental mail to the school of nursing office at the medical center. In some cases, staff nurse role models returned completed questionnaires to the investigator through her student or the faculty member involved. Most staff nurse role models returned completed questionnaires within ten days. Those who did not were contacted by telephone or in person by the investigator to encourage a response. Those who had not responded by the time the course concluded received a letter from the investigator encouraging a

response. A self-addressed stamped envelope was provided. Among staff nurse role models who were introduced to the study personally by the investigator the response rate was 76%. It was not possible for the investigator to approach the six staff nurse role models on one of the clinical units due to certain restrictions in that area. The investigator enlisted the assistance of the nursing staff development coordinator in that area to distribute questionnaires and collect them upon completion. Despite repeated follow-up by the investigator only one of the six staff nurse role models in that particular area responded.

During the final week of the students' clinical experience (one month after the first data collection), the investigator scheduled data collection sessions for student subjects. In each session, the investigator returned the sealed envelopes containing the blank Grid to which students had affixed the labels on which they identified persons who fit the role descriptions provided as elements on the Grid. The portion of the Work Values Inventory used in the study was distributed to students. Students returned questionnaires to the investigator as they completed them.

Faculty members supervising students at clinical sites other than the medical center received the letter to subjects and questionnaires in their mailboxes at the school of nursing. These faculty members were instructed to return questionnaires to the investigator through interdepartmental mail. Forty-four percent of this group responded.

Design and Statistical Analyses

The overall design of the study was a repeated measures design: measurements of the student group at the beginning of the experience in learning by role modeling were compared with student measurements at the conclusion of the experience. As shown in Figures 8, 9, 10, 11, 12, and 13, the repeated measures design was used to address Research Questions #2, #3, and #4 respectively, which dealt with changes occurring in students over the duration of the experience in learning by role modeling. Research

Question #1, which pertained to differences among student, faculty and staff nurse role model groups, was addressed by means of a comparison among groups on multiple measures taken at one point in time as displayed in Figure 7. The results of faculty and staff nurse role model groups on the portions of the Work Values Inventory used in the study and the Role Model Repertory Grid, were used to represent work values and perceptions of the professional interpersonal environment (respectively) for each group. The assumption that faculty and experienced staff nurses, being more professionally mature than students, would not change in these attributes over a short time (Cason and Beck, 1982) was supported by the pilot study results (i.e., no significant differences were found in Work Values Inventory factor scores or in Role Model Repertory Grid ratings when comparing a group of staff nurse role models and faculty members at the beginning of the learning experience in role modeling with their factor scores and ratings at the conclusion of the experience). Therefore, in the present investigation, faculty members and staff nurse role models results on the portion of the Work Values Inventory used in the study and the Role Model Repertory Grid were treated as criterion measures representative of the respective groups. This study did not employ a control group since the purpose of the study was not to compare the learning by role modeling situation with another learning situation, but to describe some aspects of learning which occurs in this mode and to relate the extent of learning by modeling to perceptions of the individuals (i.e. students and staff nurse role models) involved in the learning situation. Therefore, the learning by role modeling situation, in terms of intensity and conditions of exposure of the student to the role model were similar for all student subjects so that differences in the extent to which the student emulated the model are more likely to be due to factors intrinsic to their relationship than to external factors. This approach is congruent with the recommendation that in instances in which it is the intent to apply research findings to increase success rates with particular treatments, research should examine the differences

FIGURE 7:
DIFFERENCES IN WORK VALUES AND PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT AMONG NURSING STUDENTS, NURSING FACULTY AND STAFF NURSE ROLE MODELS

GROUP	WORK VALUES (WORK VALUES INVENTORY FACTORS)							PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT (ROLE MODEL REPERTORY GRID)	
	INTERNAL REWARD I.	EXTERNAL REWARD II.	ECONOMIC RETURN III.	MENTAL CHALLENGE IV.	SURROUND-INGS V.	ALTRUISM VI.	AESTHETICS VII.	ELEMENT PATTERNS	CONSTRUCT PATTERNS
NURSING STUDENTS (ONSET OF EXPERIENCE) N = 47 WORK VALUES N = 46 PERCEPTIONS									
NURSING FACULTY N = 11 WORK VALUES N = 10 PERCEPTIONS									
STAFF NURSE ROLE MODELS N = 36 WORK VALUES N = 36 PERCEPTIONS									

between success and failure with the given mode of treatment rather than compare outcomes of a treatment modality with a control situation (Gendlin, 1986).

Prior to addressing the research questions, statistical analysis of each instrument was performed using SPSSx procedures (Nie, et. al., 1983; Norusis, 1985). Factor scores on the portion of the Work Values Inventory used in the study were computed for all subjects. Internal reliability of these factors for this sample was computed. Repertory Grid construct ratings were recoded whenever necessary to change the more desirable pole of the construct from one to seven. Cluster analysis was viewed as the procedure of choice for analysis of the Role Model Repertory Grid data. There are a number of advantages of cluster analysis over principal components analysis (Stewart, Stewart and Fonda, 1981) which are relevant to the study at hand. Cluster analysis "uses non-parametric statistics on the data (i.e., treats 4 as more than 2 and less than 5), but makes no assumptions about the absolute size of the differences" (Stewart, Stewart and Fonda, 1981, p. 65). This feature is appropriate to the rating scale supplied in the Role Model Repertory Grid. Because principal components analysis is a parametric procedure, the solution is affected by the ratio of elements to constructs (three to one recommended) and by an unrepresentative sampling of constructs (Fransella and Bannister, 1977). The output of the cluster analysis procedure in SPSSx includes a clear graphic display of the relationship of constructs to one another and of elements to one another, it is "relatively easy to demonstrate what the computer has done to get from the data to the map" and "detail(s) of the relationships between elements/constructs...(are preserved in the) ... visual presentation of the data." (Stewart, Stewart and Fonda, 1981, p. 65.) Perhaps most compelling in relation to the present study is the fact that if principal components analysis is used to compare before and after time points or different individuals or groups with one another, "there is no guarantee that the main axes produced for the second Grid will be the same as the ones in the first Grid" (Stewart, Stewart and Fonda, 1981, p. 64).

Figure 7 displays the analytic paradigm related to addressing Research Question #1: What are the differences among nursing students, nursing faculty, and staff nurse role models in terms of work values and perceptions of the professional interpersonal environment?

Multivariate analysis of variance was used to identify differences in work values among the three groups. Cluster analysis was used to determine the relationships among elements and the relationships among constructs within each group. The results of cluster analysis showed which characteristics (i.e. the constructs) each group saw as being most closely related to one another. Because constructs rated consistently near the midpoint of the scale clustered together on that basis, the analysis indicated which constructs each group found to be not particularly salient for professional interpersonal discriminations. Cluster analysis of elements showed persons each group perceived to be most like one another and how group members saw themselves in relation to other persons. The construct and element patterns for each group were examined, summarized and compared with one another.

The analytic paradigm related to addressing Research Question #2: what changes occur in nursing students' work values and perceptions of the professional interpersonal environment over the duration of an experience in learning by role modeling?, was similar to the approach described for Question #1 as shown in Figure 8.

Because the comparison made was between students at the onset of the experience and students at the conclusion of the experience, for the analysis involving factors of the Work Values Inventory, the repeated measures design for multivariate analysis of variance was used.

The form of the analytic paradigm related to addressing Research Question #3: Are there relationships among changes which occur in a nursing student over the duration of an experience in learning by role modeling and the work values and perceptions of the professional interpersonal environment held by the student's staff nurse role model?, was similar to the approach for the first two Research Questions, as shown in Figure 9.

FIGURE 8:
CHANGES IN NURSING STUDENTS' WORK VALUES AND PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT OVER THE DURATION OF A LEARNING BY ROLE MODELING EXPERIENCE

GROUP	WORK VALUES (WORK VALUES INVENTORY FACTORS)							PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT (ROLE MODEL REPERTORY GRID)	
	INTERNAL REWARD I.	EXTERNAL REWARD II.	ECONOMIC RETURN III.	MENTAL CHALLENGE IV.	SURROUND-INGS V.	ALTRUISM VI.	AESTHETICS VII.	ELEMENT PATTERNS	CONSTRUCT PATTERNS
NURSING STUDENTS (ONSET OF EXPERIENCE) N = 47 WORK VALUES N = 46 PERCEPTIONS									
NURSING STUDENTS (CONCLUSION OF EXPERIENCE) N = 41 WORK VALUES N = 40 PERCEPTIONS									

FIGURE 9:
RELATIONSHIP AMONG CHANGES OCCURRING IN NURSING STUDENTS OVER THE DURATION OF AN EXPERIENCE IN LEARNING BY ROLE MODELING AND THE WORK VALUES AND PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT HELD BY STUDENTS' STAFF NURSE ROLE MODELS

GROUP	WORK VALUES (WORK VALUES INVENTORY FACTORS)							PERCEPTIONS OF THE PROFESSIONAL INTERPERSONAL ENVIRONMENT (ROLE MODEL REPERTORY GRID)	
	INTERNAL REWARD I.	EXTERNAL REWARD II.	ECONOMIC RETURN III.	MENTAL CHALLENGE IV.	SURROUND-INGS V.	ALTRUISM VI.	AESTHETICS VII.	ELEMENT PATTERNS	CONSTRUCT PATTERNS
NURSING STUDENT-STAFF NURSE ROLE MODEL DIFFERENCE (ONSET OF EXPERIENCE) N = 29 STUDENT-ROLE MODEL PAIRS									
NURSING STUDENT-STAFF NURSE ROLE MODEL DIFFERENCE (CONCLUSION OF EXPERIENCE) N = 29 STUDENT-ROLE MODEL PAIRS									

Twenty-nine student-role model pairs were used. Although both the student group and the staff nurse role model group were larger than 29, the analysis required that the student had provided data both at the onset and the conclusion of the course and that both the student and her staff nurse role model had contributed data. These conditions were satisfied by 29 student-staff nurse role model pairs, or 55.8% of the maximum possible number of student-staff nurse role model pairs.

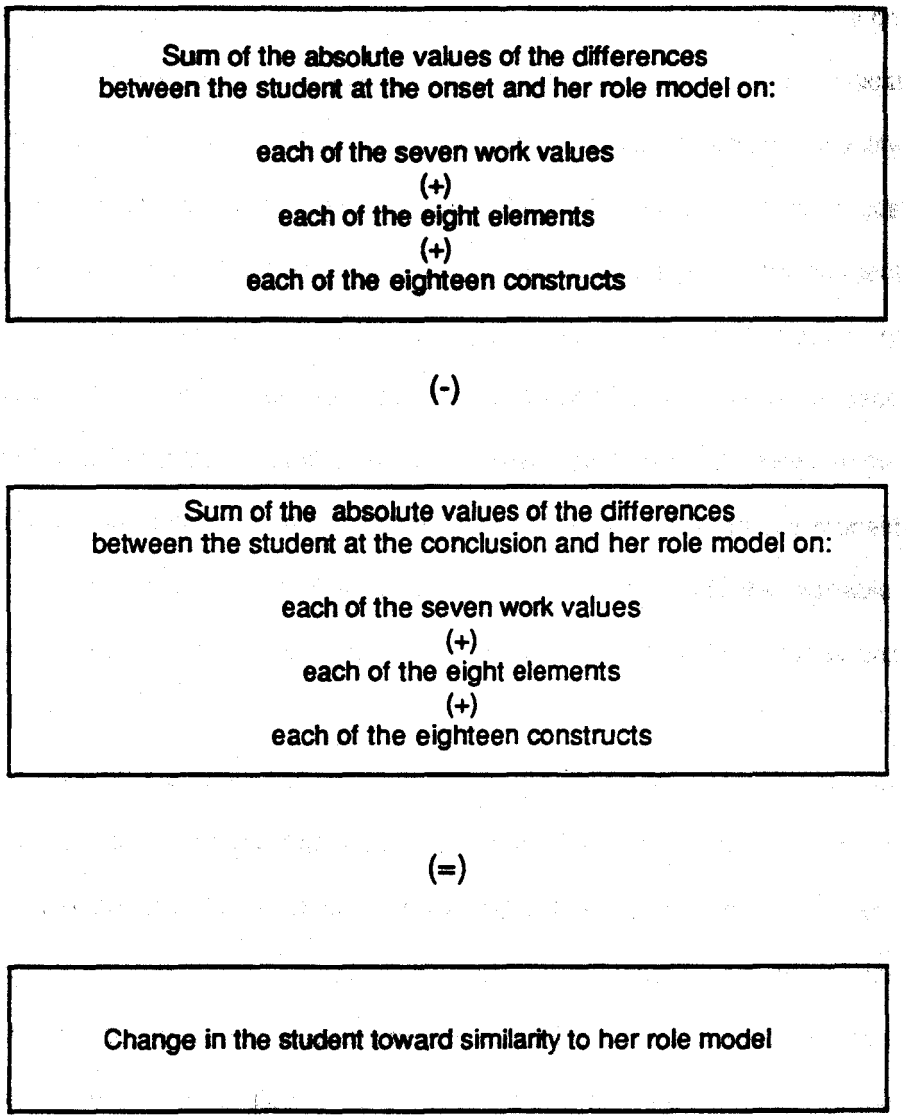
For the work values portion of the analysis the sum of the differences between each student and her role model was computed for each factor at the onset of the course and for each factor at the conclusion of the course. Differences on each factor were then used as variables in a repeated measures multivariate analysis of variance.

The perceptions of the professional interpersonal environment analysis was accomplished by computing differences between each student and her role model for each element and construct at the onset and at the conclusion of the experience. MANOVA analysis (repeated measures) was used to test the significance of change in the difference scores between the onset and the conclusion.

Further manipulations of the data were necessary to address Research Question #4: Are there relationships among changes occurring in nursing students over the duration of an experience in learning by role modeling and any of the following parameters:? student's self-appraisal; student's appraisal of her staff nurse role model; perceived interpersonal styles of the student and of her staff nurse role model; perceived autonomy of the student and her staff nurse role model.

A measure of the variable: change in the student toward similarity to her staff nurse role model (see Figure 10) was created by summing the nursing student-staff nurse role model differences at the onset and at the conclusion of the experience which had been computed (in the case of work values) for use in the analysis for Research Question #3.

Figure 10. Change in the Student toward Similarity to her Staff Nurse Role Model



Conclusion differences were subtracted from onset differences to obtain a value for the variable for each student-role model pair.

Student's self-appraisal (see Figure 11) was measured by combining Role Model Repertory Grid ratings of the element "myself" by students at the onset of the experience on the constructs: self-confidence, efficiency, taking responsibility for own actions, clinical expertise and self-direction. Cronbach's alpha was computed for the resulting scale to identify and delete any constructs which decreased the reliability of the scale. The element distances in the students' onset Grids were then examined, noting the relationship of the element "myself" to positively viewed elements such as "RN I would like to be like" and to negatively viewed elements such as "least successful senior nursing student I know." A value for each student was obtained by subtracting from the scale score the element distances between the student and the positive elements and adding the element distances between the student and the positive elements. A frequency distribution was constructed for the variable. Spearman's rho was computed to test the relationship between the change variable and student's self appraisal.

The variable, student's appraisal of her staff nurse role model (see Figure 12), was measured by a method similar to that used for student self-appraisal. Ratings by the students (at the onset of the experience) of the element, "my Nursing 381 mentor," on the constructs clinical expertise, enjoys helping others learn, flexibility and supportiveness were combined. Cronbach's alpha was computed for the scale and negative indicators were deleted. Element distances of each student's Grid completed at the onset of the course were examined for the relationships between "my Nursing 381 mentor," "RN I would like to be like,: and "RN I hope I am never like." A value for each student was obtained by subtracting from the scale score the element distance between "my Nursing 381 mentor" and "RN I would like to be like" and adding the element distance between "my Nursing 381 mentor" and "RN I hope I am never like." A frequency distribution was constructed for the variable. Spearman's rho was

Figure 11. Student's Self-Appraisal

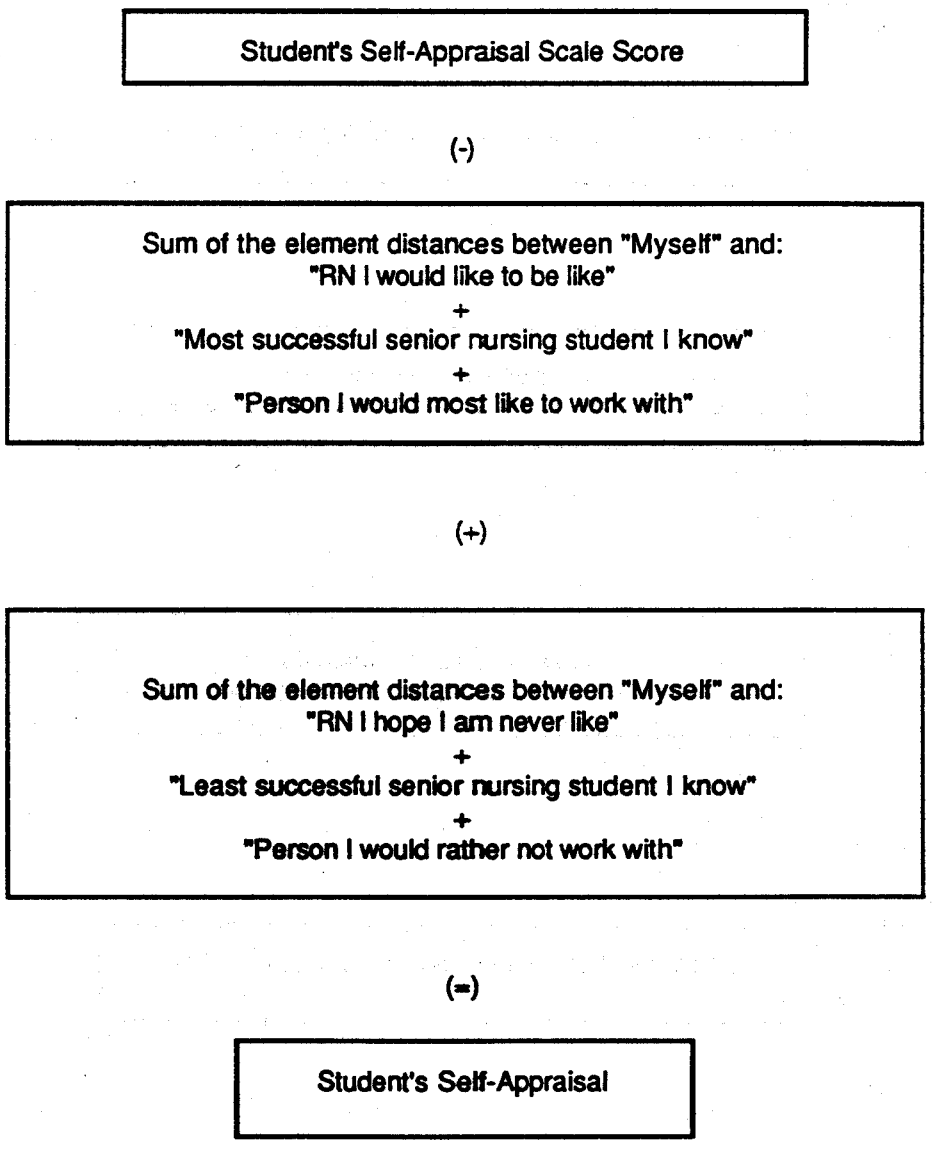
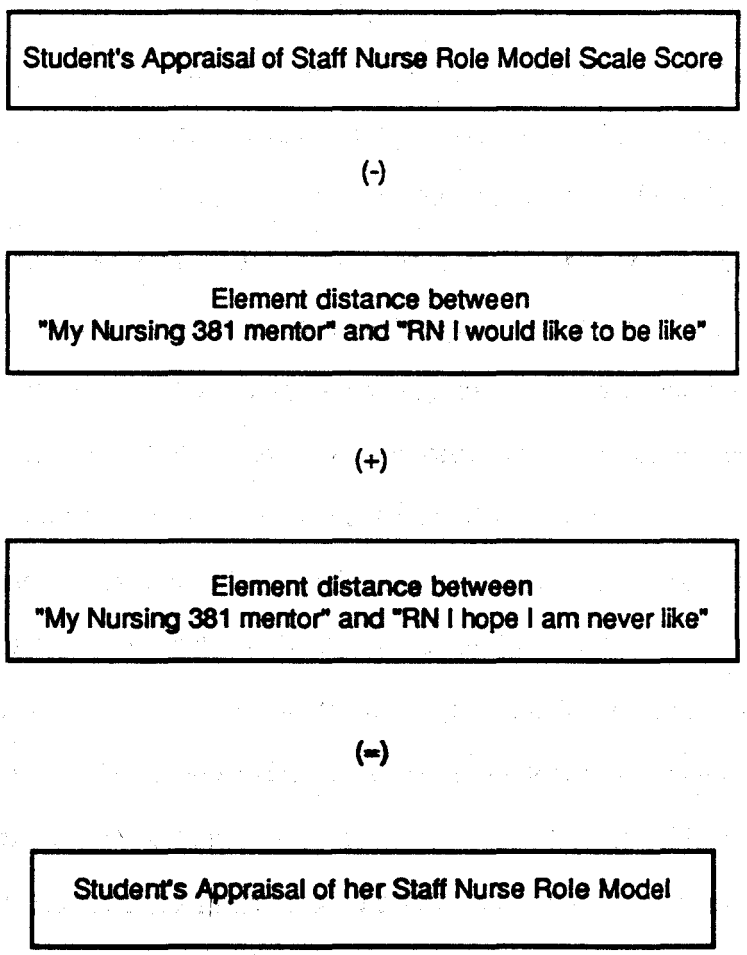


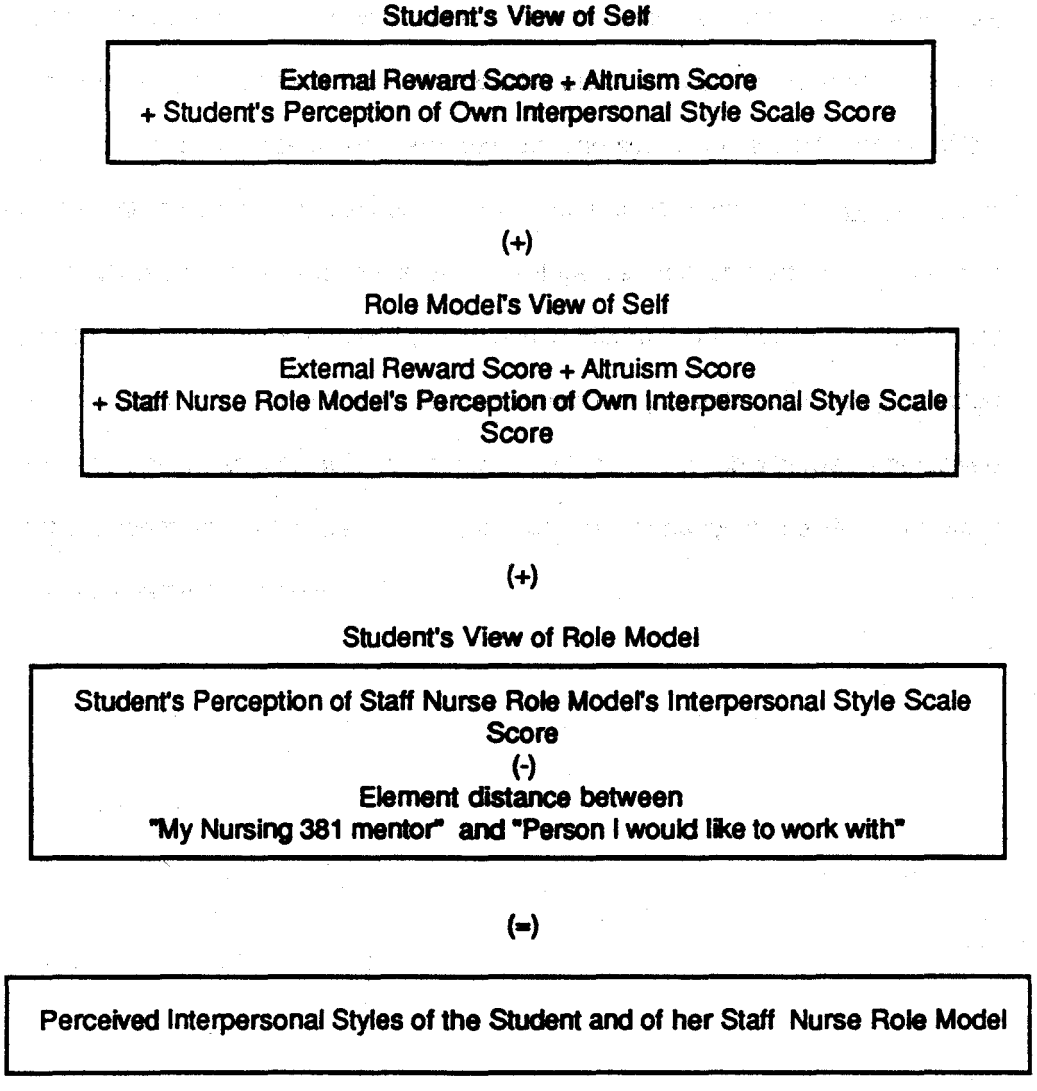
Figure 12. Student's Appraisal of her Staff Nurse Role Model



computed to test the relationship between the change variable and student's appraisal of her staff nurse role model.

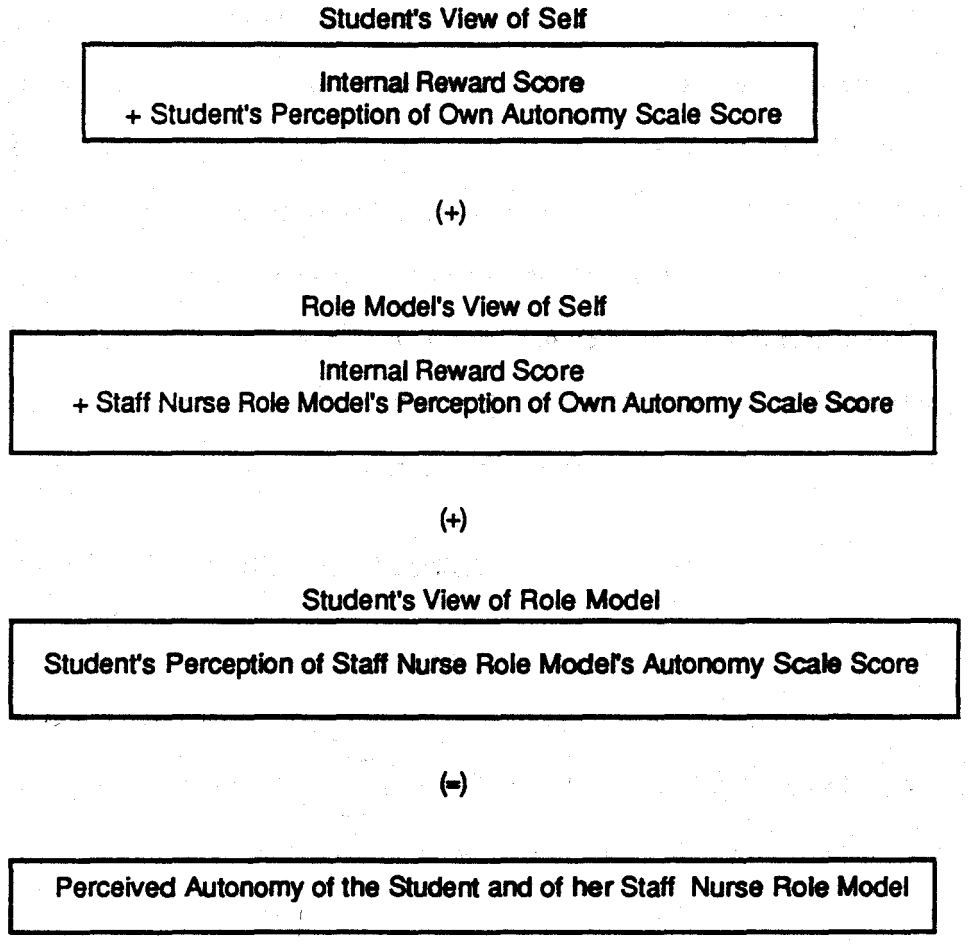
Measures of the variables: perceived interpersonal styles of the student and of her staff nurse role model, and perceived autonomy of the student and of her staff nurse role model were constructed in a similar fashion. Both variables required taking into account three perspectives: the student's view of herself; the student's view of her staff nurse role model, and the staff nurse role model's view of herself. In the case of the first variable, the perspective with respect to interpersonal relationships was of interest. Therefore, the student's Grid ratings of "myself," and "my Nursing 381 mentor" at the onset of the experience, and the staff nurse role model's Grid ratings of "myself" on the constructs: rapport; cooperativeness; seeing others as responsible for one's actions; eagerness to learn; enjoyment in helping others learn; self-direction; flexibility; patience and supportiveness were used to form three scales, one for each perspective. For each scale, Cronbach's alpha was computed and constructs which decreased the reliability coefficient were deleted from each scale. The element patterns of student Grids completed at the onset of the experience were examined for the relationship between the student's view of her Nursing 381 mentor and the student's view of the person she would most like to work with, providing another indicator of the student's perspective of her staff nurse role model's interpersonal style. Finally, student (onset of the experience) and staff nurse role model scores on Factor II (External Reward) and Factor VI (Altruism) of the Work Values Inventory were considered as further indicators of view of self with respect to interpersonal style. These indicators were summed (as shown in Figure 13) to obtain a value of the variable for each student-role model pair. A frequency distribution was constructed for the variable. Spearman's rho was computed to test the relationship between change in the student toward similarity to her staff nurse role model and perceived interpersonal styles of the student and of her staff nurse role model.

Figure 13. Perceived Interpersonal Styles of the Student and of her Staff Nurse Role Model



To measure the variable, perceived autonomy of the student and of her staff nurse role model, students' Grid ratings of "myself" and "my Nursing 381 mentor" at the onset of the experience and staff nurse role model's ratings of "myself" on the constructs: use of problem solving rather than institutional rules to reach decisions; self-confidence, taking responsibility for own actions, power, self-direction and leadership were used to form three scales, one scale for each perspective. For each scale, Cronbach's alpha was computed and constructs which decreased the reliability coefficient were deleted. The scores of students (onset of the experience) and staff nurse role models on Factor I (Internal Reward) of the Work Values Inventory were used as further indicators of the self-perception of each with respect to autonomy. These indicators were summed (as shown in Figure 14) to obtain a value for the variable for each student-staff nurse role model pair. A frequency distribution was constructed for the variable and Spearman's rho was computed to test the relationship between perceived autonomy of the student and of her staff nurse role model, and change in the student toward similarity to her staff nurse role model.

Figure 14. Perceived Autonomy of the Student and of her Staff Nurse Role Model



CHAPTER IV

RESULTS

The results of this investigation are organized and presented in relation to each of the four research questions this study was designed to address. Results related to the establishment of reliability of Work Values Inventory factors and consequent revisions of the factors are presented first. Subsequently, each research question is addressed, first reporting and then summarizing the results obtained from the analysis of Work Values Inventory and Role Model Repertory Grid data. Finally, the composition and distribution of the variables constructed to obtain results related to Research Question #4 are presented and each of the four parts of Question #4 is separately addressed.

Reliability Analysis of the Work Values Inventory Factors

Reliability analysis of the Work Values Inventory factors resulted in the deletion of seven items from the seven factors. The final item composition and reliability coefficient of each factor is presented in Table 4. Two items were deleted from Factor I. Internal Reward: "have authority over others" and "gain prestige in your field." One item was deleted from Factor II. External Reward: "are looked up to by others." Factor III. Economic Return remained the same in item composition. Two items were deleted from Factor IV. Mental Challenge: "need to be mentally alert" and "have to keep solving new problems." One item was deleted from Factor V. Surroundings: "have adequate lounge, toilet and other facilities." One item was deleted from Factor VI. Altruism: "help others." Factor VII. Aesthetics

Table 4. Revised Factors of the Work Values Inventory

Factors	Work Values Inventory Items	DIMENSIONS	Cronbach's alpha (N=95)
I. **Internal Reward**	Have freedom in your own area	INDEPENDENCE	0.79
	Make your own decisions	INDEPENDENCE	
	Are your own boss	INDEPENDENCE	
	Use leadership abilities	MANAGEMENT	
	Try out new ideas and suggestions	CREATIVITY	
	Contribute new ideas	CREATIVITY	
II. **External Reward**	Have good contacts with fellow workers	ASSOCIATES	0.77
	Are one of the gang	ASSOCIATES	
	Form friendships with your fellow workers	ASSOCIATES	
	Know your job will last	SECURITY	
	Are always sure of having a job	SECURITY	
	Know that others consider your work important	PRESTIGE	
III. **Economic Return**	Can get a raise	ECONOMIC RETURN	0.88
	Are paid enough to live right	ECONOMIC RETURN	
	Have pay increases that keep up with the cost of living	ECONOMIC RETURN	
IV. **Challenge**	Are mentally challenged	INTELLECTUAL STIMULATION	0.79
	Use leadership abilities	MANAGEMENT	
V. **Physical Environment**	Like the setting in which your job is done	SURROUNDINGS	0.62
	Have a good place in which to work (good lighting,quiet, clean, enough space,etc.)	SURROUNDINGS	
VI. **Enhance Others**	Feel you have helped another person	ALTRUISM	0.83
	Add to the well being of other people	ALTRUISM	
VII. **Aesthetics**	Add beauty to the world	AESTHETICS	0.72
	Need to have artistic ability	AESTHETICS	
	Make attractive products	AESTHETICS	

remained the same. Each deletion increased the reliability coefficient of the factor concerned. The names of the first two factors were retained despite deletions, since the names still appeared appropriate to express the conceptual relationship of the items.Factor IV. Mental Challenge was renamed "Challenge" since the two items deleted were oriented toward intellectual stimulation. Factors V. and VI. were renamed because their original names and composition were the same as two of Super's (1970) dimensions of the Work Values Inventory. With the deletion of one item each from Factors V. and VI., their respective names were changed from "Surroundings" to "Physical Environment" and from "Altruism" to "Enhance Others." These revised factors of the Work Values Inventory (Internal Reward, External Reward, Economic Return, Challenge, Physical Environment, Enhance Others and Aesthetics) were used as work values in the analyses performed to address each research question related to the study at hand.

Results Related to Research Question #1 (What are the differences among nursing students, nursing faculty and staff nurse role models in terms of work values and perceptions of the professional interpersonal environment?)

Differences in Work Values

The MANOVA analysis of work values by group (faculty, staff nurse role models and students at the onset of the experience) indicated significant difference among groups ($p=0.000$, Wilks). The largest contributors to between group variance were differences in Physical Environment, External Reward and Internal Reward. Means, standard deviations and significance of the univariate F-tests of the MANOVA analysis (effect for group) are presented in Table 5. An examination of the data presented in Table 5 indicates that the faculty group mean for Physical Environment (7.3) was considerably lower than the group means of the

Table 5. Work Values: Group Means, Standard Deviations and Univariate F-tests of the MANOVA (effect for group)

Group		Work Values (maximum possible score)						
		Internal Reward (30)	External Reward (30)	Economic Return (15)	Challenge (10)	Physical Environment (10)	Aesthetics (15)	Enhance Others (10)
Students (onset) n=47	mean	24.9	23.6	12.2	8.9	8.9	8.6	9.4
	standard deviation	2.6	3.0	2.3	1.1	1.1	2.6	0.9
Faculty n=11	mean	26.5	19.3	11.4	9.5	7.3	7.7	8.9
	standard deviation	3.6	4.1	2.6	0.9	1.1	1.6	1.6
Role Models n=36	mean	24.3	23.1	12.8	8.9	8.4	7.8	8.9
	standard deviation	2.9	3.6	2.1	1.2	1.3	2.3	1.2
Univariate F-tests significance of F		0.081	0.001*	0.168	0.270	0.000*	0.198	0.134

*significant at 0.05 level

students (8.9) and the staff nurse role models (8.4). The faculty group mean for External Reward (19.3) was considerably lower than the group means of the students (23.6) and the staff nurse role models (23.1). The difference between group means for Internal Reward of faculty (26.5), and students (24.9) and staff nurse role models (24.3) approached significance in the univariate F-test ($p=0.081$).

The relative importance of the work values within each group was determined by computing percentages of maximum score obtained by each group for each work value and ranking the percentages within each group. Table 6 displays the percentages of maximum scores by group for each work value and within group rankings for the work values. An examination of the data presented in Table 6 indicates that Challenge and Enhance Others received the two highest percentage scores in each group. External Reward and Aesthetics received the two lowest percentage scores in each group. There were some differences among groups in the relative scores for Physical Environment, Economic Return and Internal Reward. Students viewed Physical Environment to be of greater relative importance than did faculty and staff nurse role models. Staff nurse role models gave greater relative importance to Economic Return than did students; ranking within the faculty group was lower than in the role model group and higher than in the student group. Internal Reward was of greater relative importance to faculty than to staff nurse role models; within the student group, ranking was lower than in the faculty group and higher than in the role model group.

Similarities and differences among groups (students, faculty, staff nurse role models) in importance of the work values studied and in relative importance of these work values within each group is presented in Table 7. All groups were similar in considering Challenge and Enhancement of Others to be very important values and Aesthetics to be of least importance; there were no significant differences among groups for these three work values. While groups did not differ significantly in valuing Economic Return, within the role model group, Economic Return was of greater relative importance than within the student group. External

Table 6. Work Values: Relative Priority within Groups

Groups		
Students n=47	Faculty n=11	Role Models n=36
1. Enhance Others (94)	1. Challenge (95)	1.5. Challenge (89)
2.5. Challenge (89)	2. Enhance Others (89)	1.5. Enhance Others (89)
2.5. Physical Environment (89)	3. Internal Reward (88)	3. Economic Return (85)
4. Internal Reward (83)	4. Economic Return (76)	4. Physical Environment (84)
5. Economic Return (81)	5. Physical Environment (73)	5. Internal Reward (81)
6. External Reward (79)	6. External Reward (63)	6. External Reward (77)
7. Aesthetics (57)	7. Aesthetics (51)	7. Aesthetics (52)

Rank. Work Value (percentage of maximum possible score of group mean)

Table 7. Work Values: Similarities and Differences across Groups

		Importance of Work Values (MANOVA)	Relative Importance of Work Values within Group (Ranks)
Work Values	similarities among groups	Challenge (p=0.27) Aesthetics (p=0.198) Economic Return (p=0.168) Enhance Others (p=0.134)	Challenge----------\ highest Enhance Others----/ External Reward----\ lowest Aesthetics----------/
	differences among groups	Physical Environment (p=0.000) students and role models>faculty	Physical Environment students>faculty and role models
		External Reward (p=0.001) students and role models>faculty	Economic Return role models>students
		Internal Reward (p=0.081) faculty>students and role models	Internal Reward faculty>role models

Reward was of second to least importance for all groups, however role models and students valued External Reward significantly more than did faculty. Students and role models valued Physical Environment significantly more than did faculty; among the students Physical Environment was of greater relative importance than among faculty and role models. Faculty valued Internal Reward significantly more than did students and role models; faculty placed greater relative importance upon Internal Reward than did role models.

Differences in Perceptions of the Professional Interpersonal Environment

Cluster analyses of the elements and of the constructs of the Role Model Repertory Grid data were used to determine possible differences in perceptions of the professional interpersonal environment across the three groups. Cluster patterns for elements and cluster patterns for constructs were identified within each group. Euclidean distance was the measure used as the basis for clustering. Given the formula:

$$\text{Distance } (X,Y) = \sqrt{\sum_i (X_i - Y_i)^2}$$ (Norušis, 1985)

the value of the Euclidean distance depends upon the number of subjects (i.e., the number of differences computed) in each group. Cluster analysis forms groupings of variables in a stepwise fashion, grouping together at the first step, the variables separated from one another by the smallest Euclidean distance and continues to form groupings incorporating variables separated by increasingly greater Euclidean distances until all variables have been included in one grouping. Correcting for differences in number of subjects across the three groups, comparisons among the groups were made by comparing the distances at which particular constructs (or particular elements) combine with one another in each group. Comparison is facilitated by rescaled distance cluster combine output, which is generated by

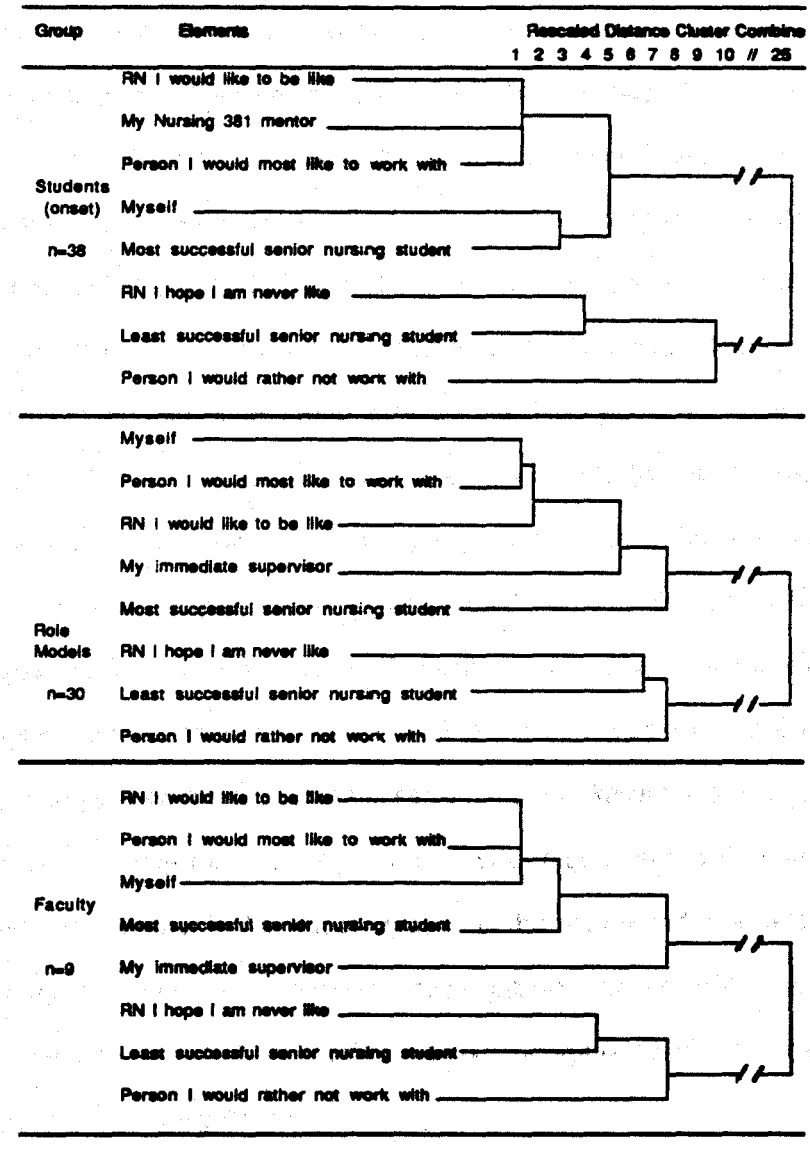
the dendogram plot option of the SPSSx procedure, CLUSTER (Norušis, 1985). The rescaled distance cluster combine output is a visual representation of steps at which variables combine with one another in cluster analysis. Distances between variables, or clusters of variables, are not plotted as "actual distances, but are rescaled to numbers between zero and 25. Thus the ratio of the distances between steps [points at which combinations occur] is preserved." (Norušis, 1985, p. 175) It should be noted that cluster analysis does not include a test of statistical significance across groups.

The tables used in this chapter to present the results of cluster analysis of the Role Model Repertory Grid, display by group (students, role models, faculty), the stepwise combinations of elements (or constructs) to form groupings. The rescaled distance cluster combine output is included to provide a graphic representation of the steps at which combinations occur. At step one, elements (or constructs) which are least distant from one another are combined. Elements (or constructs) combining at step 25 are most distant from each other. The cluster analysis procedure does not provide a method for combining elements with constructs. It is important to bear in mind that elements are similar or different with respect to one another based only upon the characteristics provided as constructs in the Role Model Repertory Grid; constructs are similar or different with respect to one another only on the basis of their salience in discriminating among the persons provided as elements in the Role Model Repertory Grid.

Element patterns

Table 8 displays element patterns in each of the three groups. Interestingly, the positive and the negative elements formed separate and distinct clusters across the groups. In each group, the last combination (indicating the greatest distance) was the combination of the positive cluster with the negative cluster.

Table 8: Element Patterns: Differences among Students, Faculty and Role Models



One means of comparing the element patterns among the groups is to examine systematically the relationships shown in Table 8 in a stepwise fashion, comparing the combinations at each step across the three groups. The elements most similar to one another in the student group were: "RN I would like to be like," "my Nursing 381 mentor" and "person I would most like to work with." Both the faculty and the role model groups included "myself" in the clusters formed at the first step. For the faculty, "myself" combined with "person I would most like to work with " and "RN I would like to be like." For the role models, "myself" and "person I would most like to work with" combined at the first step. The only second step combination was in the role model group, in which the "RN I would like to be like" combined with the "myself" - "person I would most like to work with" cluster. At the second step, the faculty and role models had identical content in the positive cluster, however role models did not view themselves as being as similar to "RN I would like to be like" as did faculty. For the students, it was not until the third step that "myself" combined with another element: "most successful senior nursing student I know." Also at the third step the positive cluster in the faculty group incorporated "most successful senior student I know;" that element did not join the positive cluster in the role model group until step eight. At the fifth step, all positive elements clustered together in the student group; in the faculty and role model groups, this did not occur until the eighth step. In the role model group, "my immediate supervisor" joined the positive cluster at step six ; that element was not incorporated into the positive cluster in the faculty group until the eighth step.

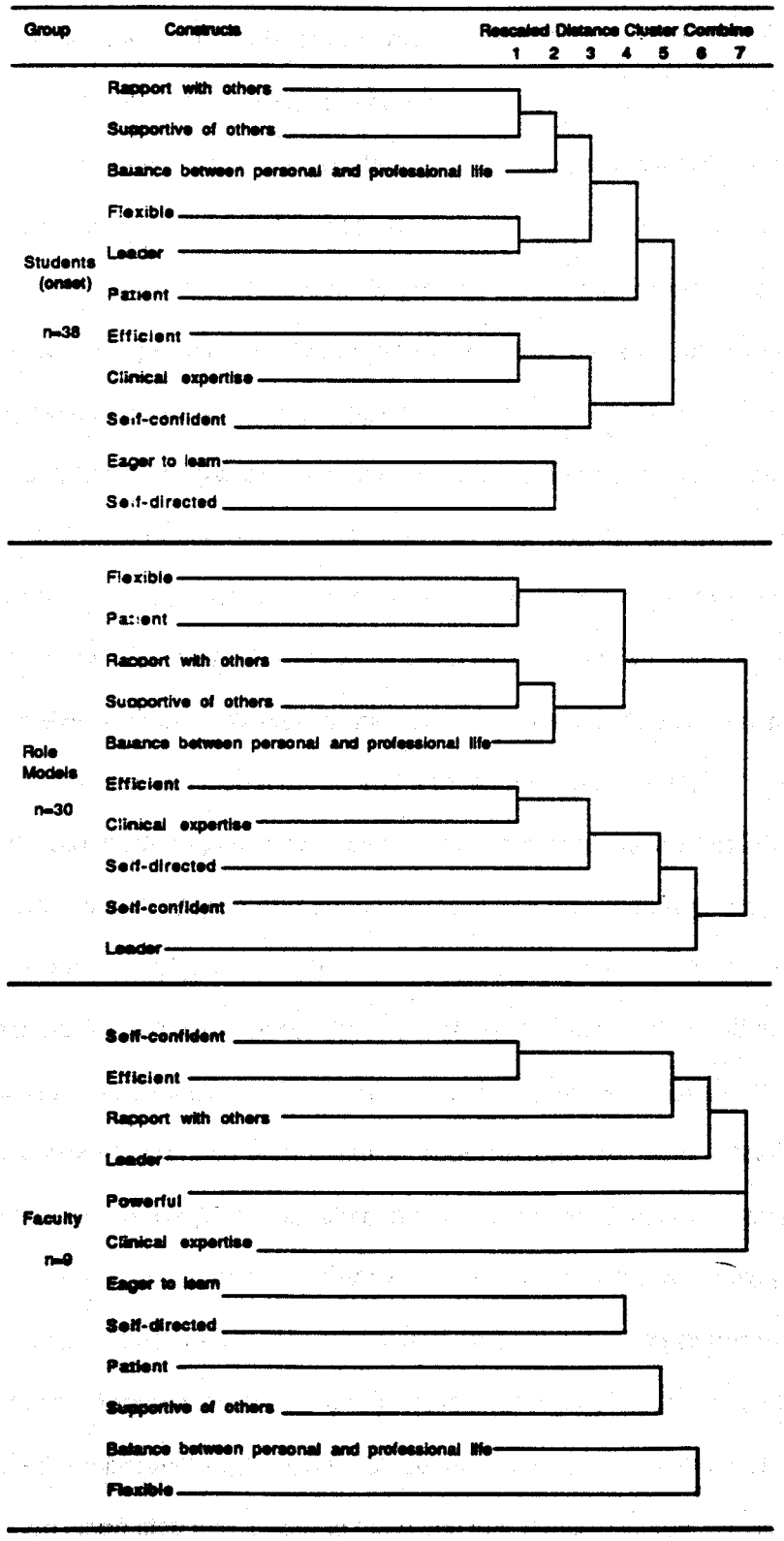
In all groups, the first combination between negative elements occurred at considerably later steps that for positive elements. In all groups, the first combination of negative elements was between "RN I hope I am never like" and "least successful senior nursing student I know" (students at the fourth step; faculty at the fifth step; role models at the seventh step). At step eight for both faculty and role model groups, "person I would

rather not work with" joined with the other two negative elements; for the student group, this combination did not occur until step ten.

Construct patterns

Table 9 displays the construct patterns for each of the three groups. The table does not include all constructs in the Grid and does not continue beyond the seventh rescaled distance. In the interpretation of cluster analysis, the conventional procedure is to interpret clusters to the step prior to the largest increase in distance between clusters. In the case of the construct clusters presented here, this occurred at step five for the student group and at step seven for the role model and faculty groups. Constructs excluded in this way are those which were not particularly salient in discriminating among the elements. The specific constructs excluded were excluded by all three groups in the case of six constructs: use of problem solving (as compared with institutional rules) for decision making; cooperativeness (as compared with competitiveness); realistic (as compared with idealistic); taking responsibility for own actions; emphasis upon comprehensive individualized patient care (as compared with safe care for groups of patients) and enjoyment in helping others learn. In the role model and student groups, the construct: powerful, was less salient (combining at step 11 in both groups) than in the faculty group in which it was incorporated into a cluster at step seven. In faculty and student groups, the construct: eager to learn, joined clusters much earlier (students, step two; faculty, step four) than in the role model group (step 10). Emphasis upon comprehensive individualized patient care joined clusters late in all three groups: students, step 18; role models, step 20 and faculty, step 22. In the role model and student groups, the last construct to be incorporated was: use of problem solving as a basis

TABLE 9. Construct Patterns: Differences among Students, Faculty and Role Models



for decision making; in the faculty group, that construct joined with flexibility and balance between personal and professional life at step 14. In the faculty group, the last combination was the combination of cooperativeness and realistic approach with all other constructs. In role model and student groups, these constructs joined others earlier (cooperativeness: step14 for students, step 15 for role models; realistic approach: step 12 for role models, step 13 for students). In general, faculty made more discriminations than did the other two groups -(i.e., in student and role model patterns, individual constructs were joined to previous clusters at earlier steps than in the faculty pattern.)

Comparing the groups stepwise, the strongest relationship in the faculty group was between self-confidence and efficiency. In the faculty group there were no other combinations until step four. Both role model and student groups had three combinations at the first step and two of the clusters were identical for these two groups: rapport with others and supportive of others; efficiency and clinical expertise. Flexibility combined at step one with patience in the role model group and with leadership in the student group. At step two, role model and student groups had another identical combination: balance in personal and professional life with rapport and supportiveness. In the student group, eager to learn and self-direction also combined at step two. At step three, the efficiency-clinical expertise cluster was joined by an additional construct in the student group (self-confidence) and in the role model group (self-direction). At the third step, two previous clusters in the student group joined (flexibility-leadership with balance-rapport-supportiveness). At the fourth step, the aforementioned cluster joined patience in the student group and in the role model group a very similar cluster was formed, differing in content only in that leadership was included in the student group. At step four, role model and student groups appeared to have constructs sorted into interpersonal emphasis and professional emphasis, except that leadership was a part of the interpersonal emphasis for students. At step four, in the first combination in the faculty group since step one, eager to learn and self-directed joined. At step five, all previous

clusters joined in the student group with the exception of the eager to learn - self-directed cluster. At step five, self-confidence became a part of the professionally oriented cluster in the role model group. In the faculty group, patience and supportiveness joined and rapport joined the efficient - self-confident cluster. At step six, balance and flexibility joined in the faculty group and in the role model group, leadership joined the professionally oriented cluster. At the seventh step, all clusters in the role model group joined together and in the faculty group, powerful and clinical expertise were joined together and added to the cluster which included self-confident, efficient, rapport with others and leader.

Summary of Results Related to Research Question #1

Differences in work values and perceptions of the professional interpersonal environment were found among nursing students, nursing faculty and staff nurse role models. Generally, students and role models were more similar to each other than either group was similar to faculty. Faculty valued Internal Reward more and valued Physical Environment and External Reward less than did students and role models. In terms of the relative priority of the seven work values studied (within each individual group), students placed higher relative importance upon Physical Environment than did faculty or role models; staff nurse role models gave greater priority to Economic Return than did students, and faculty placed greater emphasis upon Internal Reward than did the role models. All three groups differentially evaluated Challenge and Enhancement of Others as highest priorities, and External Reward and Aesthetics as lowest.

There were several ways in which each group differed from the other two groups in perceptions of the professional interpersonal environment. Faculty appeared to be more discriminating in the use of characteristics (constructs), using a larger number of characteristics in close relationships and creating a larger number of discrete relationships.

Clinical expertise, cooperativeness and realistic approach were less salient for faculty than for students and role models. Power and problem solving were more salient for faculty than for the other groups. Role models reportedly saw themselves (and other positive persons) as more similar to their immediate supervisors than did faculty. Role models and students appeared to group characteristics into two groupings: one with an interpersonal orientation and the other with a professional orientation.

Students differed from faculty and role models in viewing themselves as more distant from positive persons. Both faculty and role models viewed themselves as very closely related to the person with whom they would most like to work. Faculty also viewed "RN I would like to be like" as very similar to "myself." Students viewed themselves as most closely related to "most successful senior nursing student I know," however this was not as close a relationship as the relationship among other of the positive persons. Students were less discriminating in their view of positive persons than faculty and role models were, and viewed the "person I would least like to work with" as less similar to other negative persons than did faculty and role models.

Role models viewed eagerness to learn as less salient than did students and faculty. Faculty and students saw self-direction and eagerness to learn as closely related; for role models, self-direction was related to efficiency and clinical expertise. Faculty and students saw the "most successful senior nursing student I know" as more closely related to other positive persons than did the role models.

There were also numerous similarities among the three groups: all groups viewed the "person I would most like to work with" as very similar to some other positive person. All groups saw the relationships among positive persons as being closer than the relationships among the negative persons. All groups considered the same characteristics to be least salient. It cannot be determined from the data whether the less salient characteristics were considered unimportant, or whether a midrange value was viewed as most desirable (e.g., on

the scale of competitive=one, cooperative=seven, a value of four might be viewed as most desirable). The characteristics of lesser salience were: problem solving (versus rule orientation) as a basis for decision making; realistic (versus idealistic); taking of responsibility for own actions (versus seeing others and circumstances as responsible); emphasis upon comprehensive individualized patient care (versus safe care for groups of patients); and enjoyment in helping others learn (versus disliking helping others learn).

Results Related to Research Question #2 (What changes occur in nursing students' work values and perceptions of the professional interpersonal environment over the duration of an experience in learning by role modeling?)

Changes in Work Values

The repeated measures MANOVA analysis indicated no significant difference between students at the onset of the experience and students at the conclusion of the experience (p=0.233, Wilks). Means, standard deviations and significance of the univariate F-tests of the MANOVA analysis (effect for time) are displayed in Table 10. It should be noted that since the repeated measures design uses only cases having both onset and conclusion scores, fewer students were included in the analysis related to addressing Question #2 (n=39) than in the analysis related to addressing Question #1 (n=47). This accounts for the slight variance in student results at the onset reported for Question #1 and results reported for Question #2. While there were no significant differences overall, univariate F-tests of the MANOVA analysis (effect for time) indicated significantly lower scores at the conclusion of the experience for Enhance Others (p=0.010) and Physical Environment (p=0.025).

Table 10. Work Values of Students: Group Means, Standard Deviations and Univariate F-tests of the MANOVA (effect for time)

Group		Work Values (maximum possible score)						
		Internal Reward (30)	External Reward (30)	Economic Return (15)	Challenge (10)	Physical Environment (10)	Aesthetics (15)	Enhance Others (10)
Students (onset) n=39	mean	24.8	24.0	12.3	8.8	9.0	8.7	9.4
	standard deviation	2.5	2.7	2.3	1.1	1.0	2.6	0.9
Students (conclusion) n=39	mean	24.4	23.4	12.3	8.7	8.5	8.7	8.9
	standard deviation	3.1	2.8	2.0	1.1	1.0	2.9	1.2
Univariate F-test significance of F		0.268	0.144	1.000	0.645	0.025*	0.933	0.010*

*significant at 0.05 level

The data appearing in Table 11 present the percentage of maximum score possible obtained by students for each work value, ranked at the onset and at the conclusion of the experience. An examination of the data reported in Table 11 indicates that the relative positions of the work values ranking highest (Enhance Others) and the two values ranking lowest (External Reward and Aesthetics) remained the same. Challenge and Economic Return increased in relative importance, while Physical Environment and Internal Reward decreased in relative importance.

Table 11. Work Values: Relative Priority of Students at the Onset and at the Conclusion

Time	
Students at the onset n=39	Students at the conclusion n=39
1. Enhance Others (94)	1. Enhance Others (89)
2. Physical Environment (90)	2. Challenge (87)
3. Challenge (88)	3. Physical Environment (85)
4. Internal Reward (83)	4. Economic Return (82)
5. Economic Return (82)	5. Internal Reward (81)
6. External Reward (80)	6. External Reward (78)
7. Aesthetics (58)	7. Aesthetics (58)

Rank. Work Value (percentage of maximum possible score of group mean)

The data appearing in Table 12 summarize similarities and differences in work values between students at the onset and at the conclusion of the experience. Students' valuation of Aesthetics and External Reward did not change significantly over the duration of the experience; the relative importance students placed upon External Reward and Aesthetics remained lowest. Enhance Others remained highest priority, however students valued Enhancement of Others significantly less at the conclusion of the experience than they had at

Table 12. Work Values: Similarities and Differences between Students at the Onset and Students at the Conclusion

		Importance of Work Values (MANOVA)	Relative Importance of Work Values within Group (Ranks)
Work Values	similarities between onset and conclusion	Economic Return (p=1.000) Aesthetics (p=0.933) Challenge (p=0.645) Internal Reward (0.268) External Reward (p=0.144)	Enhance Others-----highest External Reward----\ lowest Aesthetics----------/
	differences between onset and conclusion	Enhance Others (p=0.010) conclusion<onset Physical Environment (p=0.025) conclusion<onset	Challenge-------\ Economic Return---------/ increased Physical Environment-\ Internal Reward--------/ decreased

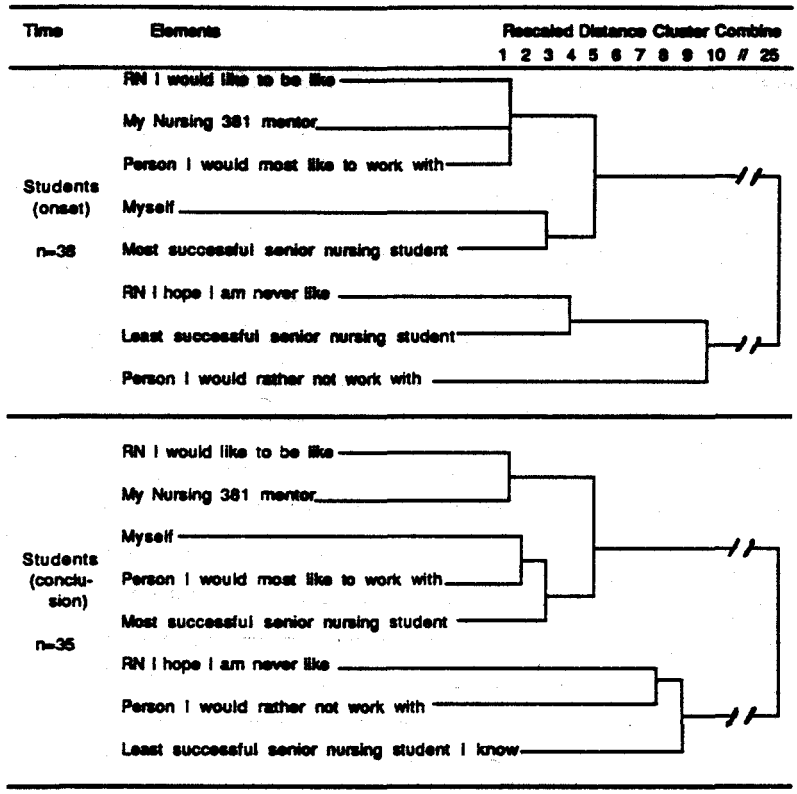
the onset. Students' valuation of Internal Reward did not change significantly over the duration of the experience, however Internal Reward decreased in relative priority. Challenge and Economic Return were not valued significantly differently at the conclusion of the experience than at the onset, however both became higher priorities within the student group. Physical Environment was valued significantly less by students at the conclusion of the experience and also decreased in relative priority within the group.

Changes in Perceptions of the Professional Interpersonal Environment

Element patterns

A comparison of element patterns between students at the onset and at the conclusion of the experience is presented in Table 13. The relationships involving "myself" were different at the conclusion of the experience: "myself" was most closely related to "most successful senior nursing student I know" at the onset; at the conclusion, "myself" was most closely related to "person I would most like to work with." At the conclusion, students viewed "myself" as more closely related to other positive elements than at the onset. "Myself" and "my Nursing 381 mentor" were more closely related at the conclusion (Euclidean distance=67.5) than at the onset (Euclidean distance=98.5). At the conclusion, the "person I would rather not work with" was more like the "RN I hope I am never like." The senior nursing student element, in both negative and positive valences, was less like other persons in the negative and positive groupings respectively at the conclusion of the experience. Onset and conclusion patterns were similar in that positive and negative persons were grouped as distinct clusters which were maximally unlike each other and in that "RN I would like to be like" and "my Nursing 381 mentor" were very closely related at both times.

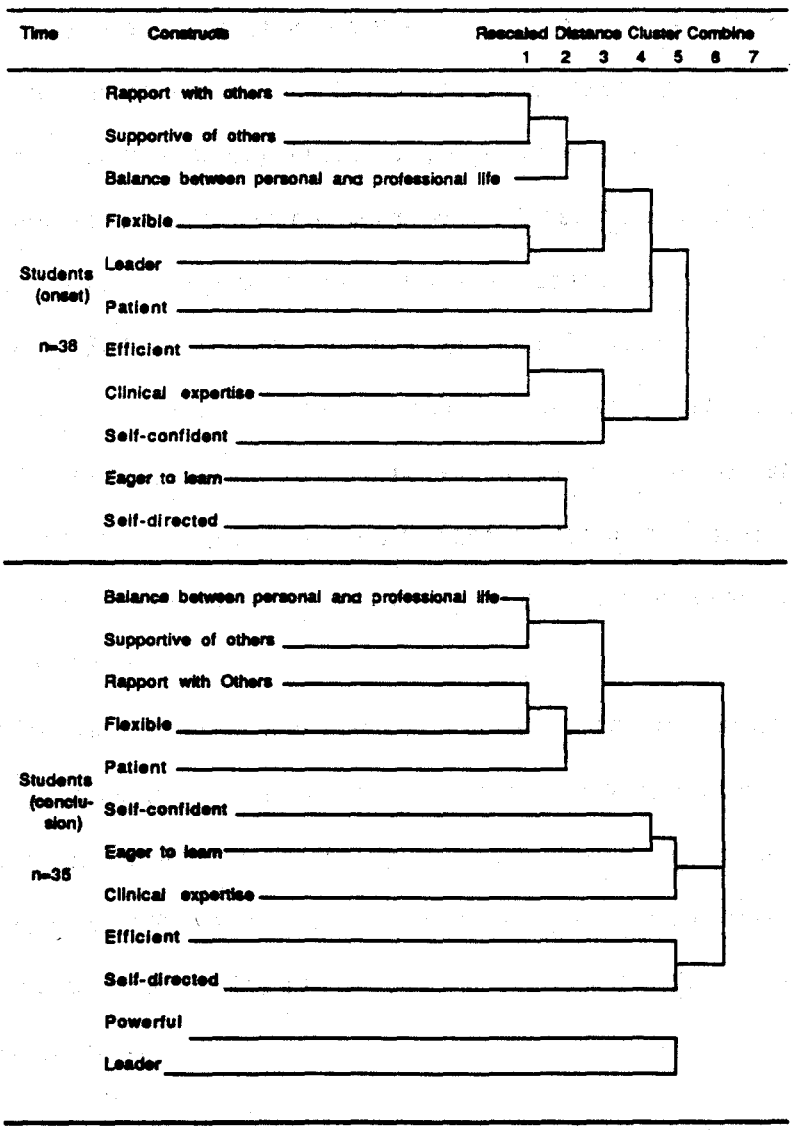
Table 13: Element Patterns: Differences in Students between Onset and Conclusion



Construct patterns

There were changes in the salience and interrelationship of constructs in the student group between the onset and the conclusion of the experience, as the data presented in Table 14 indicate. Interpersonal and professional groupings could be identified at the conclusion as well as at the onset, however the composition of the groupings changed somewhat and the interpersonal cluster increased in salience while the professional cluster decreased in salience. Other changes in salience included increased salience of balance, power, patience and realistic orientation. Although realistic orientation remained among the least salient constructs overall, at the conclusion it was combined at step 11 with cooperativeness. At the onset, realistic orientation combined with enjoyment in helping

Table 14. Construct Patterns: Differences in Students between Onset and Conclusion



others learn at step 13 and that pair was joined by cooperativeness at step 14. Constructs which decreased in salience were: leadership, efficiency, clinical expertise, eagerness to learn and self-direction.

Changes in combinations included the combination of leadership and power. At the onset, leadership was a part of the interpersonally oriented cluster. At the conclusion the powerful-leader combination was more closely related to the professional cluster than to the interpersonal cluster, joining with both of these groupings at step nine. At the onset, eager to learn and self-directed formed a discrete cluster which joined both the interpersonal and professional clusters at step eight. At the conclusion, eager to learn was a part of the professional cluster. Self-direction and efficiency were closely related to each other at the conclusion and more closely related to the professional cluster, joining both the professional and interpersonal clusters at step six. At the conclusion there was greater distance between professional and interpersonal groupings, partially because at the conclusion, interpersonal constructs were more closely related to each other and professional constructs were less closely related to each other.

Similarities between onset and conclusion construct patterns, in addition to the formation of interpersonal and professional clusters, were: rapport, supportiveness, flexibility and balance were highly salient and closely related to each other; constructs included in the least salient category were the same, with the exception of powerful; eager to learn was most closely related to a construct dealing with the sense of self (self-direction at the onset, self-confidence at the conclusion).

Summary of Results Related to Research Question #2

Changes were found in nursing students' work values and perceptions of the professional interpersonal environment over the duration of the experience in learning by role modeling. In terms of work values, less value was placed upon Enhancement of Others and

the Physical Environment. The relative importance to the students of the seven work values studied changed somewhat: Enhancement of Others remained most important; Challenge and Economic Return gained in relative importance; Physical Environment and Internal Reward decreased in relative importance. The two lowest priorities remained External Reward and Aesthetics.

In terms of perceptions of the professional interpersonal environment, students viewed themselves as more similar to other positive persons at the conclusion of the experience: especially the "person I would most like to work with" and "my Nursing 381 mentor." The role of student, both in its positive and negative orientations, was more distant from the students' concept of other positive or negative persons. The concept of co-worker, both desirable and undesirable, became a more closely related part of positive or negative categories. Interpersonal constructs became more salient in discriminating among the persons provided and were, as a grouping, more distant from professional constructs than at the onset. The grouping of professional constructs increased in breadth, though the constructs were not as closely related to one another as they were at the onset. The construct of power increased in salience and was most closely related to leadership. At the onset leadership had been a part of the interpersonal grouping of constructs, but at the conclusion was (with power) more closely related to the professional grouping.

Results Related to Research Question #3 (Are there relationships among changes which occur in a nursing student over the duration of an experience in learning by role modeling and the work values and perceptions of the interpersonal environment held by the student's staff nurse role model?)

Two different types of comparisons were made to address this question. First, changes in nursing students' work values and element and construct patterns (as described

in the previous section related to Question #2) were compared with staff nurse role model results (as described in the section related to Question #1.) Secondly, work values and Role Model Repertory Grid results of all students who provided both onset and conclusion data and whose specifically assigned role models also provided data were analyzed. (Twenty-nine pairs for work values; twenty-one pairs for perceptions of the professional interpersonal environment). In each student-role model pair, difference scores between student and role model were obtained for the onset and the conclusion. The difference score computed was the absolute value of the difference between student and role model on: each of the seven work values at the onset and at the conclusion; each element of the Grid at the onset and at the conclusion; and, each construct of the Grid at the onset and at the conclusion. Differences between students and role models at the onset were compared with differences between students and role models at the conclusion.

Relationships in Work Values

Although changes in students' work values were not significant (refer to the repeated measures MANOVA analysis reported in the previous section), changes which did occur were all in the direction of greater similarity to role models. The students' valuation of Enhancement of Others decreased (from a mean of 9.4 at the onset to 8.9 at the conclusion), becoming equal to both role model and faculty group means.; although the students' mean decreased, Enhancement of Others remained the highest relative value in the student group. Students' valuation of Physical Environment decreased (from a mean of 9.0 at the onset to 8.5 at the conclusion), becoming more similar to role models (mean=8.4). The relative priority of Physical Environment in the student group fell from second to third; in the role model group Physical Environment ranked fourth. Challenge and Economic Return gained in relative value in the student group (from third to second and fifth to fourth respectively); in the role model

group, Challenge ranked highest and Economic Return ranked third. The relative valuation of Internal Reward decreased from fourth to fifth in the student group; Internal Reward also ranked fifth in the role model group. The change in relative valuation of Internal Reward is the only work value in which the change in the student group was not in the direction of the faculty as well as the staff nurse role models. In the faculty group, Internal Reward ranked third.

There were 29 student-role model pairs for which work values difference score comparisons could be made. Of these, there were only two pairs in which students did not become more similar to role models in at least one of the seven work values. For these two pairs, student-role model differences in work values remained the same for four work values in one pair and five in the other. In 18 pairs, the number of the seven work values for which student-role model differences remained the same was greater than the number of values for which differences changed. Nineteen pairs showed student change toward greater similarity to the role model in one, two or three work values; in eight pairs, students became more like their role models in four or more work values. External Reward was the only work value in which more pairs increased in similarity (15) than remained the same (4) or became less similar (10). For four of the work values, more student-role model differences remained the same than changed: Enhance Others (20); Challenge (16); Physical Environment (13); Economic Return (11). In the case of two work values, the difference between students and role models increased in more pairs than remained the same or decreased: Internal Reward (15) and Aesthetics (12).

The repeated measures MANOVA analysis (comparing differences in work values between paired students and role models at the onset of the experience with differences in work values between paired students and role models at the conclusion of the experience) indicated no significant effect for time ($p=0.441$, Wilks). In the univariate F-tests of the MANOVA, significance was approached in the case of two work values: Challenge ($p=0.088$)

and Internal Reward (p=0.107). In both cases, the difference between student and role model was greater at the conclusion of the experience than it had been at the onset.

Summary of relationships among changes in student work values and work values held by role models.

There appeared to be few systematic relationships among work values of role models and changes in student work values over the duration of the experience which held true for the sample as a whole. As is evident from the findings reported above, somewhat different impressions were obtained when different analytic approaches were used. This was because the student and role model groups were not substantially different from one another at the onset and because the students, as a group, did not change substantially from the onset to the conclusion. Also, MANOVA analysis is based upon the extent of change (difference scores) whereas frequency counts among pairs were simply categorical (change toward similarity to role model; no change; change toward greater difference from role model) and did not take into account the magnitude of change. Findings to support systematic relationships among changes in student work values and role model work values were not conclusive, however some trends were noted. Enhancement of Others remained the highest priority; in more than 50% of the pairs, student-role model differences remained the same, however for those pairs in which change occurred, it was sufficient to reduce the student group mean so that student and role model groups had equal means. Physical Environment became less important to students, which was an increase in similarity to role models. Although Challenge became of greater relative importance within the student group (as it was for role models), for more than 50% of the student role model pairs, differences between students and role models remained the same. Economic Return became of greater importance to students, which represented increased similarity to role models. Though relative importance of Internal Reward decreased in the student group (becoming more similar

to role models), in more than 50% of the pairs, students differed more from their role models at the conclusion of the experience. In more than 50% of the pairs, students became more similar to role models in valuation of External Reward.

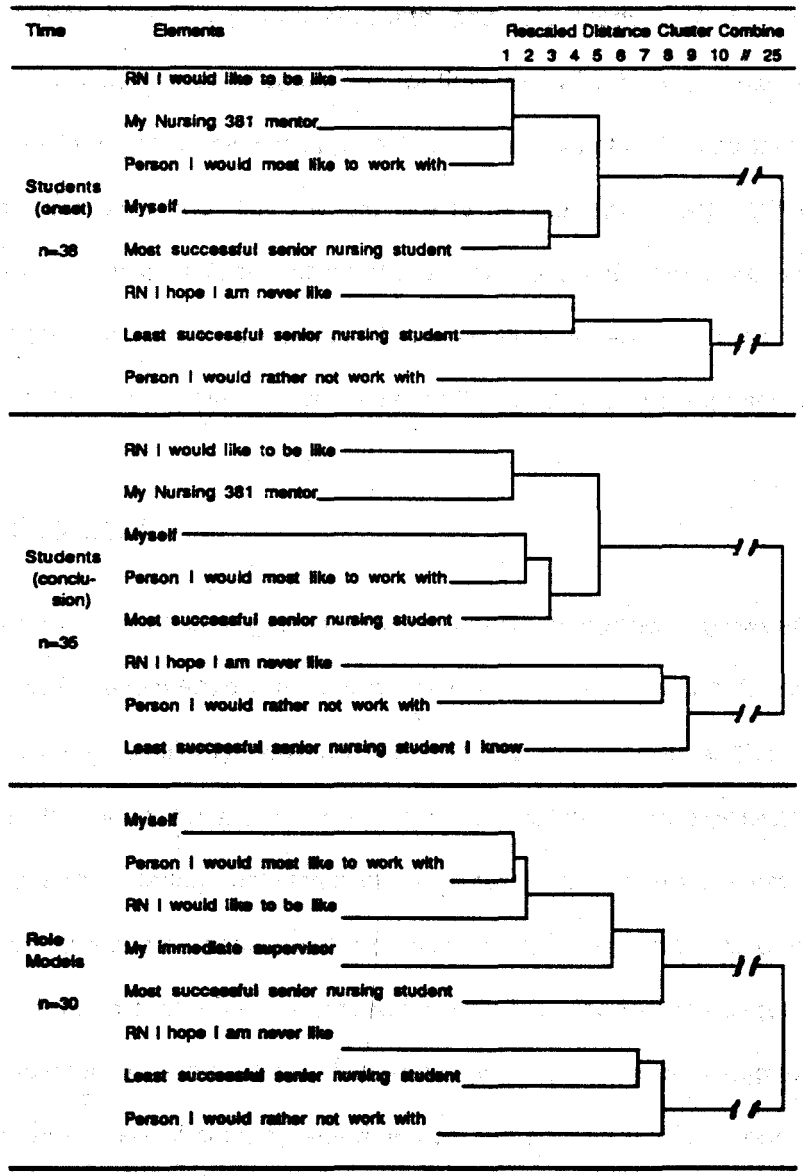
Relationships in Perceptions of the Professional Interpersonal Environment

Element relationships

Comparison of changes in student element patterns between the onset and conclusion of the experience with staff nurse role model element patterns (see Table 15), showed increased similarity between role models and students at the conclusion of the experience in several respects: the students' view of "myself" in closer proximity to the "person I would most like to work with" and closer relationship of "myself" with other positive elements; the students' view of the senior nursing student element (both successful and unsuccessful) as less closely related to other elements in its cluster, and the students' view of positive elements as more closely related to each other than negative elements. The change in the students' view of the "person I would rather not work with" as more closely related to "RN I hope I am never like" was very similar to the role models' view of these elements. At the onset of the experience, the students had viewed the "RN I hope I am never like" as most similar to the "least successful senior nursing student I know," as the faculty had.

Examination of the 21 student-role model pairs for which complete Repertory Grid data were available, revealed that students' similarity to role models on each element increased in more than 50% of the pairs. In 72% of the pairs, students became more similar to role models in rating "RN I would like to be like." In 57% of the pairs, students became more similar to role models in rating "least successful senior nursing student I know." For each of the remaining six elements, increased similarity between students and role models was noted in 52% of the pairs. Sixty-two percent of the pairs showed increased similarity between

Table 15. Element Patterns: Comparison of Students at Onset and at Conclusion with Role Models



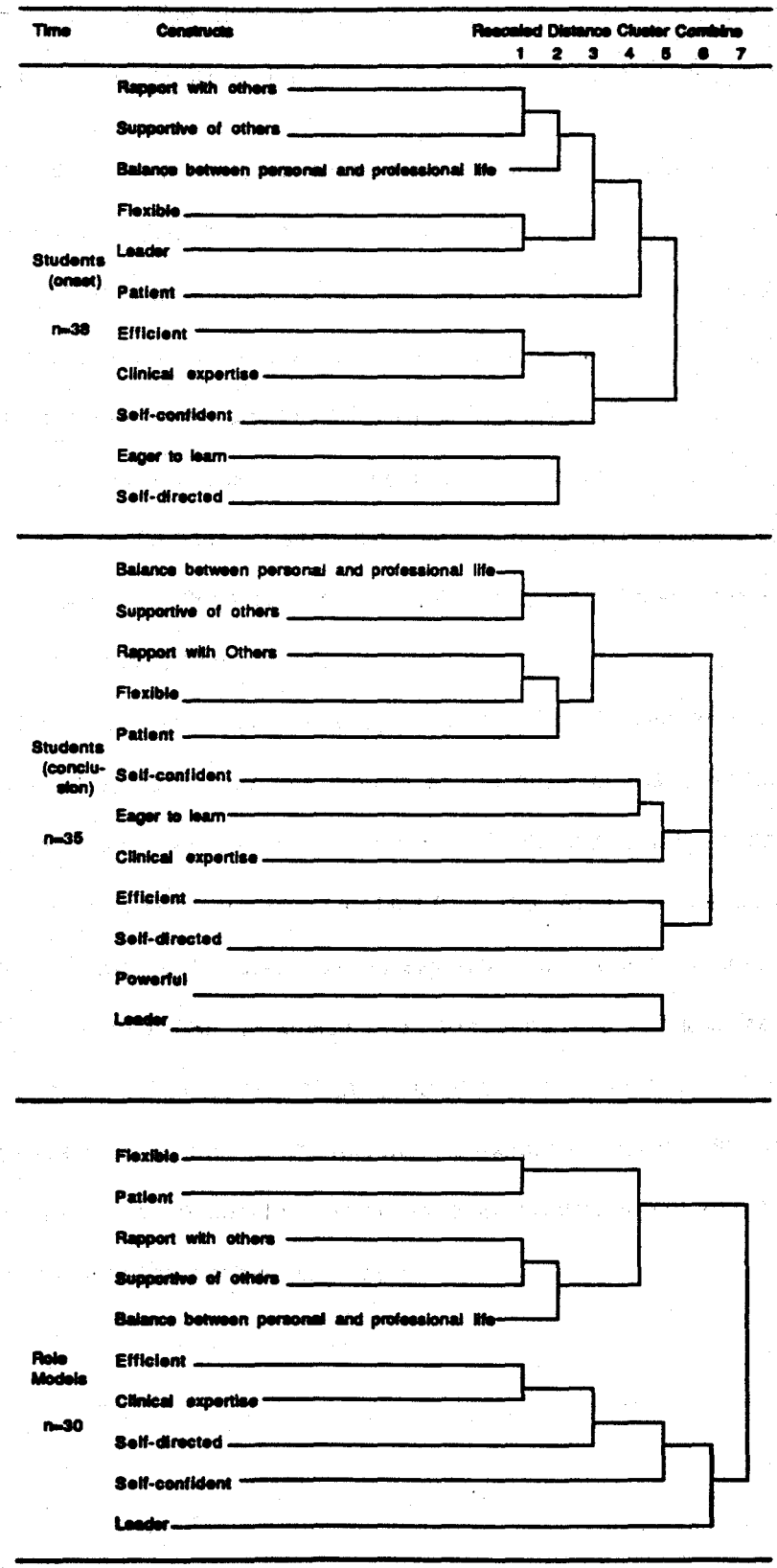
students and role models on four or more of the eight elements. Fifty percent of the pairs showed increased similarity on five or more elements.

The repeated measures MANOVA analysis (comparing differences in element ratings between paired students and role models at the onset of the experience with differences in element ratings between paired students and role models at the conclusion of the experience) indicated no significant effect for time (p=0.260, Wilks). In the univariate F-tests of the MANOVA, significance was approached in the case of two elements: "RN I hope I am never like" (p=0.059) and "RN I would like to be like" (p=0.064). Differences between students and role models in perception of the "RN I hope I am never like" increased over the duration of the experience. Differences between students and role models in perception of the "RN I would like to be like " decreased over the duration of the experience.

Construct Relationships

Comparison of changes in student construct patterns between the onset and conclusion of the experience with staff nurse role model construct patterns (see Table 16), showed increased similarity between students and role models at the conclusion of the experience. In student construct clusters at the conclusion of the experience (in comparison with onset cluster patterns): constructs in the professional cluster were less closely related to one another; the interpersonal cluster became more salient than the professional cluster; patience and realistic orientation increased in salience; leadership, eagerness to learn and self-direction decreased in salience; leadership was more closely related to the professional than to the interpersonal cluster; self-direction and efficiency were more closely related to each other and to the professional cluster; eagerness to learn was more closely related to the professional cluster; the professional and interpersonal clusters were more distant from one

Table 16. Construct Patterns: Comparison of Students at Onset and Conclusion with Role Models



another; the interpersonal cluster no longer included leadership, making student and role model clusters identical in composition; the professional cluster included more constructs.

Examination of the 21 student-role model pairs for which complete Repertory Grid data were available, revealed that students' similarity to role models increased in at least 48% of the pairs on six of the 18 constructs: supportiveness, 62%; realistic approach, 57% ; emphasis upon comprehensive individualized patient care, 52%, and for each of the constructs: clinical expertise, power and flexibility, 48%. The constructs showing increased similarity in the fewest number of pairs were self-confidence and efficiency, each showing greater similarity in 19% of the pairs. Twenty-nine percent of the pairs showed increased similarity on nine or more of the 18 constructs. Fifty percent of the pairs showed increased similarity on seven or more constructs.

The repeated measures MANOVA analysis (comparing differences in construct ratings between paired students and role models at the onset of the experience with differences in construct ratings between paired students and role models at the conclusion of the experience) indicated no significant effect for time ($p=0.198$, Wilks). In the univariate F-tests of the MANOVA, two constructs showed significant difference: self-confidence ($p=0.002$) and efficiency ($p=0.003$). Emphasis upon comprehensive individualized patient care approached significance ($p=0.071$). In the case of perception of self-confidence and efficiency, differences between students and role models increased over the duration of the experience. Differences between students and role models in perception of emphasis upon comprehensive individualized patient care decreased.

Summary of relationships among changes in student perceptions of the professional interpersonal environment and perceptions held by role models.

Ways in which student perceptions at the conclusion of the experience were more similar to role model perceptions than they had been at the onset included greater emphasis upon the person with whom one would (or would not) like to work and decreased emphasis upon the successful (or unsuccessful) senior nursing student. Self was viewed by the students as more similar to the "person I would most like to work with." Most students became more similar to their role models in their perceptions of the persons who represented the role descriptions provided. Perception of "RN I would like to be like" showed greatest increase in similarity between students and role models. The concepts of professionalism and interpersonal relations were perceived more similarily by students (at the conclusion of the experience) and their role models. At the conclusion of the experience, students perceived interpersonal constructs as more salient in discriminating among the persons who represented the role descriptions provided. Most students became more similar to their role models in perception of one-third of the characteristics (i.e., constructs) provided. Supportiveness, realistic approach and emphasis upon comprehensive individualized patient care were the characteristics which the greatest numbers of students perceived more similarily to their role models at the conclusion of the experience.

Results Related to Research Question #4 (Are there relationships among changes occurring in nursing students over the duration of an experience in learning by role modeling and any of the following parameters: student's self-appraisal; student's appraisal of her staff nurse role model; perceived interpersonal styles of the student and of her staff nurse role model; perceived autonomy of the student and of her staff nurse role model?)

Research Question #4 was addressed by correlating change in students over the duration of the experience with each of the four parameters specified above. Five variables were constructed to measure: change in nursing students over the duration of an experience in learning by role modeling; student's self-appraisal; student's appraisal of her staff nurse role model; perceived interpersonal styles of the student and of her staff nurse role model, and perceived autonomy of the student and of her staff nurse role model. Sufficient data for computation of these variables were available for 20 student-role model pairs.

Change in Nursing Students over the Duration of an Experience in Learning by Role Modeling

The change variable was measured by computing the difference between each student and her role model on each of the seven work values and on each element and each construct at the onset of the experience and at the conclusion of the experience. Sums of onset differences and of conclusion differences were computed for each student-role model pair. The sum of the conclusion differences was then subtracted from the sum of the onset differences for each pair providing a value for each pair. The value obtained indicated the magnitude of increased similarity between students and role models in the case of positive values and decreased similarity in the case of negative values. Values for the 20 student-role model pairs ranged from +141 to -174; mean= +2.4; standard deviation= 66.9. Distribution

of this variable indicated great variability in the extent to which students became like their role models.

Student's Self-Appraisal

The variable, student's self-appraisal, was measured by computing a value for each student for the Student's Self-Appraisal Scale (see Table17), subtracting (from the scale score obtained) distances between "myself" and positively oriented elements of the Role Model Repertory Grid ("RN I would like to be like," "most successful senior nursing student I know," "person I would most like to work with") and adding to the value obtained the element distances between the negatively oriented elements of the Role Model Repertory Grid ("RN I hope I am never like," "least successful senior nursing student I know," "person I would rather not work with"). The Student's Self-Appraisal Scale (see Table 17) was created by performing a reliability analysis using student ratings of "myself" on various combinations of constructs of the Role Model Repertory Grid which appeared to be components of positive self-appraisal. The most reliable combination (Cronbach's alpha= 0.77) was: self-confident, efficient, clinically expert, self-directed. Scale scores were obtained by summing ratings of "myself" on the constructs included in the scale. Prior to reliability analysis and computation of scale scores, construct ratings were recoded so that the more desirable pole of each construct was seven . Values of the variable, student's self-appraisal, for the 20 student-role model pairs ranged from +269 to -4; mean= 92.4; standard deviation= 76.3. The distribution indicated great variability in student's self-appraisal.

Table 17. Student's Self-Appraisal Scale

Student rating of the element "Myself" on the constructs:
self-confident efficient clinical expertise self-directed
n=44 students Cronbach's alpha= 0.77

There was a moderate negative relationship (Spearman rho= -0.48; p= 0.02) between change in the student in the direction of the role model and student's self-appraisal. Examination of change in particular work values, elements and constructs of the Role Model Repertory Grid in relation to students' self-appraisal indicated that among those students who became more similar to their role models in valuation of Internal Reward and Economic Return and in perception of balance between personal and professional life, self-confidence and emphasis upon comprehensive individualized patient care, self-appraisal scores tended to be lower. Among students who perceived themselves as more similar to their role models at the conclusion of the experience, self-appraisal scores tended to be lower. Among students who became more similar to their role models in perception of eagerness to help others learn, self-appraisal scores tended to be higher.

Student's Appraisal of her Staff Nurse Role Model

The variable, student's appraisal of her staff nurse role model, was measured by computing a value for each student for the Student's Appraisal of Staff Nurse Role Model Scale (see Table 18), subtracting from the scale score the element distance between the student's rating of "my Nursing 381 mentor" and "RN I would like to be like." and adding to the value obtained the student's rating of "my Nursing 381 mentor" and "RN I hope I am never like." The Student's Appraisal of Staff Nurse Role Model Scale (see Table 18) was created

by performing a reliability analysis using student ratings of "my Nursing 381 mentor" on various combinations of constructs of the Role Model Repertory Grid which appeared to be components of positive appraisal of the role model by the student. The most reliable combination (Cronbach's alpha= 0.79) was: rapport with others, efficiency, clinical expertise, self-directedness, flexibility, supportiveness and leadership. The scale score was computed by summing the ratings given by the student to her role model on those seven constructs. Values of the variable, student's appraisal of staff nurse role model, for the 20 student-role model pairs, ranged from 128 to 37; mean= 81.9; standard deviation= 26.4.

Table 18. Student's Appraisal of Staff Nurse Role Model Scale

Student rating of the element "My Nursing 381 mentor" on the constructs:
rapport with others
efficient
clinical expertise
self-directed
flexible
supportive
leader
n=44 students
Cronbach's alpha= 0.79

There was not a significant Spearman correlation between student's appraisal of staff nurse role model and change in the student toward greater similarity to her role model (p= 0.29). Examination of change in particular work values and elements and constructs of the

Role Model Repertory Grid in relation to student's appraisal of the role model indicated more positive appraisal of the role model among those students who changed toward greater similarity to the role model in valuation of Challenge and perception of the "least successful nursing student I know," the "person I would most like to work with," rapport with others, cooperativeness, realistic approach, clinical expertise, self-direction, eagerness to help others learn, patience and supportiveness. Among those students whose perception of their role models became more similar to the role model's perception of "my immediate supervisor," student's appraisal of the role model tended to be more positive.

Perceived Interpersonal Styles of the Student and of her Staff Nurse Role Model

The interpersonal styles variable had three components: student view of self; role model view of self, and student view of role model. Each of the view of self components was measured by summing scores for External Reward, Altruism and the scale score created to contribute to measurement of the variable. Two scales, the Student's Perception of Own Interpersonal Style Scale (see Table 19) and the Staff Nurse Role Model's Perception of Own Interpersonal Style Scale (see Table 20), were constructed. In each case, a reliability analysis was performed using ratings of "myself" by the respective group on various combinations of constructs of the Role Model Repertory Grid which appeared to be related to interpersonal style. As comparison of the scale displayed in Table 19 with the scale displayed in Table 20 indicates, the combinations yielding the highest reliability coefficient were different in the two groups (students and role models). In the student group, the scale was composed of rapport with others, balance between personal and professional life and supportiveness (Cronbach's alpha= 0.62). In the role model group, the scale consisted of more constructs, including those which composed the student scale and also: self-directedness, enjoyment in helping others learn, flexibility and patience (Cronbach's alpha= 0.74). Scale scores for each scale

were obtained by summing ratings given by the subjects to "myself" on the constructs which composed the scale appropriate for the subject's respective group (student or role model).

Table 19. Student's Perception of Own Interpersonal Style Scale

Student rating of the element "Myself" on the constructs:
rapport with others balance between personal and professional life supportive
n=44 students Cronbach's alpha= 0.62

Table 20. Staff Nurse Role Model's Perception of Own Interpersonal Style Scale

Staff nurse role model's rating of the element "Myself" on the constructs:
rapport with others balance between personal and professional life cooperative self-directed enjoys helping others learn flexible patient supportive
n=36 staff nurse role models Cronbach's alpha= 0.74

A student view of the role model score was obtained by computing a value for each student for the Student's Perception of Staff Nurse Role Model's Interpersonal Style Scale (see Table 21) (by summing the ratings given by the student to "my Nursing 381 mentor" on the constructs included in the scale) and subtracting from the scale score the element

distance between the student's rating of "my Nursing 381 mentor" and the "person I would most like to work with " on the Role Model Repertory Grid. The scale (see Table 21) was constructed by performing a reliability analysis using various combinations of student ratings of "my Nursing 381 mentor" on constructs which appeared to be indicators of interpersonal style. The combination yielding the highest reliability coefficient included all constructs of the Staff Nurse Role Model Perception of Own Interpersonal Style Scale plus taking of responsibility for own actions (Cronbach's alpha= 0.74).

Table 21. Student's Perception of Staff Nurse Role Model's Interpersonal Style Scale

Student rating of the element "My Nursing 381 mentor" on the constructs:
rapport with others
balance between personal and professional life
cooperative
takes responsibility for own action
self-directed
enjoys helping others learn
flexible
patient
supportive
n=44 students Cronbach's alpha= 0.72

Values for each of the three components (student view of self, role model view of self and student view of role model) were then summed for each student-role model pair, yielding a single score for each pair for the variable, perceived interpersonal styles of the student and of her staff nurse role model. Values of the variable for the 20 student-role model pairs ranged from 193 to 140; mean= 160.5; standard deviation= 11.9. Spearman correlation of interpersonal style with change in the student toward greater similarity to the role model was

not significant (p= 0.26). Examination of change in particular work values and elements and constructs of the Role Model Repertory Grid in relation to interpersonal styles indicated higher interpersonal style scores among those students who changed toward greater similarity to their role models in perception of the "most successful senior nursing student I know" and lower interpersonal style scores among those students who became more like their role models in valuation of Internal Reward and perception of balance in personal and professional life, realistic approach, eagerness to learn, patience and supportiveness.

Perceived Autonomy of the Student and of her Staff Nurse Role Model

The autonomy variable had three components: student's view of own autonomy, role model's view of own autonomy and student's view of role model's autonomy. The three components were summed to obtain a value of the variable for each student-role model pair. The view of self components were created by summing the perception of own autonomy scale score and the Internal Reward score for each student and role model. Separate scales for view of own autonomy were constructed: one for students (see Table 22) and one for role models (see Table 23). In each case, a reliability analysis was performed using ratings of "myself" by the respective group (student or role model) on various combinations of constructs of the Role Model Repertory Grid which appeared to be related to autonomy. As comparison of the scales presented in Table 22 and Table 23 indicates, the combinations yielding the highest reliability coefficient differed slightly between the two groups. The student's scale was composed of self-confidence, power, self-direction and leadership (Cronbach's alpha= 0.67). The role model's scale consisted of only power, self-direction and leadership (Cronbach's alpha= 0.69). The third component of the autonomy variable was the Student's Perception of Staff Nurse Role Model's Autonomy Scale (see Table 24). This scale was created by performing a reliability analysis using student ratings of "my Nursing 381 mentor" on various combinations of constructs of the Role Model Repertory Grid which

appeared to be indicators of autonomy. The combination producing the highest reliability coefficient was: self-confidence, power and self-direction (Cronbach's alpha= 0.82). Scale scores for each scale were obtained by summing the ratings given by the appropriate subject (student or role model) to the appropriate element ("myself" or "my Nursing 381 mentor") for each of the constructs which composed the scale.

Table 22. Student's Perception of Own Autonomy Scale

Student rating of the element "Myself" on the constructs:
self-confident powerful self-directed leader
n=44 students Cronbach's alpha= 0.67

Table 23. Staff Nurse Role Model's Perception of Own Autonomy Scale

Staff nurse role model's rating of the element "Myself" on the constructs:
powerful self-directed leader
n=36 staff nurse role models Cronbach's alpha= 0.69

Table 24. Student's Perception of Staff Nurse Role Model's Autonomy Scale

Student rating of the element "My Nursing 381 mentor" on the constructs:
self-confident powerful self-directed
n=44 students Cronbach's alpha= 0.82

Values for the autonomy variable for the 20 student-role model pairs ranged from 118 to 87; mean= 103.2; standard deviation= 6.8. Spearman correlation of the autonomy variable with change in the student toward greater similarity to the role model was not significant (p=0.47). Examination of change in the student toward greater similarity to the role model in relation to autonomy indicated that among students who changed toward greater similarity to their role models in perception of cooperativeness, autonomy scores were higher, while autonomy scores were lower among students who became more similar to their role models in perception of self-direction and valuation of Internal Reward, Economic Return and Aesthetics. Among students whose perceptions of themselves became more similar to their perceptions of their role models, autonomy scores were lower.

CHAPTER V

DISCUSSION

The findings of this study are discussed in the three sections. First, the results related to each of the four research questions are reviewed and explained. Overall results are discussed within the context of reciprocal determinism and role modeling. Theoretical and practical implications of the findings of the investigation are presented with respect to reciprocal determinism, role modeling, Repertory Grid methodology and instructional implications. Finally research recommendations are offered, based upon some of the limitations and possible extensions of the study which is reported here.

Research Questions

Question #1: What are the differences among nursing students, nursing faculty and staff nurse role models in terms of work values and perceptions of the professional interpersonal environment?

Results related to Question #1 were the most definitive findings of the investigation. Differences in work values and perceptions of the interpersonal environment were clearly identified across the three groups. Given that the overall sample was relatively homogenous (all subjects were either students or employees of the same university and the vast majority of subjects were white females between the ages of 20 and 40 years), the relationship between differences across the groups and group membership can be asserted with considerable confidence. It is quite possible that greater differences might be found if groups of students, faculty and role models representing a variety of institutions were studied, though that is a question for further research. In general, faculty differed from students and role models to a

greater extent than students and role models differed from each other. This finding is similar to Cason and Beck's (1982) finding among graduate nursing students, graduate nursing faculty and clinical nurse specialists who served as preceptors for the graduate students. The lack of great differences between students and role models created some difficulties in analysis related to the other research questions addressed in the investigation. One purpose of establishing differences across the groups at the onset of the experience in learning by role modeling was to use role model results as criteria with which to compare student results at the conclusion of the experience. Comparison of student results at the conclusion of the experience with role model results was planned in order to identify the nature and extent of the students' change toward greater similarity to the role models. The student group and the role model group were similar to one another in many ways at the onset of the experience, which limited the nature and extent of students' change toward greater similarity to role models which could be demonstrated.

Student, role model and faculty groups appeared to be similar in valuing challenge and enhancement of others more than the other work values examined. The desire to help others and add to their well being is frequently reported to be significant among the reasons given by individuals entering the field of nursing. Job satisfaction and continuance of individuals in careers in nursing seem to be related to nurses' sense of fulfillment of this desire to help others. From a reciprocal deterministic perspective, the orientation toward being of assistance to others might be described as a personal characteristic possessed by an individual who embarks upon a nursing career. Behavior consistent with a desire to help others is certainly expected in the environment in which nursing is practiced. When nurses feel frustrated in their attempts to behave in a manner that is helpful to their patients, it is often because they perceive too many other demands to which they must respond in the practice environment. Such demands may result from inadequate staffing and material resources,

administrative requirements, management styles and other environmental factors which seem to detract from providing a level of patient care which is personally acceptable to a conscientious nurse.

Challenge, which included the components of mental challenge and leadership, was also valued highly in all three groups. Nurses utilize a knowledge base which includes factual and technical information from a variety of disciplines as well as clinical information. Probably one of the greatest mental challenges in nursing practice is making judgments based upon integration of clinical findings with this knowledge base. Nurses use leadership abilities in several ways. Nurses supervise other health care workers, participate in numerous professional organizations and lend their expertise to health related concerns of the communities in which they live. More significantly, the daily practice of nursing requires assertiveness to identify and activate the human and agency resources needed to assist patients to meet their health care needs. Nurses also are routinely expected to take "charge" of patient care units and "teams" of their peers. It is possible that the affiliation of all subjects with a university contributed to their placing a relatively high value on challenge. The university environment could be expected to support behavior stimulated by a person's desire to be challenged.

For all three groups, external reward and aesthetics were found to have the lowest relative priorities among the work values examined. The external reward variable consisted of a combination of affiliation with co-workers, job security and respect by others. Because rapport with colleagues is important for accomplishment of many patient care and organizational tasks, external reward might be expected to be of higher relative priority. The items comprising this work value however, were stated in a way more oriented toward friendship than productive working together. The work values which were composed of items related to independence and creativity as well as the basic requirements of physical environment and financial compensation for work were viewed as more important than

external reward. Aesthetics was of least importance to all groups. Aesthetic concerns (related to the patients' hygiene, cleanliness, neatness and efficient organization of the patients' immediate surroundings and the nursing unit in general and performance of nursing skills in such as way that patients , their families and visitors and other people in the vicinity are not subjected to unpleasant or embarrassing sights, sounds and odors) are a part of the practice of nursing. The way in which the items which composed the work value, aesthetics, were stated did not relate as directly to nursing practice as they did to the work of an artist or designer. Nevertheless, the low priority is probably an accurate reflection of the fact that there are more compelling concerns in patient care than aesthetics although some other need (such as protecting the patient's self-esteem or controlling the spread of infection) may also be met by measures which serve aesthetic purposes.

There were similarities across the three groups in perceptions of the professional interpersonal environment. The "person I would most like to work with" was viewed in each group as being very closely related to another positively viewed person, although the relationship was not with the same person in all groups. This finding supports the importance in nursing of good working relationships. In all groups, positive persons were seen as being more similar to one another than negative persons were similar to one another. This would seem to indicate that the positive poles of the characteristics provided as constructs on the Grid described successful nurses and nurses who would be desirable co-workers and role models better than the negative poles of those characteristics described unsuccessful nurses and nurses who would not be desirable co-workers and role models. It is possible that: the subjects had a clearer concept of what characteristics are associated with positive persons than with the negative persons; that the persons used by subjects to represent the negative role descriptions were given negative appraisals related to one or two characteristics in each case (that situation would not be reflected in the cluster analysis which considers all the

characteristics together); or that characteristics other than those provided as constructs (or as the poles of constructs) were the common factors in the negative appraisals.

Ways in which faculty differed from role models and students seem consistent with the independence and critical thinking which are characteristic of the academic setting. Faculty appeared to be more independent than the other groups in their high valuation of internal reward, low valuation of external reward and greater perceived distance (as compared with role models) between themselves and their immediate supervisors. A greater tendency toward critical thinking on the part of faculty is supported by the larger number of characteristics which were salient in discriminating among the persons implied by the role descriptions (faculty used two more constructs than role models: power and eager to learn, and one more than students: power; faculty construct patterns also showed more discrete groupings: four clusters at the step at which students patterns contained two clusters and role models contained only one). Faculty patterns did not show the interpersonal and clinical groupings as did the role model and student patterns. Clinical expertise, realistic approach and cooperativeness were less significant for faculty than for the other two groups, in part because faculty used more characteristics to discriminate among the persons implied by the role descriptions. It is possible that faculty appeared to be more discriminating because they approached the task of completing the Repertory Grid in a more thoughtful manner, due to advanced education and evaluation experience. The lower priority placed on physical environment may be related to the faculty's mobility in terms of surroundings: each faculty member supervised and taught students on more than one clinical unit and divided her office, class and seminar hours between two school of nursing locations: one at the medical center and one at another campus of the university. From the reciprocal deterministic perspective, the differentiating characteristics of faculty might be interpreted as arising from the reciprocal interaction of: personal orientation of individuals toward independence and critical thinking; behavior produced consistent with this orientation, and the academic environment in which

these individuals choose to continue their employment (and in which the orientation toward independence and critical thinking is supported). Faculty might have been expected to find the characteristic "enjoys helping others learn" to be of more importance in discriminating among the persons implied by the role descriptions. Had the persons whom they rated been faculty colleagues or other persons having educational roles, "enjoys helping others learn" would probably have been more salient. However, in the data obtained, faculty could have been rating nurses having primary roles other than teaching.

Role models and students were very much alike in using a combination of interpersonal constructs and a combination of professional constructs to discriminate among the persons implied by the role descriptions and in viewing clinical expertise and efficiency as very closely related. Ways in which students and role models differed included a higher priority for economic return among role models and the closer relationship, for role models, among self-directedness, efficiency and clinical expertise, and less salience of "eager to learn" among role models. Students were like faculty in viewing eagerness to learn and self-direction as closely related and in viewing the successful senior student nurse as more closely related to the other positively oriented persons implied by the role descriptions. Students differed from both role models and faculty in: viewing themselves as more distant from other positively oriented persons implied by the role descriptions; viewing themselves as most closely related to the successful senior student nurse; viewing themselves as less similar to the "person I would most like to work with;" viewing the "person I would rather not work with" as less similar to the other negatively oriented persons implied by the role descriptions; making fewer discriminations among positively oriented persons, and in placing higher relative priority upon physical environment. Differences between students and the other two groups may be related to lesser working experience on the part of students: fewer discriminations among positively oriented persons, greater distance of self from positively oriented persons and the use of the "person I would most like to (or would rather not) work with." The relatively

higher priority of physical environment for students might be related to their lesser familiarity with their clinical surroundings as compared with faculty and role models. Ways in which students were more like faculty seem to be a reflection of their student role.

These findings relate to reciprocal determinism in several ways. The similarity between students and role models is probably a reflection of the students' learning and socialization during their previous two years of clinical experience and their anticipated movement into the role of staff nurse. (i.e., the students may have chosen a work environment in which the personal development and nursing behaviors which they have acquired will be supported). Although the students were beginning their transition from student to staff nurse, they were still under the evaluative control of the faculty and therefore, the student role was relevant to them and the relationship between eagerness to learn and self-direction was viewed similarly by students and faculty. Faculty took the position that eagerness to learn and self-direction were important to the success of the student in the learning by role modeling experience (according to pilot study results) and may have impressed this upon students during the first week of the experience (after which data collection took place). The higher relative priority placed upon economic return by role models is probably related to the fact that of the three groups, their earning potential was greatest and they may have selected their work environment based in part upon the personal priority given to economic return. Ways in which faculty and role models were alike, seemingly due to work experience, can be addressed within the context of a reciprocal deterministic perspective by asserting that even though the work environments of the two groups are not the same, the experience of working with others may be a common and significant element in both work environments. Working with others may make an individual more aware of interpersonal factors in the work environment and accordingly, influence the perceptions and behavior of the individual in the work setting.

Question #2: What changes occur in nursing students' work values and perceptions of the professional interpersonal environment over the duration of an experience in learning by role modeling?

Changes which occurred in students over the duration of the experience in learning by role modeling were not dramatic for the student group as a whole. This is partially due to the short duration of the experience (approximately one month) and partially by design. Since this study was designed to measure learning by role modeling and relate the extent of learning to selected parameters, it was important to use measurement scales which would assess variability in the student group as a whole. Measures of achievement of the objectives of the course in which the experience occurred were not suitable because faculty reported a history of little variability in course grades and because the achievement of the objectives depended upon use of resources other than the staff nurse role model including faculty input and feedback, classes and seminars and instructional materials. The measures used, work values and perceptions of the interpersonal environment, were selected because it appeared that these work values and perceptions might be susceptible to the influence of an assigned role model. Individuals (both students and role models) could be expected to vary with respect to these work values and perceptions because individual priorities and discriminations were measured. The variability within the student group on these measures (particularly on the Repertory Grid) and variability in the magnitude of change in individual students (some did not change at all, whereas some changed considerably) contributed to the result of little overall change when considering the student group as a whole.

In the student group, there was no change in the relative priority of enhancement of others (highest priority), external reward and aesthetics (second to lowest and lowest, respectively). The priority of these work values might be a reflection of "nursing work values" as discussed in relation to Question #1 (to the extent that these subjects represent the nursing profession in general).

Changes which occurred in the students seem to be related to "on-the-job" experience obtained by the students during this time period. As compared with student results at the onset of the experience, results at the conclusion indicated that: the relative priority of challenge and economic return increased; the "person I would most like to (or would rather not) work with" became more clearly defined for students; students saw themselves as more like their role models and more like the person with whom they would most like to work; the interpersonal grouping of constructs became more salient than the professional grouping in discriminating among the persons implied by the role descriptions; the concept of professional increased in breadth (i.e., the professional grouping of constructs included more constructs) and included leadership, which had been a part of the interpersonal grouping, and power became more salient. Other changes included a lower priority for physical environment, perhaps because the students were more familiar with their surroundings and probably found them generally adequate. Students perceived the successful and the unsuccessful senior student nurse to be less salient at the conclusion of the experience, probably related to their transition from the student culture to the work culture and maturation, as well as the increased salience of the desirable (or undesirable) co-worker.

From the reciprocal deterministic perspective, these changes might be described as arising out of the reciprocal interaction of: the student's desire and readiness to move from the student role to the professional role (personal factors); the student's performance of the staff nurse role to the fullest extent in her career to date (behavior), and the environmental factors of the demands, values and consequences found on the clinical nursing unit, including the direct input and example offered by the role model.

Question #3: What are the relationships among changes which occur in a nursing student over the duration of an experience in learning by role modeling and the work values and perceptions of the interpersonal environment held by the student's staff nurse role model?

Question #3 was the first of the research questions to directly address role modeling. From the reciprocal deterministic perspective, the intent was to focus upon the learning by role modeling situation as an environment which itself contains personal factors associated with the role model, the behavior of the role model and the non-person environmental factors contained in the clinical nursing unit and patient care setting. Measurement of work values and perceptions of the role model was an attempt to isolate some of the personal factors associated with the role model.

Most of the change in the students was toward greater similarity to the role models, although in some respects students became more like both role models and faculty (which might be interpreted as "professional maturation") and in some respects students became more like faculty. Many of the ways in which students became more similar to their role models were of an interpersonal nature. The grouping of constructs into interpersonal and professional concepts remained in student construct patterns at the conclusion of the experience. The interpersonal concept became of greater salience, which is unlike faculty (although faculty construct patterns did not show the interpersonal and professional groupings, the interpersonal constructs were less salient for faculty). Balance between personal and professional life and patience were more salient for students at the conclusion of the experience and the majority of students became more like their role models in perception of supportiveness. The majority of students also became more similar to their role models in valuation of external reward, which was composed of interpersonal affiliation and security concerns. At the conclusion of the experience, students placed a lower relative priority upon internal reward. It is likely that the student-role model relationship was influential in producing these changes of an interpersonal nature. Pilot study results had indicated that participants in the learning by role modeling experience viewed growth in communication with

colleagues as being an important outcome of the experience and the opportunity for the student to have a single human resource with whom to consult as being an important feature of the course in which the experience took place.

There were also increased similarities in perceptions related to the professional concept between role models and students at the conclusion of the experience. At the conclusion of the experience, leadership was less salient for the students, and was more closely related to the professional concept. (Leadership was a part of the interpersonal concept at the onset.) Self-directedness became a part of the professional concept. Realistic approach became more salient and most students became more like their role models in perception of realistic approach, comprehensive individualized patient care, and the "RN I would like to be like." Students viewed themselves as more similar to their role models, which was an increased similarity to the way in which role models perceived themselves in relation to their immediate supervisors. The students perceived the student role as more distant from the other role descriptions provided on the Grid. Students viewed the person with whom they would rather not work as more similar to the RN they hoped never to be like. (For faculty the "RN I hope I am never like" and the "least successful senior nursing student" were seen as more similar to one another.) The student's experience of working closely with the role model undoubtedly contributed to these changes, particularly the increased definition of the "person I would most like to work with" and the perception of comprehensive individualized patient care and realistic approach.

Ways in which students became more similar to both role models and faculty included: a lower absolute value for enhancement of others (though this work value still remained number one priority, again a similarity to both faculty and role models); higher relative priority of challenge and economic return; lower valuation of physical environment; continued lowest priorities for the work values external reward and aesthetics (respectively), and perception of "myself" as more similar to the "person I would most like to work with" and other positively

oriented persons. These changes would seem to be related to the students' on-the-job experience in their chosen profession, which included adopting some of the values and perspectives of the profession.

Students became more like faculty in the increased salience of power, the use of a broader conceptual system (i.e., increased number of salient constructs); increased similarity in the particular constructs which were important, and the decreased importance of clinical expertise. The increased salience of power was probably influenced by at least three power-related experiences over the duration of the clinical assignment. As students, and relative newcomers to their units they were not in positions of particular power, on the other hand they were probably experiencing for the first time an increased responsibility for decision making and use of clinical judgment . In addition, one of the discussion themes for seminars with faculty was the impact which a nurse (or nursing) can have upon the health care system for the benefit of patient care. The broader conceptual system is probably a reflection of broader exposure which the student experienced during this time. Students functioned as members of the work culture and the academic culture, which is a situation similar to the clinical faculty role. The decreased salience of clinical expertise may be related to the probable expectation of the students at the onset that this experience would be an unprecedented opportunity to refine clinical skills (since it was the greatest concentration of clinical hours in the curriculum). It is likely that this was a high priority for these students, as it is for most graduating students and new graduates, and on that basis clinical expertise was a major factor in discriminating positively and negatively oriented nursing roles at the onset of the experience. During the learning by role modeling experience, students probably had greater exposure to interpersonal dealings with others than opportunity to evaluate the clinical skills of others. As their own clinical skills developed through practice they probably felt more secure with their potential for clinical expertise and less focused upon clinical skills. Faculty usually promote this movement away from preoccupation with clinical skills by reassuring

students that skill performance improves with practice and feedback and encouraging students to give increasing attention to other aspects of clinical expertise such as clinical judgment and assertive advocacy for the patient. When discriminating among the persons implied by the role descriptions at the conclusion of the experience, interpersonal constructs had therefore become more salient for students. It is likely that students' definition of clinical expertise focuses more upon skill performance than other dimensions of expertise, even at the conclusion of the experience, although the concept of professional had become broader for students at the conclusion of the experience.

There were other changes in students over the duration of the experience which could not be categorized as like either faculty or role models or as like both faculty and role models. Students became less like both faculty and role models in the decreased salience of efficiency and less like role models in the dissolution of the relationship between clinical expertise and efficiency. Eagerness to learn decreased in salience which was in the direction of greater similarity toward role models for whom eagerness to learn was not among the most salient constructs, however the salience of eagerness to learn, though decreased, was similar to the faculty perception of the construct. Eagerness to learn became a part of the professional concept. (At the onset it was related to self-direction, as it was for faculty, and the eagerness to learn - self-directed combination was not a part of either the interpersonal or the professional concept.) These changes are probably related to what appears to have been the greater impact upon the students of interpersonal, as compared with the professional, forces during this time period. It also appears that students may have been reorganizing their concept of professional during this time, which might be expected during a transitional time between role of student and role of nurse.

Question #4: Are there relationships among changes occurring in nursing students over the duration of an experience in learning by role modeling and: student's self-appraisal; student's appraisal of her staff nurse role model; perceived interpersonal styles of the student and of her staff nurse role model; perceived autonomy of the student and of her staff nurse role model?

Before addressing the relationship among changes in the student over the duration of the experience and each of the parameters studied, some general observations concerning Question #4 should be made. The intent in studying this question was to demonstrate parallels between the student-role model relationship in the learning by role modeling situation and the client-therapist relationship in the psychotherapy situation. There are at least two possible reasons why the results in relation to Question #4 did not produce supportive evidence. The present investigation was not designed to focus upon the intended outcomes of the learning by role modeling experience, although some of the objectives of the course in which the experience took place were implicit in the measurement. Instead, the focus was upon the work values and professional interpersonal perceptions of the participants in the experience with a more general overall psychological approach. In that sense, it might have been more appropriate to study the relationship between student change toward greater similarity to the role model and parameters associated with transference in psychotherapy, rather than parameters associated with success in psychotherapy (achievement of the goals of therapy). It might have been appropriate to study the relationship of the parameters with some measure of achievement of the goals of the course of which the learning by role modeling experience was a part. A second possible explanation for these results lies in the construction of the variables used in the analysis related to Question #4. It might have been more appropriate to measure these variables with established instruments, or to experiment further with the constructions used in the present investigation. From a statistical standpoint, the differences in the distribution of the variables probably contributed to the lack of significant Spearman correlation. The standard deviation

of the change variable (66.9) and self-appraisal (76.3) were more comparable than the standard deviations of the other variables (student appraisal of role model, 26.4; interpersonal style, 11.9; autonomy, 6.8) and the only significant Spearman correlation of the change variable was with self-appraisal. Nevertheless, the findings related to students' interpersonal development over the duration of the experience (as discussed in Question #3) and the pilot study finding indicating that participants in the experience stress the importance of a single human resource for the student seem to support to Strupp's (1986) notion of the importance of the interpersonal context and the role of therapist in the relationship with the client. Considering the great number of work values, elements and constructs included in this investigation and the lack of strong significant correlations between the change variable and the parameters, it is likely that at least some of the findings reported and discussed in relation to the parameters are spurious. Some possible interpretations are offered below for changes in work values and perceptions of the professional interpersonal environment which appeared to be related to student's self appraisal, student's appraisal of her staff nurse role model, interpersonal style and autonomy. However, it should be pointed out that the findings are not sufficiently conclusive to warrant consideration without further study.

Student's self-appraisal

As mentioned previously, a moderate correlation (Spearman's rho = -0.48) was found between student's self-appraisal and change in the student toward greater similarity to her role model. This implies that students who had a more positive view of themselves were less likely to become more similar to their role models in work values and professional interpersonal perceptions, whereas the work values and perceptions of the student having a less favorable view of self were more susceptible to influence of the role model. This finding is consistent with Bandura's (1977b) findings regarding individuals most susceptible to the influence of a model. The specific ways in which the student having lower self-appraisal became more like

the role model included: valuation of internal reward and economic return, perception of balance between personal and professional life, self-confidence and comprehensive individualized patient care. Students having lower self-appraisal also viewed themselves as more similar to their appraisal of their role models at the conclusion of the experience than they had at the onset. Increased similarity between students and role models in perception of enjoyment in helping others learn was found among students having a more positive self-appraisal. Perhaps the student who was less self-assured had a self-concept more permeable to the influence of another, especially in terms of valuing internal reward (composed largely of independence), perceiving self-confidence and viewing self as becoming more similar to that other person. It is possible that the student having a more positive view of self became more similar to the role model in perception of eagerness to help others learn because of the uniqueness of this experience in terms of the sustained intense close working relationship with the role model who, presumably, was trying to help the student learn. The student sufficiently secure in the clinical setting (which is directly reflected in the Student's Self-Appraisal Scale) might turn attention to less familiar aspects of the learning by role modeling experience and be susceptible to influence in forming a perception of eagerness to help another person learn, having not previously been exposed to this type of teacher-learner relationship. Overall, however, the student having a more positive self-appraisal seemed less likely to be influenced by the role model.

Student's appraisal of her staff nurse role model

Although there was not a significant Spearman correlation between the change variable and student's appraisal of her staff nurse role model, students having a more positive appraisal of their role models (more than one standard deviation above the mean) showed change toward greater similarity to their role models in a larger number of work values and perceptions than was the case with any of the other parameters studied in Question #4. At

the conclusion of the experience, students with more positive appraisals of their role models showed greater similarity to their role models in valuation of challenge and in perception of: the least successful student nurse, the person with whom they would most like to work, rapport with others, cooperativeness, realistic approach, clinical expertise, self-direction, eagerness to help others learn, patience and supportiveness. At the conclusion of the experience, students having a more favorable appraisal of their role models also evaluated their role models more similarily to the way in which role models evaluated their immediate supervisors. Bearing in mind that the correlation between the change variable and the student's appraisal of her role model was not significant, that students having a favorable appraisal of their role models became more similar to their role models in many ways and in ways which include salient constructs of both interpersonal and professional concepts as well as the relationship with the immediate supervisor is worthy of note. The student's appraisal of the staff nurse role model probably has some significance in learning by role modeling, despite the lack of a significant relationship produced by the method used in the present investigation.

Perceived interpersonal styles of the student and of her staff nurse role model

While there was no significant correlation between the change variable and interpersonal style, students having higher scores for interpersonal style became more similar to their role models in perception of the successful student nurse. Students scoring lower on interpersonal style became more similar to their role models in valuation of internal reward and in perception of balance between personal and professional life, realistic approach, eagerness to learn, patience and supportiveness. It might be speculated that the student-role model pair having a high score for interpersonal style might have had a relationship characterized by a great deal of feedback and validation, such that the student's definition of successful student nurse might align more closely with the role model's since the purpose of

their relationship might be a focus of their interactions. A possible interpretation of the relationships found between student-role model pairs having lower interpersonal style scores and their increased similarity in valuation of internal reward might be that in pairs where score were low, both individuals had a tendency toward independent functioning which the student developed further during their relationship. The other findings in relation to perceptions do not lend themselves readily to interpretation. Because the results in relation to previous questions support the importance of the interpersonal aspects of both the student-role model relationship and the learning which occurred in that relationship, it should be suspected that interpersonal style is a significant factor in the learning that occurs, regardless of the lack of significant findings produced here.

Perceived autonomy of the student and of her staff nurse role model

No significant correlation was found between change in the student toward greater similarity to her role model and the autonomy variable. In student-role model pairs scoring higher in autonomy, students showed increased similarity to their role models in perception of cooperativeness. In student-role model pairs scoring lower in autonomy, students showed more similarity in valuation of internal reward, economic return, aesthetics and perception of self-direction. In student-role model pairs scoring lower in autonomy, students also tended, at the conclusion of the experience, to view themselves more similarly to the way in which they viewed their role models than they had at the onset of the experience. The finding of increased similarity in perception of cooperativeness among those student-role model pairs having higher autonomy scores could be a result of the student's further refinement of expectations of cooperation in a working relationship of persons who are quite independent. Greater similarity in internal reward, perception of self-direction and student's view of self to her view of role model among those student-role model pairs having lower autonomy scores might be interpreted as the student's susceptibility to influence in areas related to

independence (which was not a particular personal strength). Insofar as there are similarities between the student-role model relationship and the client-therapist relationship, autonomy is probably related to learning in the role modeling situation. The relationship was not demonstrated in the present investigation, in part due to the widely differing distributions of the correlated variables. The lack of a relationship between autonomy and learning by role modeling may also be due to considering the three perspectives on autonomy in the relationship of student and role model rather than concentrating upon the student's perception of own autonomy.

Theoretical and Practical Implications

Reciprocal Determinism

As demonstrated in the discussion of findings related to each of the four research questions, the reciprocal deterministic perspective provides a conceptual framework suitable for interpretation of the findings of the present investigation. It should be noted that the individual components of the reciprocal deterministic paradigm (personal factors, behavior, environment and the reciprocal interaction among them) were not specifically tested in this investigation. A more complete test of the paradigm would require measurement of the numerous behavioral and environmental components and the reciprocal feedback among them. The study reported here focused only on a few personal factors associated with the student, role model and faculty member who were a part of the learning environment of the student. Information about behavior and possible environmental determinants of behavior were added to enrich interpretation and discussion. This information was not collected directly in this investigation but was culled from related literature and from the unstructured observations and the experience of the investigator.

The importance of the reciprocal interactive feedback taking place among personal factors, behavior and the environment is considered to be the major differentiating feature of

the reciprocal determinism paradigm. Recently, the concept of the importance of reciprocal feedback between teacher and learner has received considerable attention in educational psychology literature (Resnick, 1985; Brown and Campione, 1986; Kosulin, 1986). Social interaction between a model and a learner in the form of reciprocal feedback is central to the learner's internalization of cognitive processes which guide expert performance. From Vygotsky's perspective (Kozulin, 1986), the model questions the learner and criticizes learner responses. As the learner gradually gains proficiency, the model takes a progressively less active role until the learner performs competently without the model's guidance (presumably because the learner has incorporated the questioning and criticism of the model and uses it to regulate his or her performance). Interestingly, this reciprocal teaching instructional procedure is already an established practice in nursing education. The student's first clinical experience is closely supervised by a clinical instructor who questions the student extensively about information relevant to the nursing care of the patient to whom the student is assigned (such as disease condition, therapeutic regime, psychosocial considerations, rationale for nursing actions and plans to evaluate patient progress). The student prepares for clinical assignments by studying the patient's medical record and various nursing and medical texts; when preparation is adequate, the student collects a large amount of information, not all of which is highly relevant to the particular clinical situation to which the student is assigned. The systematic questioning and feedback process used by the clinical instructor assists the student in learning which facts are relevant, how they are integrated and how to set patient care priorities. As the student gains clinical expertise, the instructor takes a less active role and provides more advanced questions which tap higher levels of clinical judgment, synthesis and evaluation in nursing care. The students who served as subjects in the investigation reported here had experienced this form of reciprocal teaching in their prior clinical training. During the learning by role modeling experience, faculty members assumed a more consultative role to both students and role models. The role model took the role of

interrogator and critic with the student, making adjustments as she learned (through verbal and behavioral feedback from the student) the strengths and weaknesses of the student. Although feedback between student and role model was not studied directly in this investigation, the findings (greater interpersonal similarities between students and role models at the conclusion of the experience and the students' further development of interpersonal concepts over the duration of the experience) support the relevance and importance of social interaction between role model and student to the learning which occurred during the experience.

Role Modeling

The reciprocal deterministic formulation of the learning by role modeling situation (as presented in Figure 2) focuses upon the personal factors associated with the student and with the role model who is a part of the learning by role modeling environment. This perspective seems to have been appropriate as evidenced by the discussion of findings in relation to Questions #3 and #4 and in the findings which support the importance of the interpersonal relationship and learning which took place over the duration of the experience.

As noted in the discussion of findings related to Question #4, some of the methodological choices (constructing measures from data collected, rather than using established measures of variables such as self-appraisal; choosing not to focus upon the learning outcomes intended for the course in which the learning by role modeling experience took place) made to study parallels between the student-role model relationship and the client-therapist relationship probably led to the lack of supportive evidence produced. Nevertheless, the relationship between low self-appraisal and susceptibility to modeling influences supports Bandura's (1977b) findings. The results of the present investigation indicate the importance of the interpersonal relationship between student and role model and the interpersonal nature of much of the learning which occurred and therefore, if

psychotherapy is broadly defined as an interpersonal context in which therapeutic learning occurs (Strupp, 1986), it is likely the there are parallels between the therapist-client relationship and the role model-student relationship, despite the lack of evidence produced by the approach taken in Question #4. Reciprocal feedback as discussed above is an additional characteristic which the role model-student and therapist client appear to have in common. The interplay of the feedforward process with feedback occuring in the therapist-client relationship (Mahoney, 1982), seems parallel to reciprocal feedback in the learning by role modeling situation.

Repertory Grid Methodology

Results of the investigation produced some validity evidence supporting the use of Repertory Grid technique in studies of the type reported here. In the patterns of all three groups studied, elements were sorted into positively and negatively valenced groupings which were maximally distant from one another. All groups used predominantly midrange values when rating the constructs: problem solving versus rule orientation; realistic versus idealistic; taking responsibility for own actions versus seeing others and circumstances as responsible for actions, emphasis upon comprehensive individualized patient care versus emphasis upon safe care for groups of patients and enjoyment in helping others learn versus dislike of helping others learn. This rating pattern can be interpreted as the subjects' decisions that a midrange value was most desirable or as the insignificance of these constructs (or at least the poles of the constructs provided in the Grid) in discriminating among the elements. The particular constructs rated in this way (particularly problem solving, realistic and comprehensive individualized patient care) seem to indicate that Grid results accurately reflect the thinking of the subjects. Some subjects noted on the Grid that they thought both poles of some constructs were important and other subjects mentioned this point verbally to the investigator. The Role Model Repertory Grid was designed to measure perceptions of the

professional interpersonal environment. The grouping of constructs by students and role models into a professional and an interpersonal concept suggests that the Grid achieved the purpose for which it was intended. Although the number of items contained in an instrument is often associated with its reliability, the completion of the form of the Grid used in the present investigation was a cumbersome and somewhat difficult cognitive task if approached thoughtfully. For that reason, the reliability and validity of data obtained by the Repertory Grid is probably improved by decreasing the number of discriminations required, or by incorporating interview into the use of the Grid rather than requiring the subject to respond to the Grid without assistance.

The use of the Work Values Inventory as well as the Grid permitted a comparison of the standardized questionnaire technique with the Grid technique. The Work Values Inventory analysis allowed the use of tests of statistical significance, however, since no significant differences were found between students and role models or between students at the onset of the experience and students at the conclusion, the approach was not useful in detecting subtle changes in students with respect to their role models. Applying a form of ranking technique to the analysis of work values was not particularly useful either, since the highest and lowest priorities were the same in all groups and in students at both times. The Grid approach, especially when subjects are permitted to generate constructs and elements, allows for greater specificity and is more sensitive to subtle nuances.

The use of the SPSSx CLUSTER procedure to analyze the Grid appears to have been appropriate and to have greatly facilitated a comprehensible presentation of the results. The limitations of the procedure include the inability to analyze Grids individually due to the algorithm used to create the distance matrix and the inability to combine element and construct relationships (which the principal components procedure permits). The first limitation was overcome by computing construct and element distances for individual Grids; the second limitation was accepted in the choice of the CLUSTER procedure, because

cluster analysis produces results which are more easily interpretable (although the data reduction is not as complete) and because since elements and constructs are rated in terms of one another, their relationship to one another is implicit in the results of cluster analysis.

The Grid approach has much to recommend it, particularly where relationships which may not be explicit to the subject are concerned. The technique has been widely used in Britain, where various computer programs for analysis are available. British uses have included many types of evaluation and research in business and training, as well as psychological and psychiatric research. The ability to analyze the Grid with an SPSSx procedure might encourage wider use of the Grid in the United States, for appropriate applications. Certainly nursing has numerous evaluation needs and requirements which might be approached productively with the Grid technique. Some of nursing's evaluation needs include: quality assurance studies; patient classification; evaluation of nursing care products, drugs, treatments and procedures; evaluation of students, peers, subordinates and applicants, and evaluation mandated by agencies which accredit hospitals and other health care settings, schools and continuing education offerings.

Instructional Implications

The purpose of the study reported here was to investigate learning by role modeling rather than compare this method of learning with others. Therefore, evidence to assert the superiority of this method over others was not produced. Results indicate that in a relatively short period of time, students gained perspective on the work situation, that interpersonal discriminations among nurses who were significant to the students increased in importance, and that the concept of professional seemed to undergo some evolution. Although the present investigation does not address the question of whether or not these changes might occur without a specifically assigned staff nurse role model, it appears that these changes were facilitated by the student-role model relationship. Therefore it would seem

advantageous for faculty to promote interpersonal relationships between students and staff nurses on the clinical units even if the assignment of a particular nurse to each student is not feasible.

If advancement from one stage to the next in the progression from novice to expert nurse is facilitated by working closely with a nurse who is only one level above the learner (rather than more advanced), as Benner (1984) suggests, the results of the present study would indicate that at least in the sample studied, staff nurses might facilitate the learning of nursing students in some ways in which faculty could not. Although the present investigation did not address the patient care discriminations which are the core of Benner's work, the similarity of students and role models on the work values and perceptions studied was demonstrated.

Finally, the study reported here suggests that differences exist between nursing faculty and nurses whose primary role is patient care. From the reciprocal deterministic perspective, differences between faculty and staff nurses might be expected due to varying goals and expectations which differentiate their respective work environments, as well as personal factors associated with the individuals who select one environment or the other. The faculty and staff nurses studied were different in work values and perceptions (despite certain similarities which seem characteristic of nurses), although the subjects as a whole were quite homogenous demographically and in their association with a particular university having a clearly defined philosophy. The implication is that it is probably more important to develop productive working relationships between faculty and nursing staff than it is to try to eradicate differences in values and perceptions which seem to persist.

Research Recommendations

The limitations of the present investigation suggest considerations for further research in this area. Maturation of the senior student might be distinguished from learning

by role modeling by including groups of similarly experienced senior nursing students having consistent assignment to the same clinical unit over a period of time equal to the learning by role modeling group, but lacking in the assignment of a particular staff nurse role model for each student. Other nursing education situations in which learning by role modeling is intended (e.g., graduate student-preceptor relationships) might also be included in attempt to isolate the characteristics common to learning by role modeling situations. Other sampling adjustments could be made to test the generalizability of the findings of the present investigation: staff nurses representing different types and sizes of hospitals, other health care agencies and various clinical specialties, and students and faculty members of schools of nursing having different characteristics might be studied.

Data could be collected from students and their role models concerning decision making, priority setting, time management and other areas of expertise in which growth is expected to occur over the duration of the relationship. Information about the relationship between intended learning outcomes and characteristics of the student-role model relationship would be useful in educational settings which make use of learning by role modeling. Because reciprocal feedback seems to be an important ingredient in the student-role model relationship, research findings which describe the process of reciprocal feedback and identify its most important features would be helpful in planning and implementing learning by role modeling experiences.

The relationship of variables such as self-concept and interpersonal style with learning by role modeling might be studied using tested and established measures of these variables. Data collected for the purposes of the present investigation could be used to test relationships between learning by role modeling and some of the specific characteristics of students and role models (both self-perceptions and student perceptions of role models) which were used as constructs in the Grid (such as patience and eagerness to learn).

The reciprocal determinism paradigm and the Repertory Grid methodology might be employed in the study of role modeling outside of the formal education setting. As previously stated, full exploration of the reciprocal deterministic perspective should measure behavior and non-person environmental factors. Factors which influence learning by role modeling in society in a more general sense would be of interest to counselors and minority leaders who are concerned about enhancing the effectiveness of positive role models and limiting the influence of negative role models.

Several possible applications of Repertory Grid methodology were mentioned in the previous section. In addition, the Grid technique might be suited to extensions of Benner's (1984) research program in an attempt to make explicit the features of personal knowledge and the clinical situation which enter into the dynamic transaction which she identifies as expert nursing practice. That information would be valuable to nurse educators in graduate and specialty programs whose objectives include the preparation of the expert practitioner.

CHAPTER VI

SUMMARY

Learning by role modeling was studied in a clinical nursing course offered by a university school of nursing at a university medical center. Subjects were nursing students (n=48), nursing faculty (n=11) and staff nurse role models (n=36) who were participating in the course. Literature related to: social learning theory and reciprocal determinism; modeling and role modeling; parallels between the psychotherapist-client relationship and the role model-student relationship; mentorship and preceptorship, and the nursing profession was selectively reviewed. Work values (measured by the Work Values Inventory [Super, 1970]) and perceptions of the professional interpersonal environment (measured by a specially crafted Role Model Repertory Grid) were examined across subjects. Results identified numerous differences among the three groups. Students and role models were more similar to one another than either group was similar to faculty. Faculty appeared to be more oriented toward independence and critical thinking than students and role models. Students and role models appeared to use professional and interpersonal concepts to discriminate among significant persons in their professional environment. All groups placed high relative priority upon enhancement of others and challenge and low relative priority upon external reward and aesthetics. Over the duration of the learning by role modeling experience, students appeared to: view themselves as more distant from the student role and more similar to their role models and persons with whom they would like to work; develop a clearer definition of desirable and undesirable characteristics of co-workers; broaden their professional concept; find the interpersonal concept to be more salient than the professional concept in

discriminating among significant persons in the professional environment. Over the duration of the experience, most of the changes in the students were toward greater similarity to their role models. Some changes (interpreted as professional maturation) were also toward greater similarity to faculty. Most increased similarities between role models and students at the conclusion were of an interpersonal nature, though some increased similarities in the professional concept were also noted. A moderate negative relationship (Spearman correlation) was found among changes in the students toward greater similarity to the role model and student self-appraisal. Changes in the students toward greater similarity to the role model were not significantly related to: student appraisal of the role model; perceived interpersonal styles of the student and role model, or perceived autonomy of the student and role model.

Findings were discussed within the theoretical context of social learning theory and reciprocal teaching where emphasis is given to the importance of social interaction in the student-role model relationship. Evidence was presented to support the use of Repertory Grid methodology and cluster analysis in studies of this type. Instructional implications of the study included procedures for enhancing the efficiency of the learning situation studied in contributing to gains in student perspective of the actual work situation and support for encouraging interpersonal interaction between students and staff nurses in the clinical setting. Research recommendations included procedures to improve the generalizability of the findings and further exploration of studies designed to describe the specific nature of the reciprocal teaching process. Finally, of utmost importance in future research are studies designed to focus upon the modifiable components included within the social learning model, with special consideration given to and controlling for the individual difference characteristics of both students and role models.

REFERENCES

Achenbach, Thomas M. (1978) Research in Developmental Psychology: concepts, strategies and methods, New York: The Free Press.

Archer, Sarah E. and Ruth Fleshman. (1981) Faculty role modeling. Nursing Outlook, 29, 586-589.

Atwood, Aileen. (1979) The mentor in clinical practice. Nursing Outlook, 27, 714-717.

Backenstose, A. G. (1983) The use of clinical preceptors. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education. Rockville, Maryland: Aspen Systems Corporation, 9-23.

Bandura, Albert. (1969) Social-learning theory of identificatory processes. In D. A. Goslin (Ed.) Handbook of Socialization Theory and Research. Chicago: Rand McNally.

_____. (1977a) Self-efficacy: towards a unifying theory of behavioral change. Psychological Review, 84, 191-215.

_____. (1977b) Analysis of modeling processes. In Albert Bandura Social Learning Theory Englewood Cliffs, New Jersey: Prentice-Hall, 1-62.

_____. (1978) The self-system in reciprocal determinism. American Psychologist, 33, 344-358.

_____. (1983) Temporal dynamics and decomposition of reciprocal determinism: a reply to Phillips and Orton. Psychological Review, 90, 166-170.

_____, Dorothea Ross and Sheila A. Ross. (1963) A comparative test of the status envy, social power and secondary reinforcement theories of identificatory learning. Journal of Abnormal and Social Psychology, 67, 527-534.

_____, Joan E. Grusec and Frances L. Menlove. (1966) Observational learning as a function of symbolization and incentive set. Child Development, 37, 499-506.

_____, and Frederick J. McDonald. (1968) Influence of social reinforcement and the behavior of models in shaping children's moral judgments. Journal of Personality and Social Psychology, 67, 274-281.

_____, and Robert W. Jeffrey. (1973) Role of symbolic coding and rehearsal processes in observational learning. Journal of Personality and Social Psychology, 26, 122-130.

Beail, Nigel (Ed.) (1985) Repertory Grid Technique and Personal Constructs: applications in clinical and educational settings. Cambridge, Mass.: Brookline Books.

Benner, Patricia. (1984) From Novice to Expert: excellence and power in clinical nursing practice. Menlo Park, California: Addison-Wesley Publishing Co.

Bergeron, C. T. (1983) What precepting is. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education. Rockville, Maryland: Aspen Systems Corporation, 89-95.

Boyer, Catherine M. (1981) Performance-based staff development: the cost-effective alternative. Nurse Educator, 6, 12-15.

Braito, Rita and Richard Caston. (1983) Factors influencing job satisfaction in nursing practice. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak. New York: McGraw-Hill, 346-382.

Brown, Ann L. and Campione, Joseph C. (1986) Psychological theory and the study of learning disabilities. American Psychologist, 4, 1059-1068.

Cason, Carolyn and Cornelia M. Beck. (1982) Clinical nurse specialist role development. Nursing and Health Care, 3, 25-26, 35-38.

Chalmers, Douglas and Milton E. Rosenbaum. (1974) Learning by observing versus learning by doing. Journal of Educational Psychology, 66, 216-224.

Chaska, Norma. (1983) Winter of discontent and invincible springs. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak. New York: McGraw-Hill, 871-889.

Chickerella, B. G. and W. J. Lutz. (1981) Professional nurturance: preceptorships for undergraduate nursing students. American Journal of Nursing, 81, 107-109.

Clark, M. D. (1981) Staff nurses as clinical teachers. American Journal of Nursing, 81, 314-318.

Conway, Mary E. (1978) Theoretical approaches to the study of roles. In Margaret E. Hardy and Mary E. Conway (Eds.) Role Theory: Perspectives for Health Professionals. New York: Appleton-Century-Crofts, 17-27.

Dalme, F. C. (1983) Nursing students and the development of professional identity. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak. New York: McGraw-Hill, 134-145.

Dolan, Kathleen. (1984) Building bridges between education and practice. In Patricia Benner From Novice to Expert: excellence and power in clinical nursing practice. Menlo Park, California: Addison-Wesley Publishing Co., 275-283.

Douville, L. D. (1983) Positive aspects of working with a preceptor. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education. Rockville, Maryland: Aspen Systems Corporation, 121-126.

Dye-White, Elaine Elizabeth. (1983) How to design a course based on a preceptor experience. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education. Rockville, Maryland: Aspen Systems Corporation, 33-37.

Eastman, C. and J. S. Marzillier. (1984) Theoretical and methodological difficulties in Bandura's self-efficacy theory. Cognitive Therapy and Research, 8, 213-229.

Erickson, H., E. M. Tomlin and M. A. P. Swain. (1983) Modeling and Role-Modeling: A Theory and Paradigm for Nursing. Englewood Cliffs, New Jersey: Prentice-Hall.

Fagan, M. Michael and Patricia D. Fagan. (1983) Mentoring among nurses. Nursing and Health Care, 4, 77-82.

Frank, Jerome D. (1982) Therapeutic components shared by all psychotherapies. In John H. Harvey and Marjorie M. Parks (Eds.) The Master Lecture Series, Volume I, Psychotherapy Research and Behavior Change . Washington, D.C.: APA, 5-37.

Fransella, Fay. (1977) Personal Construct Psychology . London: Academic Press.

_____ and Bannister, Don. (1977) A Manual for Repertory Grid Technique . London: Academic Press.

Gendlin, Eugene T. (1986) What comes after traditional psychotherapy research? American Psychologist , 41 , 131-136.

Glass, Elaine C. and Debbie Coleman. (1983) The clinical specialist as graduate student preceptor. Momentum, Newsletter of the Council of Clinical Nurse Specialists of the American Nurses' Association , Fall, 3, 5, 8.

Greenberg, Eleanor. (1978) Psychological determinants of points of view of the American Zionist with regard to Aliyah. (M.A. Thesis, Loyola University of Chicago).

Haberlin, Jean M. (1983) How to orient a new preceptor. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 49-59.

Hall, William M. and Robert B. Cairns. (1984) Aggressive behavior in children: an outcome of modeling or social reciprocity? Developmental Psychology , 20 , 739-745.

Henneman, Jane. (1983) The needs of a new preceptor. In Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation , 97-101.

Hurley, B. A. (1978) Socialization for roles. In Margaret E. Hardy and Mary E. Conway (Eds.) Role Theory: Perspectives for Health Professionals. New York: Appleton-Century-Crofts, 29-71.

Imber, Stanley D., Glanz, Lawrence M., Elkin, Irene, Sotsky, Stuart M., Boyer, Jenny L., Leber, William R. (1986) Ethical issues in psychotherapy research: problems in a collaborative clinical trial study. American Psychologist , 41 , 137-146.

Kelly, George A. (1955) The Psychology of Personal Constructs , Volume I, A Theory of Personality New York: W. W. Norton and Company.

Kozulin, Alex. (1986) The concept of acitvity in soviet psychology: Vygotsky, his disciples and critics. American Psychologist, 41, 264-274.

Kramer, Marlene. (1974) Reality Shock: Why Nurses Leave Nursing . St. Louis: C. V. Mosby.

_____ and Claudia Schmalenberg. (1977) Path To Biculturalism . Wakefield, Massachusetts: Contemporary Publishing.

_____, C. McDonnell and J. Reed. (1972) Self-actualization and role adaptation of baccalaureate degree nurses. Nursing Research , 21 , 111-122.

Lum, J. L. J. (1978) Reference groups and professional socialization. In Margaret E. Hardy and Mary E. Conway (Eds.) Role Theory: Perspectives for Health Professionals . New York: Appleton-Century-Crofts, 137-156.

MacPhail, Jannetta. (1983) Collaboration/unification models for nursing education and nursing service. In Norma Chaska, (Ed.) The Nursing Profession a Time to Speak . New York: McGraw-Hill, 216-224.

Maes, Jeannie B. (1983) The challenge of being a preceptor. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 103-111.

Mahoney, Michael J. (1982) Psychotherapy and human change processes. In John H. Harvey and Marjorie M. Parks (Eds.) The Master Lecture Series, Volume I. Psychotherapy Research and Behavior Change . Washington, D.C.: APA, 77-122.

May, L. (1980) Clinical preceptors for new nurses. American Journal of Nursing , 80 , 1824-1826.

Mayer, G. G. (1983) The clinical nurse researcher: role-taking and role-making. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak . New York: McGraw-Hill, 216-224.

Meyer, V. Y. (1983) How to be comfortable with students doing clinical work with a preceptor. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 71-79.

Murphy, Mary Lou and Susan M. Hammerstad. (1981) Preparing a staff nurse for precepting. Nurse Educator , 6 , 17-20.

Nie, Norman H., et. al. (1983) SPSSx User's Guide . New York: McGraw-Hill Book Company.

Norušis, Marija J. (1983) SPSSx Introductory Statistics Guide . New York: McGraw-Hill Book Co.

_____. (1985) SPSSx Advanced Statistics Guide . New York: McGraw-Hill Book Co.

Novak, Sylvia. (1983) The need for faculty-preceptor workshops. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education. Rockville, Maryland: Aspen Systems Corporation, 201-210.

Peterson, Carol J. W. (1983) Overview of issues in nursing education. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak . New York: McGraw-Hill, 91-100.

Phillips, D.C. and Rob Orton. (1983) The new causal principle of cognitive learning theory: perspectives on Bandura's "reciprocal determinism." Psychological Review , 90 , 158-165.

Pinch, Winifred J. (1981) Feminine attributes in a masculine world. Nursing Outlook , 29 , 596-599.

Platt, David. (1981) A repertory grid investigation of the development of self definition and identity status in adolescence. (Doctoral Dissertation, Loyola University of Chicago).

Pope, Maureen. (1977) Monitoring and reflecting in teacher training. In Fay Fransella (Ed.) Personal Construct Psychology . London: Academic Press, 75-86.

Quint, Jeanne C. (1967) Role models and the professional nurse identity. Journal of Nursing Education, 6 , 11-16.

Resnick, Lauren. (1985) Cognition and instruction: recent theories of human competence. In Barbara L. Hammonds (Ed.) Psychology and Learning. Washington, D.C.: American Psychological Association, 123-186.

Rowe, Diane. (1983) Evaluation in preceptorship programs. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 175-190.

Ryle, Anthony. (1975) Frames and Cages . New York: International Universities Press, Inc.

Schmalenberg, C. and M. Kramer. (1979) Coping With Reality Shock: the Voices of Experience . Wakefield, Massachusetts: Nursing Resources, Inc.

Schorr, Thelma. (1978) The lost art of mentorship. American Journal of Nursing , 78 , 1873.

Schubert, Phyllis. (1983) Preceptor seminars and their use in the nursing education program. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 191-200.

Severance, Laurence and Abby Gottsegen. (1977) Modeling influences on the achievement of college men and women. (Paper presented at APA meetings, San Francisco, August 29, 1977.)

Shaw, Mildred L.G. (1977) Interactive computer programs for eliciting models of the world. In Fay Fransella (Ed.) Personal Construct Psychology . London: Academic Press, 59-67.

Sills, Grayce. (1983) The role and function of the clinical nurse specialist. In Normal Chaska (Ed.) The Nursing Profession a Time to Speak. New York: McGraw-Hill, 563-579.

Slater, Patrick (Ed.) (1976) The Measurement of Intrapersonal Space by Grid Technique vol. I. Explorations of Intrapersonal Space . London: John Wiley & Sons.

Smith, Kathryn M. (1965) Discrepancies in the role-specific values of head nurses and nurse educators. Nurse Educator , 14 , 196-202.

Smith, Kenneth. (1978) Male teachers in early childhood: a personal construct investigation of sex-role perceptions. (Doctoral Dissertation, Loyola University of Chicago).

SSPS Inc. (1986) SSPSx User's Guide, 2nd ed. Chicago, IL: SSPS Inc.

Stewart, Valerie, Stewart, Andrew and Fonda, Nickie. (1981) Business Applications of Repertory Grid . London: McGraw-Hill Book Company (UK) Ltd.

Strupp, Hans H. (1986) Research, practice and public policy (how to avoid dead ends). American Psychologist , 41 , 120-130.

Stuart-Sidall, Sandra. (1983) How to select preceptors. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education , Rockville, Maryland: Aspen Systems Corporation, 25-31.

Stuart-Sidall, Sandra and Jean M. Haberlin (Eds.) (1983) Preceptorships in Nursing Education, Rockville, Maryland: Aspen Systems Corporation.

Styles, Margaretta. (1982) On Nursing: Toward a New Endowment . St. Louis: C.V. Mosby Co.

Super, Donald. (1970) Manual Work Values Inventory . Boston: Houghton Mifflin Company.

Teevan, Katherine Grady and Harris Gabel. (1978) Evaluation of modeling, role-playing and lecture-discussion training techniques for college student mental health paraprofessionals. Journal Counseling Psychology , 25 , 169-171.

Tumminia, Patricia. (1981) Teaching problems and strategies with male nursing students. Nurse Educator , 6, 9-11.

Turnbull, Ellie. (1983) Rewards in nursing: the case of nurse preceptors. The Journal of Nursing Administration , 13 , 10-13.

Vance, C.N. (1982) The mentor connection. Journal of Nursing Administration , 12 , 7-13.

Votroubek, Wendy. (1983) How to gain maximum advantage from the preceptor clinical experience. In Sandra Stuart-Sidall and Jean M. Haberlin (Eds.) Preceptorships in Nursing Education . Rockville, Maryland: Aspen Systems Corporation, 133-138.

Wager, Walter. (1979) Instructional design and attitude learning. Educational Technology , 51-53.

Walters, Clara Rae. (1981) Using staff preceptors in a senior experience, Nursing Outlook , 29, 245-247.

Werley, Harriet H. and Joan B. Newcomb. (1983) The research mentor: a missing element in nursing?. In Norma Chaska (Ed.) The Nursing Profession a Time to Speak . New York: McGraw-Hill, 202-215.

Williams, Martha. (1982) Educational strategies for learning to learn from role models. (Paper presented at APA Convention, Washington, D.C., August 23, 1982.)

Wolf, Zane Robinson. (1982) Mentorship in nursing - a path to self-directed learning. Topics in Clinical Nursing, 4, 68-74.

APPENDIX A

SCHOOL OF NURSING

COURSE NUMBER: N381 (4 cr. hrs.) - 1986
COURSE TITLE: CLINICAL ROLE TRANSITION
PLACEMENT IN CURRICULUM: SPRING SEMESTER SENIOR YEAR
PREREQUISITE: SUCCESSFUL COMPLETION OF NURSING CORE

DATES: Theory - March 10 - April 25, 1986 (7 weeks)
Clinical - March 17 - April 18, 1986 (5 weeks)
Easter Holidays - March 27-31, 1986 (Thursday 4:30 p.m. - Monday 4:30 p.m.)

CATALOG DESCRIPTION: This course is designed to assist the student in the process of socialization into professional nursing. Seminars and clinical opportunities in various settings provide an opportunity for an integrative experience. Emphasis on leadership and management promote the transition from the student role to that of the professional nursing practitioner.

COURSE OBJECTIVES:

Upon completion of this course the student will be able to:

Cognitive

1. Synthesize the concepts of the curriculum in nursing practice.
2. Integrate one's own philosophy of nursing with the philosophy of the School of Nursing and the clinical agency in delivering nursing care.
3. Discuss the relevance of the School of Nursing's conceptual framework to the "human condition" through an analysis of a Classic/ Contemporary piece of literature.

Affective

1. Appreciate one's own strength and limitations in nursing practice.
2. Value self as a competent nurse in the health care system.
3. Appreciate Jesuit Education as a basis for nursing practice.
4. Value the role of research in clinical practice.

Psychomotor

1. Participate as a contributing member of the health care team in an organizational setting.
2. Function safely as a beginning practitioner in the delivery of nursing care.
3. Demonstrate professional nursing care for a client population.
4. Function effectively in a beginning leadership role.
5. Integrate knowledge gained from the University educational experience and the practice of nursing by writing a scholarly paper using a Classic/Contemporary piece of literature.

TOPICAL OUTLINE:

Content for the seminars is designed by the individual clinical faculty. The major concepts of the School of Nursing conceptual framework (person,

health, environment, adaptation, nursing process) serve as organizing structure for discussion. Empirical indicators of the major concepts and selected sub-concepts of the curriculum are identified in the analysis of a classic/ contemporary piece of literature. Additionally, operational definitions of the concepts are correlated with the leader and manager roles of the professional nurse.

TEACHING STRATEGIES:

Seminars, clinical journals, clinical experience, student's personal objectives and self-evaluation.

COURSE REQUIREMENTS

1. Participate in the clinical experience for 168 required hours. No cuts are allowed.
2. Formulate and submit typewritten copies of clinical objectives with a "cover" page and your resume to faculty and mentor.
3. Submit a daily/weekly clinical journal addressing progress toward clinical objectives to faculty.
4. Complete individual clinical objectives and Level IV School of Nursing Terminal Objectives.
5. Participate in scheduled (2 hour weekly) seminars.
6. Paper Guidelines:

Discuss the school's conceptual framework as it relates to the piece of literature selected and to the client population cared for during your role transition clinical practicum. Selection of particular books will be made within the clinical group from the literature listed below.

Jane Eyre	The Scarlet Letter
Diary of Anne Frank	Hamlet
The Shadow Box	The Doll House

Having read the literature:

A. Briefly discuss the five major concepts in the nursing curriculum: person, nursing, health, environment, and adaptation.

B. Select and briefly discuss a maximum of four supportive sub-concepts relevant to your clinical practice setting.

C. Illustrate how the major and supportive concepts are:

1. utilized in the literature.
2. relate to your clinical practice.

EVALUATION METHODS:

Self evaluation is most important to growth. The student will be expected to evaluate his/her own learning continuously in terms of the course objectives. The final grade will be determined by the following criteria:

A. Seminar participation	25%
B. Achievement of level objectives as evaluated by faculty with mentor input.	50%
C. Achievement of personal objectives	
D. Required Paper	25%

SYNTHESIS PAPER GRADING CRITERIA

A. Organization APA Format (20%)

1. Acceptable A.P.A. style - 12-15 pages in length.
2. Grammar, spelling, organization of content.
3. Overall neatness and appearance.
4. Creativity

B. Development of Concepts (20%)
1. Brief discussion of major concepts of nursing curriculum.
2. Brief discussion of supportive selective subconcepts.

C. Illustration and application of major and supportive concept (60%)
1. Representation in literature.
2. Exemplification in the synthesis clinical practicum.

REQUIRED TEXTS:

Selected classic/contemporary piece of literature will be used in seminars.

Revised/DS & Team Leaders/86

APPENDIX B

UNIVERSITY

SCHOOL OF NURSING

December 9, 1985

Bette B. Case, R.N., M.S.N.
56 W. Schiller
Chicago, Illinois 60610

Dear Ms. Case:

I am writing to you in response to your request for the approval of the Research Committee to collect data for your dissertation research. A review of your request took place at the December 9th meeting of the Research Committee.

We are pleased to inform you that the Research Committee has approved your request to collect data at School of Nursing, during March and April of 1986. Prior to initiation of your project, documentation of IRB approval and a copy of the revised instrument are required.

If you would be kind enough to advise me of the name of the faculty member coordinating the course you referred to, I would be willing to notify them that your proposal has been approved.

We look forward to reviewing your findings and congratulate you on your progress with your educational program. You have our best wishes for the successful completion of your doctoral program.

Sincerely,

Rosanne C. Perez, Ed.D., R.N., C.P.N.A.
Chairman, Research Committee
School of Nursing

RCP/sj

APPENDIX C

UNIVERSITY MEDICAL CENTER

November 18, 1985

Bette Case, R.N., M.S.N.
56 West Schiller
Chicago, Illinois 60610

Dear Ms. Case:

Your proposed research, A Descriptive Study of Learning by Role Modeling, has been approved for conduct within the Department of Nursing. You are free to proceed with your study within the following guidelines:

1. A copy of approval by the University Medical Center's Institutional Review Board must be submitted to the Nursing Research Department prior to implementation of your study.

2. The results of your study must be verbally presented to the Department of Nursing staff within twelve months of data collection. As we discussed, the Nursing Research Forum for 1986-1987 is probably the best opportunity to do this.

3. A copy of the study abstract must be submitted to the Department of Nursing Research when complete.

It was a pleasure to meet you, and I wish you success in completing your degree requirements.

Sincerely,

Karen Haller

Karen B. Haller, Ph.D., R.N.
Nursing Research

KBH:sr

APPENDIX D

UNIVERSITY

INSTITUTIONAL REVIEW BOARD FOR PROTECTION OF HUMAN SUBJECTS — MEDICAL CENTER

Robert E. Henkin, M.D.
Chairman

George B. McAteer, R.Ph.
Vice Chairman

Susan E. Rokos
Administrative Secretary

February 19, 1986

Bette Case, R.N.
School of Nursing
University Medical Center

Re: "A Descriptive Study of Learning by Role Modeling."
IRB# 2/86-3b.

Dear Ms. Case:

At its meeting of February 19, 1986, the Institutional Review Board for the Protection of Human Subjects reviewed the above-captioned protocol.

Via Expedited Review, the Board approved the minimal risk study. You now have full IRB approval to proceed with your research project and have been assigned the IRB number indicated above.

The IRB suggests that if the patients employed in your research protocol are other than your own, that their attending physician be informed that they are on an experimental protocol.

If you should have any questions or possible future changes with regard to the research project, please do not hesitate to contact me.

Yours truly,

Robert E. Henkin, M.D., Chairman
Institutional Review Board for the
Protection of Human Subjects - Medical Center

REH/s

cc: IRBPHS Members
IRBPHS file

APPENDIX E

STUDY OF LEARNING BY ROLE MODELING

The purpose of this research is to study learning which takes place through role modeling. Students, faculty members and nurse mentors involved in Nursing 381 are being asked to participate by completing the questionnaires which accompany this notice. Students, will be asked to complete these same questionnaires at the conclusion of Nursing 381.

Your responses and results of data analysis will be held in strictest confidence by the investigator. Results will be reported in grouped form without reference to characteristics of individuals or situations that would make it possible to identify you as an individual or associate you with the answers you provided.

Please do not write your name on any of the questionnaires. You are asked to indicate the unit(s) to which you are assigned and whether you are a student, a mentor or a faculty member so that the responses of the particular student, his or her mentor and his or her instructor may be compared. This information will be used by the investigator only for the purpose of data analysis and not shared with subjects or other representatives of the school or the medical center. Results will not be reported in any way which allows identification of an individual with his or her responses.

Participation in this study is completely voluntary. You have the option to participate or not to participate. You may discontinue participation at any time. The questions you will be asked relate to your perceptions of your work situation and professional life in nursing.

There are no known risks to you through your participation in this study. Your participation will benefit those who will be involved in nursing education in the future, by making available information concerning the process of learning by role modeling.

By answering the questions and returning the questionnaires to the investigator, your consent to participate voluntarily in this study is implied.

Thank you for your assistance.

Sincerely,

Bette B. Case, RN, MSN

APPENDIX F

I am assigned to -
CLINICAL UNIT(S) _____

I am a |_| Female |_| Male

I am a -

|_| Student |_| Mentor |_| Faculty Member

WORK VALUES INVENTORY

Donald E. Super

Teachers College, Columbia University

Houghton Mifflin

Test Editorial Offices: Iowa City, Iowa

Atlanta • Dallas • Geneva, Illinois
Hopewell, New Jersey • Palo Alto

Corporate Headquarters: Boston

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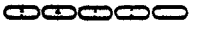
The statements below represent values which people consider important in their work. These are satisfactions which people often seek in their jobs or as a result of their jobs. They are not all considered equally important; some are very important to some people but of little importance to others. Read each statement carefully and indicate how important it is for you.

5 means "Very Important"
4 means "Important"
3 means "Moderately Important"
2 means "Of Little Importance"
1 means "Unimportant"

(Fill in one oval by each item to show your rating of the statement.)

Work in which you . . .

1. . . . have to keep solving new problems. 
2. . . . help others. 
3. . . . can get a raise. 
4. . . . look forward to changes in your job. 
5. . . . have freedom in your own area. 
6. . . . gain prestige in your field. 
7. . . . need to have artistic ability. 
8. . . . are one of the gang. 
9. . . . know your job will last. 
10. . . . can be the kind of person you would like to be. 
11. . . . have a boss who gives you a square deal. 
12. . . . like the setting in which your job is done. 
13. . . . get the feeling of having done a good day's work. 
14. . . . have authority over others. 
15. . . . try out new ideas and suggestions. 
16. . . . create something new. 
17. . . . know by the results when you've done a good job. 
18. . . . have a boss who is reasonable.
19. . . . are sure of always having a job. 
20. . . . add beauty to the world.
21. . . . make your own decisions.

5 means "Very Important"
4 means "Important"
3 means "Moderately Important"
2 means "Of Little Importance"
1 means "Unimportant"

22. . . . have pay increases that keep up with the cost of living.
23. . . . are mentally challenged.
24. . . . use leadership abilities.
25. . . . have adequate lounge, toilet and other facilities.

26. . . have a way of life, while not on the job, that you like.
27. . . . form friendships with your fellow employees.
28. . . . know that others consider your work important.
29. . . . do not do the same thing all the time.
30. . . . feel you have helped another person.
31. . . . add to the well-being of other people.
32. . . . do many different things.
33. . . . are looked up to by others.
34. . . . have good contacts with fellow workers.
35. . . . lead the kind of life you most enjoy.

36. . . . have a good place in which to work (good lighting, quiet, clean, enough space, etc.)
37. . . . plan and organize the work of others.
38. . . . need to be mentally alert.
39. . . . are paid enough to live right.
40. . . . are your own boss.
41. . . . make attractive products.

42. . . . are sure of another job in the company if your present job ends.
43. . . . have a supervisor who is considerate.
44. . . . see the results of your efforts.
45. . . . contribute new ideas.

Now check to be sure that you rated every statement.

APPENDIX G

WORK VALUES INVENTORY

(from Work Values Inventory by Donald Super, 1968)

I am assigned to -
CLINICAL UNIT(S)_____

I am a ☐ Female ☐ Male

I am a -

☐ Student ☐ Mentor ☐ Faculty Member

The statements below represent values which people consider important in their work. These are satisfactions which people often seek in their jobs or as a result of their jobs. They are not all considered equally important; some are very important to some people but of little importance to others. Read each statement carefully and indicate how important it is for you.

Place "X" in box ☒ which indicates how important each statement is to you.

	Very Important	Important	Moderately Important	Of Little Importance	Unimportant
1. ... have to keep solving new problems.	☐	☐	☐	☐	☐
2. ... help others.	☐	☐	☐	☐	☐
3. ... can get a raise.	☐	☐	☐	☐	☐
4. ... have freedom in your own area.	☐	☐	☐	☐	☐
5. ... gain prestige in your field.	☐	☐	☐	☐	☐
6. ... need to have artistic ability.	☐	☐	☐	☐	☐
7. ... are one of the gang.	☐	☐	☐	☐	☐
8. ... know your job will last.	☐	☐	☐	☐	☐
9. ... like the setting in which your job is done.	☐	☐	☐	☐	☐
10. ... have authority over others.	☐	☐	☐	☐	☐
11. ... try out new ideas and suggestions.	☐	☐	☐	☐	☐
12. ... are sure of always having a job.	☐	☐	☐	☐	☐
13. ... add beauty to the world.	☐	☐	☐	☐	☐
14. ... make your own decisions.	☐	☐	☐	☐	☐
15. ... have pay increases that keep up with the cost of living.	☐	☐	☐	☐	☐
16. ... are mentally challenged.	☐	☐	☐	☐	☐
17. ... use leadership abilities.	☐	☐	☐	☐	☐
18. ... have adequate lounge, toilet and other facilities.	☐	☐	☐	☐	☐
19. ... form friendships with your fellow employees.	☐	☐	☐	☐	☐
20. ... know that others consider your work important.	☐	☐	☐	☐	☐
21. ... feel you have helped another person.	☐	☐	☐	☐	☐
22. ... add to the well-being of other people.	☐	☐	☐	☐	☐
23. ... are looked up to by others.	☐	☐	☐	☐	☐
24. ... have good contacts with fellow workers.	☐	☐	☐	☐	☐
25. ... have a good place in which to work (good lighting, quiet, clean, enough space, etc.)	☐	☐	☐	☐	☐
26. ... need to be mentally alert.	☐	☐	☐	☐	☐
27. ... are paid enough to live right.	☐	☐	☐	☐	☐
28. ... are your own boss.	☐	☐	☐	☐	☐
29. ... make attractive products.	☐	☐	☐	☐	☐
30. ... contribute new ideas.	☐	☐	☐	☐	☐

Very Important | Important | Moderately Important | Of Little Importance | Unimportant

APPENDIX H

I am assigned to -
CLINICAL UNIT(S) _____

I am a [ ] Female [ ] Male

I am a -

[ ] Student [ ] Mentor [ ] Faculty Member

1. Please complete box at left
2. Please turn this sheet sideways.
3. On each line of the label, write the initials of (or some other way to identify) a person who fits this description for you. Use each person ONE time.

5. Rate each person on the scale of one (1) to seven (7) for each description provided below. Write the number in the box which is to the left of the description in the column for that person.

6. When you have rated each person on each description, remove the label.

7. If you will be doing this exercise again as a part of this study, affix the label to the label space on the attached sheet, which is a duplicate of this one. Place the sheet in the attached envelope. You will be asked to rate these same people again at a later date.

8. Seal the envelope and indicate on it your unit(s) and whether you are a student, mentor or faculty member.

9. If you are doing this exercise this one time only, tear up the label and dispose of it. This assures your privacy in the naming of individuals for rating.

1	2	3	4	5	6	7		Myself	Most successful senior nursing student I know	Least successful senior nursing student I know	Nursing instructor who had most influence on me	Nursing instructor who had little influence on me	BH I would like to be like	BH I hope I am never like	My Nursing 331 Mentor	Person I would most like to work with	Person I would rather not work with	Most successful BH I know	Least successful BH I know
Difficult to communicate with							Easy to communicate with												
Cooperative							Competitive												
Lacks self-confidence							Self-confident												
Helpful							Not helpful												
Realistic							Idealistic												
Inefficient							Efficient												
Takes responsibility for own actions							Sees others & circumstances as responsible for own actions												
Assertive							Passive												
Emphasizes safe care for groups of patients							Emphasizes comprehensive/ individualized patient care												
Resists learning new things							Eager to learn new things												
Highly clinically knowledgeable							Lacks clinical knowledge												
Focuses heavily on one aspect of life							Achieves balance of personal and professional life												
Uses problem solving process to reach decisions							Uses institutional rules as basis for decisions												
Powerless							Powerful												
Highly clinically skillful							Lacks clinical skills												
Not accepted by peers							Accepted well by peers												
Needs much direction from others							Self-directed												
Has input into what goes on in work setting							Has no input into what goes on in work setting												
Enjoys helping others learn							Dislikes helping others learn												
Masculine							Feminine												
Inflexible							Flexible												

APPENDIX I

ROLE MODEL REPERTORY GRID
STUDENT VERSION

1. I am assigned to CLINICAL UNIT(S) _____

   I am a |_| Female |_| Male

   I am a -

   |_| Student |_| Mentor |_| Faculty Member

2. Please turn this sheet sideways.

3. On each line of this label, write the name or initials of a person who fits the description to the right of the line. Use each person one time only. No one other than yourself will see this label.

4. Turn this sheet

5. Rate each person on the scale of one (1) to seven (7) for each description provided below. Write the number in the box which is to the left of the description in the column for that person.

6. When you have rated each person on each description, remove the label.

7. Affix the label to the label space on the attached sheet which is a duplicate of this one.

8. Place the sheet in the attached envelope. You will be asked to rate these same people again at a later date.

9. Seal the envelope. On the label on the envelope fill in your clinical unit and the initials of your mentor. Return the envelope with this form.

10. Return this completed form.

THANK YOU!

Myself	RM I would like to be like	RM I hope I am never like	My Nursing 351 Mentor	Most successful senior nursing student I know	Least successful senior nursing student I know	Person I would most like to work with	Person I would rather not work with

1	2	3	4	5	6	7	
Poor rapport with others	-	-	-	-	-	-	Excellent rapport with others
Focuses heavily on one aspect of life	-	-	-	-	-	-	Achieves balance of personal and professional life
Uses problem solving to reach decisions	-	-	-	-	-	-	Uses institutional rules as basis for decisions
Cooperative	-	-	-	-	-	-	Competitive
Lacks self-confidence	-	-	-	-	-	-	Extremely self-confident
Realistic	-	-	-	-	-	-	Idealistic
Very inefficient	-	-	-	-	-	-	Extremely efficient
Takes responsibility for own actions	-	-	-	-	-	-	Sees others & circumstances as responsible for own actions
Emphasizes safe care for groups of patients	-	-	-	-	-	-	Emphasizes comprehensive/ individualized patient care
Resists learning new things	-	-	-	-	-	-	Very eager to learn new things
Lacks clinical expertise	-	-	-	-	-	-	Great clinical expertise
Powerless	-	-	-	-	-	-	Extremely powerful
Needs much direction from others	-	-	-	-	-	-	Highly self-directed
Enjoys helping others learn	-	-	-	-	-	-	Dislikes helping others learn
Inflexible	-	-	-	-	-	-	Very flexible
Very impatient	-	-	-	-	-	-	Extremely patient
Never supportive of others	-	-	-	-	-	-	Very supportive of others
Never takes leadership role	-	-	-	-	-	-	Influential leader

Myself	R.M. I'd like to be like	R.M. I hope I'm never like	My Nursing 351 Mentor	Most successful senior student I know	Least successful senior student I know	Person I'd most like to work with	Person I'd rather not work with

ROLE MODEL REPERTORY GRID
STUDENT VERSION: CONCLUSION OF SYNTHESIS COURSE

1. I am assigned to CLINICAL UNIT(S)_____

   I am a |_| Female |_| Male

   I am a -

   |_| Student |_| Mentor |_| Faculty Member

2. Recall that for each of these descriptions you have identified a person who fits each description for you.

3. Rate each person on the scale of one (1) to seven (7) for each description provided below. Write the number in the box which is to the left of the description in the column for that person.

4. When you have rated each person on each description, remove the label.

5. Return this completed form.

THANK YOU!

1	2	3	4	5	6	7	Myself	I would like to be like	I have I am never like	My Mentor (If Mentor)	Most successful senior nursing students I know	Least successful senior nursing students I know	Person I would most like to work with	Person I would rather not work with
Poor rapport with others						Excellent rapport with others								
Focuses heavily on one aspect of life						Achieves balance of personal and professional life								
Uses problem solving to reach decisions						Uses institutional rules as basis for decisions								
Cooperative						Competitive								
Lacks self-confidence						Extremely self-confident								
Realistic						Idealistic								
Very inefficient						Extremely efficient								
Takes responsibility for own actions						Sees others & circumstances as responsible for own actions								
Emphasizes safe care for groups of patients						Emphasizes comprehensive/ individualized patient care								
Resists learning new things						Very eager to learn new things								
Lacks clinical expertise						Great clinical expertise								
Powerless						Extremely powerful								
Needs much direction from others						Highly self-directed								
Enjoys helping others learn						Dislikes helping others learn								
Inflexible						Very flexible								
Very impatient						Extremely patient								
Never supportive of others						Very supportive of others								
Never takes leadership role						Influential leader								

APPENDIX J

I am assigned to - CLINICAL UNIT(S) _____

I am a ☐ Female ☐ Male

I am a -

☐ Student ☐ Mentor ☐ Faculty Member

1. Please complete box at left

2. Please turn this sheet sideways.

3. On each line of the label, write the initials of (or some other way to identify) a person who fits this description for you. Use each person ONE LINE only. No one other than yourself will see this label.

5. Rate each person on the scale of one (1) to seven (7) for each description provided below. Write the number in the box which is to the left of the description in the column for that person.

6. When you have rated each person on each description, remove the label.

7. If you will be doing this exercise again as a part of this study, affix the label to the label space on the attached sheet, which is a duplicate of this one. Place the sheet in the attached envelope. You will be asked to rate these same people again at a later date.

8. Seal the envelope and indicate on it your unit(s) and whether you are a student, mentor or faculty member.

9. If you are doing this exercise this one time only, tear up the label and dispose of it. This assures your privacy in the naming of individuals for rating.

1	2	3	4	5	6	7	Myself	Most successful senior nursing student I know	Least successful senior nursing student I know	Nursing instructor who had most influence on me	Nursing instructor who had little influence on me	RN I would like to be like	RN I know I am never like	My immediate supervisor	Person I would most like to work with	Person I would rather not work with	Most successful RN I know	Least successful RN I know
Difficult to communicate with						Easy to communicate with												
Cooperative						Competitive												
Lacks self-confidence						Self-confident												
Helpful						Not helpful												
Realistic						Idealistic												
Inefficient						Efficient												
Takes responsibility for own actions						Sees others & circumstances as responsible for own actions												
Assertive						Passive												
Emphasizes safe care for groups of patients						Emphasizes comprehensive/ individualized patient care												
Resists learning new things						Eager to learn new things												
Highly clinically knowledgeable						Lacks clinical knowledge												
Focuses heavily on one aspect of life						Achieves balance of personal and professional life												
Uses problem solving process to reach decisions						Uses institutional rules as basis for decisions												
Powerless						Powerful												
Highly clinically skillful						Lacks clinical skills												
Not accepted by peers						Accepted well by peers												
Needs much direction from others						Self-directed												
Has input into what goes on in work setting						Has no input into what goes on in work setting												
Enjoys helping others learn						Dislikes helping others learn												
Masculine						Feminine												
Inflexible						Flexible												

APPENDIX K

ROLE MODEL REPERTORY GRID
FACULTY AND MENTOR VERSION

1. I am assigned to CLINICAL UNIT(S) _____

   I am a |_| Female |_| Male

   I am a -

   |_| Student |_| Mentor |_| Faculty Member

2. Please turn this sheet sideways.

3. On each line of this label, write the name or initials of a person who fits the description to the right of the line. Use each person one time only. No one other than yourself will see this label.

4. Turn this sheet.

5. Rate each person on the scale of one (1) to seven (7) for each description provided below. Write the number in the box which is to the left of the description in the column for that person.

6. When you have rated each person on each description, remove the label and destroy it.

7. Return this completed form.

THANK YOU!

Myself	RN I would like to be like	RN I hope I am never like	My immediate supervisor	Most successful senior nursing student I know	Least successful senior nursing student I know	Person I would most like to work with	Person I would rather not work with	1	2	3	4	5	6	7
								Poor rapport with others	-	-	-	-	-	-	Excellent rapport with others
								Focusses heavily on one aspect of life	-	-	-	-	-	-	Achieves balance of personal and professional life
								Uses problem solving to reach decisions	-	-	-	-	-	-	Uses institutional rules as basis for decisions
								Cooperative	-	-	-	-	-	-	Competitive
								Lacks self-confidence	-	-	-	-	-	-	Extremely self-confident
								Realistic	-	-	-	-	-	-	Idealistic
								Very inefficient	-	-	-	-	-	-	Extremely efficient
								Takes responsibility for own actions	-	-	-	-	-	-	Sees others & circumstances as responsible for own actions
								Emphasizes safe care for groups of patients	-	-	-	-	-	-	Emphasizes comprehensive/ individualized patient care
								Resists learning new things	-	-	-	-	-	-	Very eager to learn new things
								Lacks clinical expertise	-	-	-	-	-	-	Great clinical expertise
								Powerless	-	-	-	-	-	-	Extremely powerful
								Needs much direction from others	-	-	-	-	-	-	Highly self-directed
								Enjoys helping others learn	-	-	-	-	-	-	Dislikes helping others learn
								Inflexible	-	-	-	-	-	-	Very flexible
								Very impatient	-	-	-	-	-	-	Extremely patient
								Never supportive of others	-	-	-	-	-	-	Very supportive of others
								Never takes leadership role	-	-	-	-	-	-	Influential leader

Myself
R.N. I'd like to be like
R.N. I hope I'm never like
My immediate supervisor
Most successful senior nursing student
Least successful senior nursing student
Person I'd like to work with
Person I'd rather not work with

APPENDIX L

PERCEPTIONS OF THE MENTORSHIP EXPERIENCE QUESTIONNAIRE

Please complete the information in this box ----------->

I am assigned to -
CLINICAL UNIT(S)

I am a - |_| Female |_| Male

I am a -
STUDENT |_| MENTOR |_|

FACULTY MEMBER |_|

1. What do you think is the greatest benefit of the mentorship experience?

2. What do you think is the most important learning that occurs through the student and mentor working together?

3. In the experience you have had this semester, what does the mentor <u>most often</u> say or do to help the student benefit from observing the mentor (e.g., answer the student's questions about what has been observed; tell the student what to look for in a situation to be observed; explain the mentor's actions after the situation has been observed; provide lots of opportunities for the student to see the mentor in action; or some other action)?

4. What do you think is the most important characteristic of an effective mentor?

5. What do you think is the most important characteristic of a student who learns effectively from a mentor?

APPROVAL SHEET

The dissertation submitted by Bette Case has been read and approved by the following committee:

Dr. Ronald R. Morgan, Director
Associate Professor, Counseling and Educational Psychology, Loyola

Dr. Marilyn M. Bunt
Associate Professor, Nursing, Loyola

Dr. Steven I. Miller
Professor, Educational Leadership and Policy Studies, Loyola

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Associate Professor, Counseling and Educational Psychology, Loyola

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

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

4/16/87
Date

Ronald R. Morgan
Director's Signature