A DESIGN FOR A PROFESSIONAL EDUCATION CURRICULUM
BASED ON A PARADIGM OF PROFESSIONAL PRACTICE

By
GERALDINE E. LONG

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By

Geraldine E. Long
To My Son  
John  

Who at the young age of seven,  
gave so much love and  
understanding
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Geraldine E. Long

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Chairman: Arthur J. Lewis
Major Department: Curriculum and Instruction

Effective professional practice is the result of a socialization process that develops an individual's cognitive, behavioral competence as well as professional identity. Grounded in the belief that the formal educational process should exert the greatest influence throughout socialization, the purposes of this theoretical study were to derive a paradigm of professional practice that interrelates professional competence and identity and to project from this theoretical base a curriculum design applicable to preservice professional programs.

Following a review of the literature on professional competence, identity, and socialization, eight concepts supporting the practice paradigm were identified: critical thinking, problem solving, judgment, creativity, empathy, self-efficacy, integrity, and autonomy. Each concept was analyzed, its relevance to professional practice demonstrated and empirical evidence on educational strategies effective for its development presented. Basic principles of professional
practice were derived and the interrelated dimensions of the concepts were articulated in propositional statements.

To project a curriculum design from the paradigm, theoretical underpinnings of curriculum were presented. Curriculum was defined as that set of intended experiences, carefully designed to represent the medium through which a theory of professional practice is realized and continuation and growth of the profession is insured. From this definition, a curriculum system was proposed that described interactive elements directing curriculum development.

Synthesizing the theoretical underpinnings of both professional practice and curriculum, curriculum assumptions were derived directly from principles of professional practice. Aims and purposes of professional education and characteristics of the beginning professional were supported by the propositions of the paradigm. A multidimensional curriculum design was outlined, instructional modes empirically tested for each concept were presented and evaluative processes were proposed. For clarity, one aspect of the design was illustrated.

The significance of the study is seen in the extensive theoretical and empirical support for the paradigm of professional practice and the guidance the paradigm gives to professional curriculum development. The study is useful for the development of new curriculum designs as well as for the study of existing ones. It serves as a guide as well as a criterion through which professional programs can balance and maximize the technical-theoretical and intrapersonal domains of professional practice.
CHAPTER I
INTRODUCTION

Professions serve a vital function in society. By definition they are based on a specialized body of knowledge, organized into associations, and guided by altruism (McGlothin, 1964). Many professions, however, are publicly criticized for monopolizing the services they perform, exaggerating the degree of specialized knowledge they possess, being self-serving, and producing incompetent practitioners. In addition, individuals are leaving their chosen professions disappointed, frustrated, and dissatisfied by the lack of public, bureaucratic, and professional support they receive for their efforts towards fulfilling self-actualizing personal and professional goals. There is a need for reform within the professional community and the burden of responsibility for initiating needed change rests with the professional schools.

Statement of the Problem

Professional schools should modify their curricula to cope with long existent problems as well as recently emerging ones. The challenge to professional schools is to achieve an appropriate balance between theory and practice to enable the professional to effectively practice and meet changing societal expectations for increased accountability and participation in professional services. Regardless of the nature of the profession or the length of the program, a framework for guiding the
professional in practice should be developed during the educational process. Argyris and Schon (1974) stated:

The foundation for future professional competence seems to be the capacity to learn how to learn. This requires developing one's own continuing theory of practice under real-time conditions. (p. 157)

According to Argyris and Schon a theory of practice evolves when the professional develops and organizes microtheories of action into a discernable pattern that specifies the actions that will, under the relevant assumptions and in a given situation, yield intended consequences. The professional should be able to act according to these microtheories and simultaneously reflect on them to assess the impact of actions taken on the "behavioral world" -- including the professional himself, the client and the client system -- and on learning and effectiveness. Thus, a theory of practice has interrelated, technical and intrapersonal dimensions in which the integration of thought, action and learning is implicit.

Professional education should seek new ways of organizing an expanding body of knowledge and providing learning experiences that replicate reality. In addition, students should be assisted in increasing their self-insight, their ability to manage client relationships and social problems, to sort out the ethical and value issues inherent in their professional role, and to continue to learn throughout their career. To accomplish these goals, the theoretical bases for curriculum design in professional education must be reconceptualized to balance and maximize both technical-theoretical and intrapersonal professional domains.

This research is a theoretical study in curriculum building with the following purposes:
1. to develop a theoretical paradigm of professional practice based on the achievement of professional competence and identity;

2. to propose a curriculum system for professional education through application of the theoretical underpinnings of curriculum;

3. to project a curriculum design from this theoretical base, applicable to preservice professional programs; and

4. to make recommendations for the improvement of professional curricula.

Background and Need for the Study

The need for the study is established through an exploration of the historical development of the professions and professional education and the current issues and trends affecting them.

Professions in American Society: Definition and Purpose

Professions profess. They profess to know better than others the nature of certain matters, and to know better than their clients what ails them or their affairs. This is the essence of the professional idea and the professional claim. (Hughes, 1963, p. 656)

The professions are outgrowths of society's need or desire for special services. As society and technology evolved, the number of established professions flourished.

At the beginning of the 19th Century, only three "learned" professions were recognized: divinity, law, and medicine. Each was closely associated with prominent social status and limited to select individuals. It was not until 1830 and the rise of the industrial revolution that entrance into professions became more competitive. Generally, however, the motive for the middle class to seek a profession was to gain status through work (Larson, 1977).
By 1897, 13 "professions" were organized into national associations in the United States. Among these were medicine (1847), teaching (1857), and nursing (1896) (Larson, 1977). During the early 20th Century, professions proliferated and there was a need to differentiate professions from other types of work.

Abraham Flexner (1915), after his study of medical education in the United States, listed six criteria for a profession. According to Flexner a profession is

1. intellectual, and carries with it a great personal responsibility for the proper exercise of choice and judgement;
2. learned, for it is based on a substantial body of knowledge;
3. practical, since its knowledge can be applied to real-life situations. It can help to solve human problems;
4. technical, and has techniques which can be taught, and which serve as the mechanisms by which knowledge can be applied to the solution of problems;
5. organized into associations or groups for various professional purposes; and
6. guided by altruism, by concern for the patients or clients who come to it for help. (McGlothin, 1964, p. 8)

Since Flexner's assertion that a profession is intellectual, learned, practical, technical, organized, and altruistic, others have studied the professions in an attempt to further define them. For example, Carr-Saunders and Wilson concluded:

The application of an intellectual technique to the ordinary business of life, acquired as a result of prolonged and specialized training, is the chief distinguishing characteristic of the profession. (1933, p. 491)

Ralph Tyler (1952) listed two distinctive attributes of a true profession: a recognized code of ethics and techniques of operation
based upon principles rather than rule of thumb or simple routine procedures. Lloyd Blauch (1955) identified three essential characteristics: (1) specialized skills requiring long study and training; (2) success measured by the quality of service rendered rather than by any financial standard; and (3) the organization of a professional association to maintain and improve service and also enforce a code of ethics.

Most authors agree that a profession cannot be distinguished by any one criterion. Edgar Schein (1972) analyzed the writings of a number of sociologists who derived definitions of professions by examining "professional behavior." Ten attributes were identified:

1. The professional is engaged in a full-time occupation;
2. The professional is assumed to have a strong motivation for his/her choice of professional career;
3. The professional possesses a specialized body of knowledge and skills, acquired during a prolonged period of education;
4. The professional makes decisions based on general principles, theories, or propositions;
5. The professional is assumed to have a service orientation;
6. The professional's service is based on the objective needs of the client;
7. The professional demands autonomy of judgement of his own performance;
8. Professionals form professional associations which define criteria of admission, educational standards, licensing or other formal entry examinations, career lines within the profession, and areas of jurisdiction for the profession;

9. The professional's knowledge is assumed to be specific -- he/she does not venture outside of the area defined by his/her training; and

10. Professionals are not allowed to advertise or to seek out clients. (pp. 8-9)

Other than divinity, law, and medicine, which meet all of the criteria (with the exception of number 10, lawyers and physicians are now permitted to advertise), other professions are considered to have varying degrees of "professionalism."

Deriving a definition of a profession is more than the application of a set of criteria. The mere fact that most professions are now practiced within large organizations obscures the issue of autonomy, which according to most sociologists, is the ultimate criterion.

Although interdependent, a distinction between a profession and a professional can, and should be made. The purpose of a profession is to unite competent people to do socially significant work of increasing usefulness, advance knowledge through research, and enable members to be effective by protecting them from unwarranted attack, unethical practice, encroachment, or quackery (McGlothin, 1964). To accomplish this, a profession is grounded within an extensive body of knowledge with defined sets of principles. The nature of professional work involves complex tasks performed by "artistic application of major principles and concepts rather than routine operations or skills...it involves individual judgment and imagination" (Tyler, 1952, p. 56).

Second, a profession has an established, recognized code of ethics which delineates the profession's responsibilities to its clients, colleagues, and the public. This ethical code commits members of the profession to certain social values above individual ones of income, power, and prestige.
Finally, a profession has an organized voluntary association which proposes to maintain standards of performance, encourage professional growth and development, communicate with the public and defend the profession's interest against infringement by the public or other occupational groups (Barber, 1963).

Professional Education

Professional education grew from "apprenticeships" in response to society's need for an increased number of well-trained individuals. The proprietary schools, common in both legal and medical education throughout the 19th and early 20th centuries, were closely tied to practice. They emphasized learning by doing with a gradual increase in the use of readings, in the form of printed lectures (Gartner, 1976). These proprietary schools, as well as the normal schools in teacher education and other training institutes, made minimal intellectual demands upon students and had little regard for their previous education. In essence, there were no professional standards.

With the advancement of knowledge and pressures from the public, professions sought to upgrade themselves by turning to the universities. As Alan Gartner pointed out:

In doing so, they added lustre to their authority, extended the range of their legitimation, and gave credence to the argument that professional wisdom was based not only upon particular skill, but upon generalized learning. (1976, p. 34)

Along with the move to the universities, state examination and licensing authorities, professional associations, and associations of professional schools evolved to strengthen and implement standards.

As the professional schools strengthened their ties with colleges and universities, basic instruction was provided in undergraduate
departments. Eventually, the older professions, law, theology, and medicine, required that students complete undergraduate general education before beginning professional studies. Some of the newer professions (teaching, nursing and social work, for example) assimilated directly into undergraduate programs. The Carnegie Council in 1976 identified 16 professions as being represented by separate schools within undergraduate colleges in the United States, comprising 58% of all students (Carnegie Foundation, 1977, p. 114).

The purposes of professional education, according to McGlothlin (1964), are to provide the number of educated entrants necessary to the profession and maintain, or increase, the quality of these entrants to satisfy society's needs. He suggested several principles be derived from these aims of quantity and quality:

1. When professional schools obtained a monopoly for qualifying entrants for the professions, they also assumed the obligation of supplying enough entrants;

2. Members of the professions and professional schools must cooperate to assure sufficient numbers of students in the schools;

3. All feasible methods, including reorganization of the ways in which professional services are provided, should be tried in order to help offset the shortages which plague the professions and therefore society which they serve. The place of the professions is seriously threatened by shortages which require society to turn to non-professionals for the services it requires;

4. Professional education should be directed toward significant objectives including professional competence, understanding of society, ethical behavior, and scholarly concern;

5. A professional school should periodically review its procedures and programs and make such modifications as are needed to assure that they are contributing fully to movement toward the objectives;

6. Each of the objectives given above is valid, but professional schools have been more accustomed to emphasizing professional competence than the others.
Additional effort should be placed on the other objectives to increase the quality of programs;

7. A program of professional education cannot ignore either the aim of quantity or the aim of quality. It must establish a moving equilibrium between them, but it cannot allow quality to drop below an essential minimum. (pp. 22-31)

Consistent with the aims and purposes of professional education, McGlothlin in 1964 predicted six future developments which would affect professional schools. These developments form the basis of the major issues today.

1. The demands of society for professionally educated persons will continue to increase but these demands cannot be met without substantial change in professional educational programs;

2. The professions, as now organized, will continue with such modification as occurs, coming through evolution rather than through cataclysmic change;

3. The knowledge upon which practice of the professions is based will continue to expand;

4. The knowledge and skill required for practice of a profession are too complex to be transmitted by apprenticeship;

5. No one can precisely predict the future life of an individual, but his occupation will probably be that for which he obtains professional education. In addition, professional people will be leaders in civic affairs;

6. Professional education can satisfy both occupational and general aims. It can help students obtain knowledge and skills required by professional practice and to develop appropriate attitudes towards a sense of professional commitment. (pp. 231-236)

Since 1960, society's need for professionally trained individuals has increased. The introduction of the computer, the American lifestyle, crime, violence, the knowledge explosion, and the world's increasing population have created many new, highly specialized fields, based on sophisticated theoretical knowledge. In medicine, for example,
the number of general practitioners fell to less than 10% of all graduates from medical school in 1970 (Ferguson, 1980). Highly specialized physicians were available to treat critical and catastrophic illness in large urban centers. Rural society was virtually ignored as was the overall health maintenance and promotion needs of all individuals. Medicine has recognized these inadequacies and has begun a shift towards the "holistic" concept of health and illness. Many professions, however, continue to be highly specialized.

The knowledge explosion created another dilemma for professional education, the relevancy of today's knowledge to tomorrow's practice. Mayhew (1971) reported the generally agreed half life of knowledge in a profession is approximately five years. He suggested:

Professional schools must search for new ways of organizing information so that students can perceive broad dimensions and develop skills to acquire special knowledge when necessary in the future. They must discover patterns which will provide some general common preparation, time for specialization and time to find relationships with other specialties. (p. 12)

In attempting to reorganize information, professional schools encounter the challenge of achieving an appropriate balance between theory and practice. Most frequently, professional schools are criticized for too much emphasis on theory and not enough on practice. Some professions have attempted to overcome this by implementing strategies such as internship programs, simulated clinical experiences, and clinical preceptorships. Most efforts are confined within individual courses; few are bases for entire degree programs.

McGlothin (1964) proposed that professional education consist of three parts: the basic arts and sciences, the professional sciences, and application. However, he offered no guidelines for achieving an
appropriate balance between the three. Mayhew and Ford (1974) reported architecture devotes 12% of its curriculum to arts and sciences and 88% to professional sciences, while business has a 40 - 60% ratio. Smith and Street (1980) reported at the University of Florida 40% of coursework in law, 48% in pharmacy, 55% in engineering, and 23% in secondary education were devoted to professional studies. Thus, no definable trend in curriculum organization between or within professions is evident.

Schein (1972) identified three elements of professional education:

1. an underlying discipline or basic science component upon which the practice rests or from which it developed;
2. an applied science or "engineering" component from which many of the day-to-day diagnostic procedures and problem solutions are derived; and
3. a skills and attitudinal component that concerns the actual performance of services to the client, using the underlying basic and applied knowledge.

He noted that there appears to be little integration in most schools between the basic and applied sciences with major arguments focusing on how much of each and which should come first. Schein (1972) recommended:

Instead of debating whether clinical or basic science work should come first, schools will have to invent a form of education that permits basic science, applied science, and clinical modes to be taught simultaneously in an integrated fashion. (p. 46)

Many professional programs are highly segmented and have failed to achieve "a high degree of consensus on the paradigms to be used in the analysis of phenomena and high consensus as to what constitutes the relevant knowledge base for practice" (Schein, 1972, p. 44). Critics claim that professional education is preoccupied with techniques needed
to practice rather than examining the context within which the variable techniques are used and the consequences of each within a changing environment. Palmer stated:

Professions generally have abdicated their traditional function. My definition of professional -- as one who professes a faith -- is anathema to the engineer, the chemist, the business manager, the academic. They see themselves not as bearers of a faith or proclaimers of a confidence, but as practitioners of techniques. . . pure empirical, pragmatic, marketable technique. . . [that] admits of no need of faith. (Palmer, 1973, p. 2-3, cited in Argyris and Schon, 1974, p. 148)

Ideally, the goal of professional education is to prepare more than highly skilled technicians. Israel Scheffler (1965) stated:

the doctor, the researcher, the lawyer, and the teacher are not simply persons who have acquired technical facilities which can be run off automatically; they need competencies which require the continual exercise of strategic judgment concerning individual cases which they have never confronted before and for which there are no exhaustive rules dictating decisions to be made. Professional education. . . [must provide opportunities] for the genuine exercise of students' judgment, as well as for critical reflection on the outcomes and strategic principles of such judgment. (p. 103)

In reality, however, with the emphasis on accountability and competency based programs, there is a dichotomy between what professional education espouses and the results of the educational experience. Graduates of professional schools report feelings of incompetence, inadequacy, and insecurity upon entering the work place. There appears to be no

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2 Technique refers to the specialization of professional expertise that has evolved in most professions. Argyris and Schon stated:

The professional is seen, by himself and others, primarily as a technician who applied his professional knowledge which was the basis of his authority. (1974, p. 148)
achieved sense of professional identity or intrinsic sense of competence which leaves the new graduate vulnerable to discrepant expectations in the environment. The inability to find self-actualizing value in the professional role in turn results in a low sense of effectiveness, efficacy, self-worth, vitality, and learning.

There is need for a theoretical base for professional education which could serve the development of a curriculum design that facilitates both the achievement of professional competence and identity. This study proposes one such theoretical base.

**Assumptions Underlying the Study**

Each profession has its uniqueness, yet all share common dilemmas in the 1980's. Issues of specialization, half-life of knowledge, theory versus practice, and the inclusion of liberal arts in professional programs have been discussed. Too often curriculum change in professional schools is a reaction to external pressures, such as those coming from regulatory agencies or public criticism, and thus is built on identifiable and measurable competencies. This study does not negate the importance of professional competencies. It is, however, grounded in the belief that professional schools should first address themselves to the individuals they are preparing as practitioners; to look within the individual as the means for ensuring effectiveness. Arthur Combs (1965) defined the effective teacher as "a unique human being who has learned to use himself effectively and efficiently to carry out his own and society's purposes in the education of others" (p. 9). For an individual to learn to use himself effectively in a professional role requires that he first know himself as a professional person. This
study addresses professional education from this perspective and is built upon the following assumptions:

1. Professionals are individuals who acquire new images, expectations, skills, values and norms related to how they define themselves and how others view them.

2. The professional utilizes the best available knowledge to shape "reality" according to the articulate purposes defined by the profession in relation to existing reality.

3. The professional must be able to translate perception and thought into meaningful action.

4. Becoming a professional occurs through a process of socialization in which the individual is exposed to multiple socializing agents, both formally and informally. The strength of any one agent has a determinant role in the individual's professional development.

5. The formal educational process should exert the greatest influence on the students' professional development.

**Nature of the Study**

Although no one curriculum model can satisfy the needs of all professions, there are common concepts, objectives, and problems that can be addressed through new ways of conceptualizing and organizing the curriculum. As stated, the purpose of this study is to derive a paradigm of professional practice from a specific value framework and then to project from this paradigm a curriculum design. The word paradigm is used in Kuhn's (1970) sense. It is a framework of thought, an image or blueprint of reality, that consists of a set of theories, mathematical formulae, and hypotheses which describe the structure and behavior of particular portions of reality in terms of the known information about that reality. It is a tool for understanding
experience, not the reality it represents. Papagiannis, Klees, and Bickel (1982) stated:

paradigms are fundamentally normative, that their respective descriptions of the world are inextricably mixed with their ideological view, and therefore neither is provable nor testable by any clear rules of scientific evidence or proof. (p. 248)

In the traditional literature of educational research, the study falls within the realm of philosophical-logical-historical-methodology. It is a theoretical synthesis of postulates set forth in the fields of psychology, sociology, anthropology and education. The study uses a holistic approach which is value-oriented and idealistic in nature and relies on divergent, subjective, impressionistic, and interpretative procedures to seek understanding, plausibility, and meaning.

Organization of the Study

In addition to this chapter, establishing the background and need for the study, Chapter II is a review of the literature on the constructs of professional practice, professional competence and identity and the process of professional socialization. Chapter III presents a paradigm for professional practice from which principles and propositions are generated. Chapter IV presents the theoretical underpinnings of curriculum. A curriculum system is proposed that interrelates the practice paradigm with the curriculum planning process, the nature of learning, social forces, and the profession. Chapter V synthesizes the theoretical underpinnings of professional practice and education by presenting a curriculum design. Assumptions guiding curriculum planning are drawn from curriculum theory and directly
related to principles underlying professional practice. Included are its aims, purposes, scope, structure, and evaluation. Generalizations and implications derived from the research and recommendations for preservice professional programs are made.
CHAPTER II
REVIEW OF THE LITERATURE

Professional practice is a sequence of actions undertaken by a person to serve others, who are considered clients (Argyris and Schon, 1974). Each action is unique, purposeful and deliberate and is manifested by observable behavior. To effectively practice a profession, individuals must first acquire the specialized knowledge and skills defined by the profession and be able to apply this body of knowledge in varying situations. Professional work involves complex tasks which are performed by "artistic application of major principles and concepts rather than routine operations and skills...it involves individual judgment and imagination" (Tyler 1952, p. 56). This aspect of professional performance is defined as professional competence which has both cognitive and behavioral aspects. Competence provides the theoretical and technical base for practice.

In addition to achieving competence, individuals must acquire new images, values, and norms related to how they define themselves and how others view them. These are both internal and external changes that occur within individuals which govern their consistent behavioral patterns (actions) in the environment. In other words, the individual must achieve a sense of identity with self and the profession. Professional identity provides the intrapersonal base for practice.

Professional competence and identity are interdependent. Both have significant impact on effective professional behavior. Bragg (1976)
likens these realms of professionalism to the cognitive and affective domains of learning. The goal of professional education is to unite the two.

**Professional Competence**

Flexner (1915) asserted that one unique characteristic of a profession in that it is based on a substantial body of knowledge. The professional in turn must acquire and utilize that knowledge to be a competent practitioner. Polanyi (1958) identifies two kinds of knowing: (1) the knowing of a thing by attending to it and (2) the knowing of a thing by relying on one's awareness of it. He stated:

> Take first the process of mastering a skill. Here the emphasis of our knowing lies on producing a result. The effort involved in acquiring knowledge and skillfully applying it may then be said to be guided by a purpose. . . . When, on the other hand, the emphasis of our knowing lies in recognizing or understanding a thing, the effort involved in acquiring such knowledge may be guided by our attention. (1975, p. 42-43)

"Knowing that" is therefore different from "knowing how." Together they form a structure of tacit knowing integrated by the "act of the person." Tacit information is intentional and can be carried out only by a conscious act of the mind. Thus, all knowing is personal knowing.

Polanyi's concept of personal knowing reflects the domain of professional competence. He stated:

> the excellence of a distinguished medical consultant or surgeon is due not to his more diligent reading of textbooks but to his skill as a diagnostician and healer -- a personal skill acquired through practical experience. His professional distinction therefore lies in a massive body of personal knowledge. (1975, p. 31-32)
The concept of professional competence has two realms, cognitive or intellectual and behavioral, which when integrated by the individual gives personal meaning to the professional role.

**Cognitive Competence**

Cognitive competence is a mental phenomenon indicative only of potential performance or capability. Developing cognitive competence involves the acquisition of information set forth by the profession and the ability to identify problems in clear and workable terms, synthesize and integrate information from diverse sources for a particular purpose, invent answers or hypotheses rather than simply search for and find them, operate creatively within existing conditions, and establish and maintain conditions that enable continued creativity (Chickering, 1969).

Cognitive competence has been studied more than any other aspect of development in college (Chickering, 1969), particularly measurement of the amount of information acquired. Standardized tests, such as the Graduate Record Examination (GRE), are frequently used. In professional education knowledge of subject matter, as one component of assessing professional readiness, is almost universally practiced, usually through licensure and certification procedures (Menges, 1975). The types and sophistication of instruments used varies considerably from profession to profession. Some follow a taxonomic procedure in constructing test items; others produce extensive lists of competencies as a basis for evaluation. Menges (1975), however, notes that no empirical evidence is available to determine whether items intended for higher levels demand cognitive skills, other than recall and recognition.
The other aspect of cognitive competence is related to the ability to apply, manipulate, and effectively utilize acquired knowledge. This implies the ability to think critically, problem solve, and use resources creatively. Evaluation of these abilities in professional education is less extensive; however, there are some efforts at objectively measuring them. For example, the Patient Management Problem (PMP), first described by Williamson (1965) in medical education, is a simulated examination which assesses both the proficiency and efficiency of students' decision making processes. The caution, as in all testing procedures, is a question of the reliability and validity of the instruments in relation to actual professional practice.

The importance of professional schools to focus on developing cognitive competence cannot be overstated. It is significant for all other aspects of professional development. E.M. Bower (1966) stated:

The adjustment of an individual in the school (and later in society) can be conceptualized as a function of his competence to use referents or representations of objects and events. Such referents or representations are systematized in words, language, mathematics, and other symbol systems. Symbols are learned by individuals as a function of "experiencing" objects, events, and relationships. To convert an event or a happening into an experience (something learned) its essence must be ingested, processed and assimilated via symbolic vehicles such as words or mathematical formula (p. 109). . . . The sparking between an event or object and its eventual incorporation within self through ego processes is a function of the symbolic posts to which the event or object can be tied. An event which cannot be tied securely to a symbol has limited educational utility. An object which has no representational correlate cannot be conceptualized or held in the mind. Our basic tool for this sparking between objects and symbol has been the written and spoken word. Indeed, language is our royal road to defining not only what surrounds us in the environment but what we are as an organism. (p. 112)
Thus, research that identifies how cognitive competence is achieved and suggests educational methods that enhance its development can contribute to designing an effective professional curriculum.

Behavioral Competence

Every profession has specific identified skills which are performed by its practitioners. For example, a nurse takes an accurate blood pressure reading, a doctor sutures a wound or incision, and a teacher uses structure or probing appropriately in the classroom. These skills comprise the behavioral realm of competence. Most skills are embedded in a specific body of knowledge. The individual, however, may not be fully aware of the theoretical bases of the technique, yet can perform it proficiently. On the other hand, an individual may clearly understand the relevant information concerning a skill or technique without being able to perform the skill. This aspect of professional performance is most observable and therefore readily assessed and criticized by the public. Professional education must seek new ways to ensure the adequate development of behavioral competence in both theory and skill.

In summary, professional competence is conceptualized as a two-dimensional concept. First it involves the development of cognitive competence which includes knowledge of the discipline and problem solving, critical thinking, and creative abilities; and secondly, the demonstration of behavioral skills or techniques.

Argyris (1965) stated, "the competence of a living organism means its fitness or ability to carry on those transactions with the environment which result in its maintaining itself, growing, and
flourishing" (p. 59). In professional practice, competence can be conceived as the ability to interact effectively with the environment with a capacity for learning how to learn.

Professional competence is interdependent with professional identity. Where competence provides the individual with knowledge and the behavioral and intellectual skills necessary for practice, identity provides the confidence, motivation, values, and behavioral norms to effectively apply the acquired knowledge and skills in changing environments. Identity enhances stability and commitment, and allows the integration of the individual's personal and professional self.

Professional Identity

Over the past twenty years, the concept of personal identity has gained status as a significant psychological phenomenon. Focused originally on psychological development during adolescence, identity formation has extended to a broad range of disciplines, including professional education. Historically, a concern with the nature and role of personal identity can be traced to the nineteenth century philosophical dispute between Leibentz and Hume on the nature of the soul (Levita, 1965). More recent theorists include William James (1910) with the concept of "social self," George Herbert Mead (1934) and Harry Stack Sullivan (1953) with the conception of the self as a precipitate of social appraisals, Paul Schilder's (1951) "fluctuating self-experience," and Erik Erikson's (1950) "ego identity." Each theorist presents a psychological or sociological perspective or attempts to integrate the two when presenting the concept.
According to Erikson, a Freudian psychologist, identity is the accrued experience of the ego's ability to integrate all identifications with the vicissitudes of the libido, with the aptitudes developed out of endowment, and with the opportunities offered in social roles. The sense of ego identity, then, is the accrued confidence that the inner sameness and continuity prepared in the past are matched by the sameness and continuity of one's meaning for others, as evidenced in the tangible promise of a "career." (1950, p. 228)

The essence of this concept is that the formation of an individual's identity is a continual process of integration "located in the core of the individual and yet also in the core of his communal culture." In psychological terms, identity formation employs "a process of simultaneous reflection and observation, a process taking place on all levels of mental functioning" (Erikson, 1968, p. 22). This process is always changing and developing towards greater differentiation and becomes more inclusive as the individual becomes aware of increasing numbers of others significant to him.

Erikson ascribes identity formation to the work of the ego. He stated, "no other inner agency could accomplish the selective accentuation of significant identifications throughout childhood and the gradual integration of self-images which culminates in a sense of identity" (1968, p. 209). He differentiates between personal identity and ego identity:

The conscious feeling of having a personal identity is based on two simultaneous observations: the perception of the self-sameness and continuity of one's existence in time and space and the perception of the fact that others recognize one's sameness and continuity. What I have called ego identity, however, concerns more than the mere fact of existence, it is, as it were, the ego quality of the existence. Ego identity then, in its subjective
aspect, is the awareness of the fact that there is a self-sameness and continuity to the ego's synthesizing methods, the style of one's individuality, and that this style coincides with the sameness and continuity of one's meaning for significant others in the immediate community. (1968, p. 50)

Bourne (1978) described several psychoanalytic properties of ego identity: genetic, adaptive, structural, and dynamic. In a genetic sense, ego identity is described as a developmental product or outcome incorporating the individual's experiences over the other stages of the life cycle. According to Erikson (1980), ego identity is a "cumulative attainment of the inner capital accrued from all those experiences of each successive stage, when meaningful identification led to a successful alignment of the individual's basic drives with his endowment and his opportunities" (p. 94).

Ego identity may also be understood as an adaptive accomplishment or achievement of the individual vis-a-vis his social environment (Bourne, 1978). It is an adaptation of the individual's special skills, capacities, and strengths to the prevailing role structure of society. Erikson stated, ego identity "bridges the early childhood stages, when body and parent images were given their specific meaning, and later stages, when a variety of social roles become available and increasingly coercive (Erikson, 1980, p. 96). The roles and accompanying expectations that the individual is involved in, as well as anticipated roles, must be personally defined. Personal identity must reflect some of the value orientation of the individual's reference groups. The resolution of the search for identity is, therefore, the final step in the internalization of cultural values.
Identity also serves as an anchor point or stable frame of reference for the individual. Erikson considers identity an "evolving configuration. . . gradually integrating constitutional givens, idiosyncratic libidinal needs, favored capacities, significant identifications, effective defenses, successful sublimations, and consistent roles" (1959, p. 125). With an established identity, the individual can confidently enter society and assume responsibilities.

Finally, many of Erikson's statements, according to Bourne (1978), ascribe a dynamic efficacy to ego identity. Erikson (1968) stated, "whereas the ego carries on reality-testing functions in general, ego identity would test, select, and integrate the self-images derived from the psychosocial crises of childhood in the light of the ideological climate of youth" (p. 210). In addition, identity formation is conceived as a dynamic process distinct from "identification" processes per se.

Identity formation begins where the usefulness of identification ends. It arises from the selective repudiation and mutual assimilation of childhood identifications, and their absorption in a new configuration, which, in turn, is dependent upon the process by which a society identifies the young individual. (Erikson, 1968, p. 159)

In summary, Erikson proposes a psychological concept of identity that reconciles the individual's conception of himself with his community's recognition of him. Ego identity clarifies the self in relation to society, not simply as a configuration of intrapsychic self-representation, but as a sense of oneself defined in terms of a particular relationship to a certain group, community, or society (Bourne, 1978). It consists of an integration of earlier knowledge and
perception of the self, recognition of current skills, talents and resources, and adaptation to significant cultural forces.

Unsuccessful identity formation, according to Erikson, may result in role diffusion. In this state, the individual is unable to commit to any single view of self and is unable to integrate various assumed roles. The individual may be confronted with opposing value systems or by a lack of confidence in the ability to make meaningful decisions. In either case, the condition of diffusion arouses anxiety, apathy, and hostility toward the existing roles, none of which the person can adapt (Newman and Newman, 1978). To effectively cope with these feelings, the individual may seek membership in groups or identify with exaggerated roles or strong leaders because these give a secure structure to the diffuse feelings held.

Through the autobiographical writings of George Bernard Shaw, Erikson (1959) illustrates ego identity formation, in relation to achieving professional identity. At the age of twenty, Shaw experienced an "identity crisis" as a successful accountant, a role he detested. He noted that his success was in terms of the expectations of others, and that he had to change his occupation, to avoid the danger of success without identity. Allowing himself, what Erikson terms a psychosocial moratorium, Shaw prolonged the interval between youth and adulthood and found himself to be at home within the realm of his imagination. Here he felt "peace that comes when one accepts what one seems to be." Shaw's eventual professional identity as an author evolved from the experience of knowing himself. He was an individual who was what he did to live.

Erikson stated that "man, to take his place in society, must acquire a 'conflict free,' habitual use of a dominant faculty, to be
elaborated in an occupation; a limitless resource, a feedback, as it were, from the immediate exercise of this occupation, from the companionship it provides, and from its tradition" (1980, p. 118). Occupational or professional identity requires an intelligible theory of the processes of life, that is, an ideology.

Marcia (1966) identified ego identity status as a term to describe ways of coping with the identity crisis described by Erikson. Four identity statuses are defined:

1. Identity achievement -- individuals who have experienced a crisis period and are committed to an occupation and ideology;
2. Moratorium -- individuals who are currently in "crisis" and have vague commitments;
3. Foreclosure -- individuals who have not experienced a crisis, yet have firm, usually parentally determined commitments;
4. Identity diffusions -- individuals who have no apparent commitments.

Marcia's identity status is the most extensively used paradigm for empirical research on ego identity. Since the "identity crisis" described by Erikson occurs approximately between the ages of 18-22, research on the construct focuses on college students and has particular significance for those students in professional schools.

Marcia's original research (1966) found that, for males, identity achievement produces the strongest personality; identity foreclosure is a somewhat brittle and vulnerable resolution; and the psychological moratorium is a period of transition and flux between childhood and adulthood. Cross and Allen (1970) found that identity achieved subjects obtained the highest grade point averages. Since identity achievers are no higher in overall intelligence than the other statuses (Jordan, 1971; Marcia, 1966), their higher grade point averages are probably a function
of their greater stability and goal orientation (Orlofsky, 1978). Successful identity formation (achievement and moratorium subjects) is also related to greater ego strength (Marcia, 1966); better performance on concept attainment tasks under stress; less susceptibility to self-esteem manipulation (Marcia, 1967); more reflective decision-making styles (as opposed to impulsive) (Waterman and Waterman, 1974); higher levels of moral reasoning (Podd, 1972); a more internal locus of control orientation (Waterman, Buebel, and Waterman, 1970); and attainment of more satisfactory interpersonal relationships (Orlofsky, Marcia, and Lesser, 1973).

Research findings on the construct of ego identity suggests that for students to be successful in attaining the goals of higher education (achievement, autonomy, decision-making skills, etc.), they will have to resolve their "identity crisis." In turn, if a professional identity is to extend from a personal orientation, there is a need for planned educational strategies that will assist students in resolving their conflict.

Individuals with a sociological perspective on identity are not as interested in the interpersonal process by which it is formed, as is Erikson. Anselm Strauss, for example, focuses more on the "interaction that takes place between persons viewed as members of groups -- however subtle the character of their membership" (1959, p. 44). Identity, for Strauss, is the totality of roles which someone chooses in a certain situation. Motivation for that choice is directed without acknowledgement; neither is it correlated with substrata in the personality structure. Thus, from this viewpoint, identity is
related to a given situation in terms of the individual's set of ascribed, acquired, and/or achieved roles.

The concept of "role" thus becomes extremely important to the sociological perspective of identity. Linton (1936) defined role as the dynamic aspect of a status. Parsons and Shils (1951) stated, "role is that organized sector of an actor's orientation which constitutes and defines his participation in an interactive process. It involves a set of complementary expectations concerning his own actions and those of others with whom he interacts" (p. 23). Newcomb (1951) saw role as the manner of behavior which belongs to a position. Finally, Goffman (1961) described role as consisting of "the activity the incumbent would engage in if he were to act solely in terms of the normative demands upon someone in his position" (p. 85).

A wide body of social/psychological literature has evolved to describe the interrelations between self, role, and interaction to explain the complexities of human behavior. For example, Daniel Miller (1963) conceived the identity as being divided into three primary regions: core, subidentities, and persona. The core is a "primary self," a collection of concepts which are usually "formed earliest, lie closest to the center of the personality, and hence are the most difficult to change" (Hall, 1968). The persona is defined as a peripheral region, or the part of the identity that is exhibited to the world. In between the core and persona lies the subidentities. These are aspects of the identity relevant to particular social roles. The role, according to Hall (1968), represents the social stimuli, in the form of behavioral expectations; subidentity represents the individual's
perceptions of his unique response to these stimuli, conditioned by his core identity and other subidentities. Miller (1963) stated:

Each man has quite a number of subidentities. Most of the more important ones are delimited by the boundaries of specific roles. Some are the individual's own creation. Role and subidentity are similar in that both have attributes which are interpreted in terms of the group's norms. Role and subidentity also differ in a number of ways. Role refers to the minimum of attitudes and behaviors required for participation in the overt expression of the social position. A subidentity represents a cluster of all the attributes manifested by a person, not the minimal requirements for a position. A role can usually be played by a number of people; a subidentity, like a fingerprint, is unique to one individual. (p. 675)

Nelson Foote (1951) defined identity as the freedom to make independent judgments and the deferred satisfaction that comes with such independent judgment. A commitment to one's identity is the motivation to act. He stated:

Faith in one's conception of one's self is the key which unlocks the physiological resources of the human organism, releases the energy (or capacity, as Dewey would say) to perform the indicated act. Doubt of identity, or confusion, where it does not cause complete disorientation, certainly drains action of its meaning, and thus limits mobilization of the organic correlates of emotion, drive, and energy which constitute the introspectively-sensed "push" of motivated action. (p. 19)

The process of acquiring an identity is dependent on experience, coming from the absence of alternatives. The acceptance of the identity cast upon the individual arises from circumstances beyond control, or thought to be beyond control. The individual's accruing conceptions of who he is are usually taken by something verging upon ultimate reality rather than as ultimately arbitrary ascriptions by others. Of course, as soon as alternatives are encountered the individual is released from conscious bondage to any particular conception of himself. Henceforth,
his identities accrue from more conscious choice between limited alternatives and pursuit of the values he has discovered in his experience (Foote, 1951, p. 19)

Finally, George H. Mead's (1934) concept of "self-conception" contributes to the understanding of identity formation within a social environment. The term "role" refers to a cluster of related meanings and values that guide and direct an individual's behavior in a given social setting. Structure, on the other hand, refers to a cluster of related meanings and values that govern a given social setting. The individual in any given setting defines himself as well as other objects, actions and characteristics. The definition of self in a specific role and setting, Mead termed the "me." There is a defined "me" corresponding to each role and the collective perception of the individual's various "me's" are called the "I" or "self-conception." Mead distinguished the "I" and "me" as follows: "The 'I' is the response of the organism to the attitudes of the others; the 'me' is the organized set of attitudes of others which one himself assumes" (1934, p. 175). The individual has parts of himself which are reflections of his relationships with others, and which others can take the role of and predict fairly accurately how the individual is going to behave in the relationship (Rose, 1962).

In summary, the concept of identity has been discussed from both a psychological and sociological perspective. Erikson's concept of "ego identity" provides a sameness and continuity to one's definition or self-representation in terms of a particular relationship to a certain group, community, or society. From an interactionist perspective, the self is conceived as the sum total of an individuals' reflections,
perceptions, and cognitions of himself (e.g. Mead, 1934), which may or may not all be derived from social comparison or be entirely conscious (Bourne, 1978). From both perspectives, the concept of identity comprises the meaning of self in relation to the environment. Identity formation allows the individual to integrate previous experiences and perceptions of self to form a basis for adopting to cultural and societal expectations. It provides the motivation for action.

Identity Formation in Higher Education

Higher education has recognized the importance of developing students' personal identity during college. Chickering (1969) conceptualized seven vectors which contribute to students' development. Achieving competence in the areas of the intellect, physical and manual skills, and social and interpersonal interactions was the first vector. The second vector, managing emotions, was defined as becoming aware and then labeling the effect. The two major emotions with which students have difficulty are aggression and sex. Becoming autonomous is the third vector; its central theme is emotional, financial, and physical independence and the recognition that interdependence is the capstone of autonomy.

Chickering's fourth vector, establishing identity, was described as being more than the aggregate of all the other vectors. It is an inner consistency of values, emotions, beliefs and determinants of behavior. The fifth vector, freeing interpersonal relationships, builds on all the other vectors; it is evidenced by greater freedom and the likelihood to be spontaneous, accepting, tolerant of differences from self, intimacy, and individuality. Clarifying purposes is sixth; it requires integrating occupational, marital, socioeconomic, vocational, and
general life style goals. With such integration, life flows with direction and meaning. Finally, developing integrity is the last vector. It is the clarification of a personally valid set of beliefs that has some internal consistency and that provides at least a tentative guide for behavior. It includes development through these overlapping stages of humanizing values, personalizing values, and congruence of values and behaviors (Chickering, 1969). Higher education, therefore, attempts to develop a sense of identity composed of a sense of intellectual competence based on development of critical thinking abilities, a sense of autonomy derived from rational judgement, and a sense of commitment to continued cognitive learning and to the tolerance of diversity necessary in a pluralistic social system (Parsons and Platt, 1973).

Professional education, in addition, must achieve professional identity through the integration of the norms of the profession with the individual's self image. Merton, Reader, and Kendall (1957) stated that the acquisition of an identity as a physician is vital to the performance of that role. A professional role, in essence, is the expectations mobilized by the identity across situations. Professional identity formation is also a developmental process, following the same constructs set forth in personal identity attainment, at both adolescent and college levels. Clarification and stabilization of a professional identity is interdependent with achieving professional competence.

The development of professional identity has been studied in various fields. Most researchers agree it is a multistage process. Becker and Carper (1956) in a study of physiology, philosophy, and mechanical engineering students identified five phases: (1)
development of problem interest; (2) acquisition of a professional ideology; (3) investment; (4) internalization of motives; and (5) sponsorship. Zabarenko and Zabarenko (1978) divide the development of identity into two stages: (1) the development of a sense of ideal professional standards, and (2) the consolidation of an operational professional identity. Simpson (1967) identified three distinct phases nursing students experience while acquiring professional identity. During the first phase, the attention is shifted from the broad, societally derived goals which led to choosing the profession to the goal of proficiency in specific work tasks. During the second, certain significant others in the work milieu become the main reference group. Third, values of the occupational group are internalized and the behaviors it prescribes are adopted. These three phases may overlap, but in general they constitute a sequence.

The process by which professional competence and identity is achieved is referred to as professional socialization. Socialization is a continuous learning and social process as the student interacts with the environment. The burden on professional schools is to provide an environment that maximizes the development of competence and identity. Understanding how this process occurs can facilitate curriculum planning efforts.

**Professional Socialization**

Socialization is the process by which individuals acquire the knowledge, skills, and dispositions that enable them to participate as more or less effective members of groups in society (Brim and Stanton, 1966). The end product of socialization is the incorporation of group
values and norms into the individual's self-image. Socialization processes continue throughout life as individuals seek to assume new roles.

Professional socialization is seen as a special and important case of adult socialization (McKinney and Ingles, 1959) in which individuals acquire specialized knowledge, skills, attitudes, values, norms and interests needed to perform their roles acceptably in the group or groups in which they are or seek to be members (Bragg, 1976). Merton et al. (1957) stated:

socialization refers to the process through which he develops his professional self, with its characteristic values, attitudes and knowledge and skills, fusing these into a more or less consistent set of dispositions which govern his behavior in a wide variety of professional (and extra-professional) situations. (p. 287)

Successful professional socialization, therefore, results in the individual acquiring professional competence and identity.

Socialization is a learning process and learning takes place in a social environment of which the learner is an integral part. The learner not only responds to environmental stimuli, but actively shapes the environment. Goslin (1969) conceptualized this interaction in role-developmental terms. He stated:

A social role has been defined as the behavior expected of an individual occupying a given social position. In accordance with this definition, practically all social acts may be thought of as constituting role behavior in the sense that the individual actor is presumed to be responding to perceived legitimate expectations regarding his performance from significant others in his social environment. From this standpoint, socialization refers to the process whereby individuals learn to play various social roles necessary for effective participation in the society; that is, how they acquire the knowledge, skills, and dispositions that enable them to perform in accordance with the expectations of others as they move from position to position in the social order over time. (p. 6)
In the case of students, learning occurs through interaction with faculty, other students, the curriculum and general public. Symbolic interaction theory provides the theoretical bases for examining socialization.

**Symbolic Interaction Theory**

Symbolic interaction theory focuses on the meaning acts and symbols have for each other in the process of interaction. These theoretical formulations had their origins in America around the turn of the century in the writings of C.H. Cooley, John Dewey, J.M. Baldwin, W.I. Thomas and others. The most comprehensive formulation, however, was presented by George Herbert Mead in *Mind, Self and Society* (1934) (Rose, 1962).

Five basic assumptions about the nature of man guide symbolic interaction theory. First, man lives in both a symbolic and physical environment and can be "stimulated" to act by symbols as well as physical stimuli. A symbol is a stimulus that has learned meaning and value for the individual. Symbols are learned through interaction with others, and thus can be thought of as having common or shared meanings and values. Second, through symbols, man has the capacity to stimulate others in ways other than those in which he himself is stimulated. Man's communication involves role-taking, "taking the role of the other" (also referred to as empathy). In Mead's usage the term refers to that phase of the symbolic process by which a person momentarily pretends to himself that he is another person, projects himself into the perceptual field of the other person, imaginatively "puts himself in the other's place," in order that he may get an insight into the other person's
probable behavior in a given situation. Mead also differentiated between taking the role of "other" and "generalized other." He stated:

If the given human individual is to develop a self in the fullest sense, it is not sufficient for him merely to take the attitudes of other human individuals toward himself and toward one another... he must also, in the same way... take the attitudes of the organized social group to which he belongs. (pp. 154-155)

The third assumption states through communication of symbols, man can learn huge numbers of meanings and values -- hence, ways of acting -- from other men. Thus, it is assumed that most of an adult's behavior is learned behavior, and is specifically learned in symbolic communication with others rather than through individual trial and error, conditioning, or any other psychogenic process. Man's behavior is guided by his culture -- an elaborate set of meanings and values -- shared by members of a society. Hence, through learning of a culture, men are able to predict each other's behavior most of the time and gauge their own behavior to the predicted behavior of others (Rose, 1962).

The fourth assumption is symbols -- and the meanings and values to which they refer -- do not occur in isolated bits, but often in clusters, sometimes large and complex. The concept of role, for example, refers to a cluster of related meanings and values that guide and direct an individual's behavior in a given social setting.

Finally, the fifth assumption states, thinking is a process by which possible symbolic solutions and other future courses of action are examined, assessed for their relative advantages and disadvantages in terms of the values of the individual, and one of them chosen for action. Thinking is strictly a symbolic process because the
alternatives assessed are certain relevant meanings, and the assessment is made in terms of the individual's values. Rose (1962) stated:

In thinking, the individual takes his own role to imagine himself in various possible relevant situations. Thinking is a kind of substitute for trial-and-error behavior (which most animal species engage in) in that possible future behaviors are imagined (as "trials") and are accepted or rejected (as "successes" or "errors"). Thought can lead to learning, not through hedonistic rejection of errors or reinforcement of successful trials, but through drawing out deductively the implications of empirical data already known. (pp. 12-13)

In summary, symbolic interaction theory postulates that an individual develops a self-image as a regularized way of defining social situations with reference to himself. As the individual experiences social situations, his conception of self is developed by his imagination of the feedback from the environment with which he interacts and attached to this imagination is some sort of feeling. In other words, a person perceives himself through the ability to take on as his own the attitudes which others express towards him. These "attitudes of others" are sources of identities by which the individual can view himself as an object. Thus, a person may have as many identities as there are social relationships in which he engages.

The Social Learning Process

Symbolic interaction theory emphasizes the interactional processes through which socialization occurs rather than the learning processes through which socialization is achieved. Although this theory conceptualizes the learner as an active participant in his own socialization, acknowledgement is given that socialization involves both conscious and unconscious learning processes in which the socializee may
be viewed under varying circumstances as either an active or passive participant in the process of role learning and role enactment (Goslin, 1969, p. 12).

Bandura (1969) proposed a social learning theory that is consistent with a symbolic interactionists' position. In Bandura's theory, the terms "'identification,' 'imitation,' and 'observational learning' are employed interchangeably to refer to behavioral modification resulting from exposure to modeling stimuli" (Bandura, 1969, p. 219). Bandura proposes identification is learned through observation, which involves imagery formation and verbal coding of observed events. Modeling consists of four components: attentional, intentional, motoric reproduction, and incentive or motivational processes. In order to reproduce modeling stimuli, Bandura proposes that the individual must (1) attend to, recognize, and differentiate the distinctive features of the model's responses; (2) retain the coded modeling events over time through covert role-practice of modeled responses that produce rewarding outcomes; (3) utilize symbolic representations of modeled responses in the form of imagery and verbal coding to guide overt role performances; and (4) respond to favorable or reinforcing incentive conditions (Bandura, 1969, pp. 220-225).

Synthesizing the work of Bandura and others (Anderson, 1974; Aronfreed, 1969; Parsons, 1951), Bragg (1976) listed five steps in the socialization process from the viewpoint of the person being socialized:

1. observation - the identification of a role model;
2. imitation - the "trying-on" of the role model's behavior;
3. feedback - the evaluation of the "trying-on" behavior;
4. modification - the alteration or refinement of behavior as a result of evaluation; and

5. internalization - the incorporation of the role model's values and behavior patterns into the individual's self-image. (p. 7)

The process is continuous, in that evaluation can necessitate a search for new symbolic models through which new responses are acquired and existing repertoires of behavior are modified as a function of the attitudes, values and social responses that are exemplified behaviorally, or in verbally coded forms. This internal aspect of socialization illustrates the observational character of the socialization process. It depends both on the individual's powers of observation and on his cognitive and physical capabilities to imitate the behavior observed.

Review of Empirical Literature

Becker and Carper (1956) conducted interviews with graduate students in philosophy, physiology and mechanical engineering, from which they concluded that changes in professional identity resulted from students' interaction with three groups: the informal peer group or student clique, the apprenticeship relationship with professors, and the formal academic structure of the university, involving courses, grades, credits, and degrees. Each group generates characteristic kinds of experiences for the person and consequently creates a potential for change towards the development of an occupational identity. The researchers correlated five identified mechanisms producing changes in identity (development of problem interest and pride in new skills, the acquisition of professional ideology, investment, the internalization of motives, and sponsorship) to participation in each of the three groups.
The formal academic structure was found to influence students' investment in their career choice and development of problem interest through presentation of new materials and techniques. The acquisition of a professional ideology was closely related to participation in formal student groups and, secondarily, to classroom and informal participation with teachers. Internalization of motives was found to also operate primarily in clique and apprenticeship relations.

Socialization in professional schools has been studied extensively in various fields, particularly medicine and nursing. A review of this research can be organized according to the processes and outcomes of students' interaction with the three groups identified by Becker and Carper: the educational setting, faculty, and other students.

**Interaction with the educational setting**

Many aspects of the educational setting affect students, such as admission policies, facilities, and resources. The types of learning opportunities provided, evaluation methods, and feedback given to students, however, have the most direct impact on their professional development.

Huntington (1957), in a pioneering study in medical school, found the last two years of training, during which the student has extensive opportunities to enact the professional role, are critically important for the development of a professional identity. At each phase of medical training students' self-image varied as they interacted with faculty members, classmates, nurses and patients, each of whom had

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1The terms professional identity, self-image and self-concept are used interchangeably in the literature.
varying expectations of them. The opportunity to act in the role of "quasi-physician," interacting primarily with patients, facilitated a sense of "growing doctorhood." In addition, subjective feelings of "success" also contributed to the development of a professional self-concept. Using the degree of difficulty in adequately meeting patients' problems as a variable, Huntington reported that 45 percent of first year students who had little or no difficulty in handling patients' problems felt more like doctors than students, while only 25 percent of those who had a fair or considerate amount of difficulty felt like doctors. Horowitz (1964), in his intensive case studies of medical students, found subjects to be aware of their growth in knowledge and skills, and able to identify insight-producing experiences occurring in both clinical and classroom settings. In addition, Hammond and Kern (1959) reported that in the opinions of their students, knowledge of psychological and sociological issues had been improved by the medical curriculum.

Kadushin (1969), in a study of music students at the Julliard and Manhattan Schools of Music, found the professional self-concept is developed through actual participation in the activity that means the most to musicians: professional performance. Using multivariate analysis of the effects of professional activity and music school, he found both variables interact and contribute to the development of the professional self-concept.

Adams and Kowalski (1980) studied art students. They also found the degree of artistic experiences provided had a significant and independent effect on professional identity, as well as did the number of credit hours in art.
Thielens (1965), in a study of law students, found experience within law school, such as receiving high grades and being consulted by other students contributed significantly to the establishment of a professional identity. These experiences in turn seemed to affect a student's perception of future success in law. Lortie (1959) also studied law students. He found student contact with actual practice essential for a full recognition of the self in the role one is to play. "I wasn't prepared" was the common reply to his questionnaire regarding law school preparation for practice. Lortie concluded that the socialization of lawyers occurs after graduation from law school.

Similar to Lortie's study in law school, studies of graduating seniors or graduates in practice of other professional schools provide information on the perceived adequacy of the programs. For example, Lyden, Geiger, and Peterson (1968), in a study of 1,771 graduates of public and private medical schools, revealed 44.1 percent were dissatisfied with the education they received. The specific items stressed in their criticisms centered chiefly on the need for more emphasis on economics and administration, and on clinical training.

Schwanke (1980) reported follow up studies in teacher education revealed graduates perceive preservice education as inadequate for handling discipline problems and too heavily weighted in theory and insufficient in practice application. Student teaching was perceived as the most valuable experience in the program.

Fuller (1969) extensively documented concerns of education students as they prepared for teaching careers. She began her research by conducting counseling seminars designed to provide student teachers an opportunity to discuss the problems they were facing as they moved
through their student teaching experience. She found that students' concerns shifted during the experience and these shifts corresponded to Maslow's hierarchy of needs; early concerns tended to focus on security needs while later ones dealt with task-related and self-actualizing needs. Fuller's study and others in teacher education (Hall and Jones, 1976; Shelley, 1978) consistently report that beginning teachers are primarily concerned with their own survival. No research was located that related these concerns of self-survival to the degree to which a professional identity had been achieved. Packard, Schwibel, and Ganey (1979) conducted a similar study in nursing education. The major difference in nursing students as opposed to students of education is their early involvement with clients in the clinical setting. The researchers found students had both task-related and self-related concerns. A significant number of students felt unprepared and incompetent as clinicians. The researchers suggested this problem could be partly remedied if faculty members begin to relate to advanced students more as professionals than as students and include an internship program whereby senior students would be able to apply knowledge and skills in a clinical setting for an extended period of time, still under clinical supervision.

The development of a professional self-concept has also been studied in graduate school. Pavalko and Holley (1974) used professional role-enactment, exposure to graduate school, perceived success, career expectations, and autonomy as independent variables. Their findings support the conclusions of previous research regarding the contribution of opportunities to enact the professional role, exposure to schooling, and perceived success in professional tasks to the development of a
professional identity. Autonomy was not found to have a strong independent effect on self-concept, but did interact with role-enactment, exposure, and perceived success, suggesting it can be an important contribution to identity formation. Mechanic (1962) studied graduate students preparing for their doctoral examinations. His data established these exams as a transition rite, in terms of their symbolic meaning and the students' ritualistic means of preparing for them. Hall (1968) found following exams, doctoral students perceived themselves as being more similar to professors than they had been before, the greatest change occurring in the area of intellectual competence.

The types of changes that occur during the socialization process have also been studied. These focus primarily on changes in attitudes, values, role conceptions, and personality.

Hoy and Rees (1977) studied changes in students' bureaucratic orientation, pupil control orientation, and dogmatism after the student teaching experience. They found that although students' basic belief systems were not modified, important changes in orientation did occur. Their bureaucratic orientation towards conformity, impersonality, subordination, and loyalty to the organization increased and they became significantly more custodial in their pupil orientation. Jacobs (1968), with a sample of 1,007 teacher education students in both initial professional education courses and the student teaching experience, found that significant changes in attitudes related to the teacher's social role occurred in both phases of the teacher education program. Students in the initial courses moved away from more rigid and formalized attitudes toward a more liberal and democratic point of view, while student teachers' attitudes changed from the more liberal and
democratic viewpoint toward a more rigid and formal one. Changes during the student teaching experience were related to the cooperating teacher and the students' perception of the experience.

Corrigan and Griswold (1963) also investigated attitude changes of student teachers during their student teaching experience. The sample consisted of fifth year pre-service childhood education students at Teachers College, Columbia University and New York University. Attitude change was assessed in relation to three principles of education: (1) the learner's purposes are recognized and utilized; (2) the learner engages in problem-solving; and (3) the learner is helped to develop generalizations which can be applied in a variety of life situations. Findings indicated that the student teaching experience did contribute to attitude change; however, the direction and amount of change were related to the quality of the experience. Quality was defined as the extent to which the student teacher perceived the college supervisor, cooperating school, and cooperating teacher to be implementing the three principles. If the student teacher perceived the principles were being contradicted, he/she became undecided about their soundness rather than feeling more strongly about them.

Becker and Greer (1958) studied the fate of students' early idealism about medicine as they progressed through school. Through participant observation with students in all four years, in all courses and clinical work, they concluded that the students' original idealistic views of medicine are a "reaction against the lay notion, of which they are uncomfortably aware, that doctors are money-hungry cynics; they counter this with an idealism of similar lay origin stressing the doctor's devotion to service" (p. 55). Their idealism becomes less of a
focus after entering school, with their priorities being on succeeding academically and more of a cynical attitude develops towards the school experience. The researchers believe this is a protection from their earlier grandiose feelings about medicine by postponing their exposure to reality to a distant future. As the future approaches, near the end of the four years, and its possible mistreatment of their ideals moves closer, the students again worry about maintaining their integrity, this time in actual medical practice. Thus, the beginning idealism of the entering student was replaced by expediency and utilitarianism and as graduation approached a more knowledgeable and informed idealism emerged.

Reissman and Platou (1960) also studied medical students' attitudes towards medicine. They identified three student types according to the reason given for choosing medicine as a career: Scientists -- those primarily interested in science; Professionals -- those interested in the prestige, rewards, or security of the profession; and Humanitarians -- those motivated by a humanitarian desire to help people. Junior and senior students were classified by these types and were then questioned with regard to (1) adjustment to the procedures of the hospital, (2) conceptions of the roles they as students encountered, and (3) attitudes toward medical careers. Senior students were found to be more self-reliant, more independent, and confident than junior students with the Scientist being the most self-assured of the group and the Professional the least self-assured. In relation to roles, seniors were more sophisticated in their attitudes towards patients and cynical towards nurses. The researchers explain this may be a reaction against the academic features of their training. Finally, Reissman and Platou
found a high correlation between the reasons given for entering medicine and the attitudes toward medicine as a career. The Scientists found their greatest discovery to be that medicine contains more gaps in knowledge than they expected while the Humanitarians found people were harder to help than they perceived. Approximately one-quarter to one-half of the students maintained the same attitudes from the beginning of school to graduation. Within dental school, Quarantelli, Helfrich, and Yutsy (1964) found also that attitudinal differences which had existed at entry remained at the completion of the program.

Nursing has also studied professional socialization extensively. Davis and Olesen (1964) studied changes in students' images of nursing after their first year in school. They found a pronounced trend towards individualistic and innovative images of nursing and away from bureaucratic images. A minor and inconsistent trend away from lay images of nursing was also found. Brown, Swift, and Oberman (1974) replicated the Davis and Olesen study and found consistent results. Their data lent support to the Davis and Olesen assumptions that collegiate nursing students everywhere are recruited from a common pool of applicants, similar in social background, aspirations, and beliefs; that collegiate nursing programs everywhere subscribe to similar philosophies; and that the impress of collegiate nursing programs on students is consistent.

Beard and Pishkin (1970) hypothesized that senior level medical and nursing students would experience a reduction in discrepancy between self and ideal self on certain interpersonal personality dimensions.
during their fourth year of formal study. A pre-posttest design, using the Leary Interpersonal Check List, revealed a significant tendency by all students to perceive self as less dominant than ideal self. Although the authors make no attempts to relate the findings to the formation of a professional identity, it can be speculated that the perceived need to be dominant in a professional role was not achieved during professional schooling. Rein (1977) replicated the study and obtained consistent results. Using the Personal Orientation Inventory, Gunter (1969) studied self-actualizing values of sophomore nursing students. She found, at this level of professional training, students had not yet reached emotional maturity or a high level of self-actualization. Students were characterized as inefficient in the use of time, as less inner-directed and more other-directed, possibly indicating a tendency toward external conformity a conformity to the mores of the peer group. They are more dependent on the views of others than they are independent and self-supportive. Kuhn (1960) studied changes in self-attitudes among law, social work, dental and nursing students. Using the Twenty Statements Test of Self-Attitudes he found that the importance of the professional role increases steadily with each year in a professional school. Senior dental students made the largest number of statements having to do with ambition and success while students in nursing made the fewest.

Finally, personality changes during professional education have been studied. Hutchins (1962) reported students from 26 medical schools had significant increases on the scales for autonomy and aggression in the Edwards Personal Reference Schedule and significant decreases on the scales for deference and intraception (i.e., psychological-mindedness).
Kogan, Boe, Gocka, and Johnson (1966) surveyed psychiatric residents five times over a three-year period and found consistent drops in scores on a factored labeled benevolent leadership and a consistent gain in scores on a factor titled self-aggrandizement. Schofield (1953) compared freshmen and junior medical students on the Minnesota Multiphasic Personality Inventory (MMPI) and found 5.4 percent of the freshmen to have their highest score on the Pd (psychopathic deviate) scale as against 19.8 percent of the juniors. Harvill (1981) administered the Survey of Interpersonal Values (SIV) to students upon entrance to medical school and again 5 to 11 months later. He found an increase on the independent and support scales and decrease on benevolence and leadership in relationships with others. Gough and Hall (1973), using the California Psychological Inventory (CPI), also studied personality changes in medical school. They administered the instrument during the last year of premedical education and again at the time of graduation from medical school. Eight of the 18 scales differentiated significantly between students as applicants and as graduates. As graduates, students scored significantly higher on only one scale -- flexibility; significantly lower scores were attained on the scales for dominance, sociability, sense of well being, responsibility, socialization, good impression, and achievement via conformance. There was a moderate although not significant rise in the score on achievement via independence. These shifts toward greater adaptability and independence and lesser regard for convention and social expressiveness are consistent with findings of other investigators.

In summary, research indicates that the nature, quality and frequency of clinical experiences that enable students to enact the
professional role contribute to the development of professional competence and identity. Students feel generally unprepared clinically upon graduation and are primarily concerned with "survival" in their first job. They desire more clinical time during their educational program. Positive feedback on role performance, high grades, and the number of credit hours in professional studies also contribute to professional development. In graduate school, qualifying examinations have a symbolic meaning in the transition from student to professional.

The types of changes that occur during the socialization process were also reported. These are primarily concerned with changes in attitudes, values, role conceptions, and personality. The student teaching experience increases students' bureaucratic orientation toward conformity, impersonality, subordination, and loyalty to the organization while idealism in medical school was replaced by expediency and utilitarianism until graduation when a more knowledgeable and informed idealism emerged. Attitudes toward medicine, dentistry and the military as a career were not found to change significantly as a result of schooling. In nursing, however, images of the profession shifted from a bureaucratic orientation to a more individualistic and innovative one after the first year of schooling. Although self-actualizing values are not developed early in professional education there is an increase in the importance given the professional role. Personality changes were also found to occur during schooling. Generally students achieve feelings of independence and became more adaptable to their environment.

Interaction with faculty

Hebert Hyman (1942) used the term reference group to increase understanding of how an individual forms a conception of his status or
position in society. A reference group to which an individual does not yet belong can serve as a powerful, influencing factor provided the person perceives that group to be one in which he would seek acceptance and approval (Lum, 1978).

Several types of reference groups are identified in the literature. Comparison groups are groups, collectivities, or persons that provide a person with standards or comparison points that can be used to make judgments and evaluations (Kelly, 1965). The role model was proposed by Kemper (1968) as one type of comparison group. The role model is generally viewed as an individual who possesses certain skills and displays techniques that the person lacks and from whom, by observation and comparison with his own performance, the person can learn.

Faculty serve as role models in professional education. They transmit their attitudes, values, and behavioral norms both formally, through their established structure and courses, and informally through individual advising, informal contacts, and social activities. Bragg (1976) stated:

> While the catalog informs the student of a program's structure by outlining its goals and its dominant values, the faculty members are the primary socializing agents for the neophyte professional. (p. 19)

Merton, Reader, and Kendall (1957), in their intensive study of medical schools stated, "medical students choose a figure in the profession, as a model to imitate and an ideal with which to compare their own performance" (p. 137). Becker and Carper (1956), in their study of physiology, philosophy, and mechanical engineering students, found no physiology student entered the department irrevocably committed to the notion of becoming a physiologist. However, a commitment to the
field was strengthened through the informal apprentice relationship with faculty. They stated:

[He]. . . is often able to model his behavior after that of a professor or of an ideal constructed of the characteristics of several professors, learning through observation of them the kind of tasks which physiologists in fact perform. . . . Frequently, he is deliberately groomed by the professor for some particular type of job. . . . (p. 292)

Schein (1967), in a study of management students, also found there was a clear trend toward the adoption of faculty attitudes which were away from prevailing executive attitudes. Quarantelli, Helfrich, and Yutsy (1964), however, found no clear evidence that dental students adopted faculty attitudes during their first year of schooling. Baker (1964) randomly sampled nursing students and faculty on attitudes towards patient care practices. She found students become more independent in their attitudes towards patient conformity, authority of nurse, sympathetic feelings of nurse and equalitarian relationship between patient and nurse, but maintained conformity with faculty in attitudes concerned with patient independence of nursing care, and punishment or rejection of patients for not conforming to care practices. Gliebe (1977) found nursing students adopted the attitudes of their faculty regarding autonomy and rejection of traditional role limitations as they progressed through school. Attitudes towards patients' rights were not influenced by the faculty. Kramer (1967) found that neophyte student nurses used popular concepts of nurses as role models upon entering nursing school, looked to teachers as they progressed through the program, and finally shifted to staff nurses after graduation. The findings of these studies support the claim that faculty do act as role models and transmit attitudes and values to students in professional schools.
The process by which faculty socialize students has also been studied. Strauss (1959) likened the mentor role to that of "a coach."

He stated:

> A coaching relationship exists if someone seeks to move someone else along a series of steps, when those steps are not entirely institutionalized and invariant, and when the learner is not entirely clear about their sequences (although the coach is). (p. 110)

Strauss identified four "crucial tactics" in the coaching process. First, prescription or the establishment of a step-by-step plan or routine and second a time schedule by which each step is to be completed. The third tactic is the use of challenge to motivate the student and finally, the mentor may use accusation or reprimand.

Olesen and Whittaker (1966) identified two other teaching techniques for faculty to assist students in assuming the professional role, the use of laughter and silence. In a study of baccalaureate nursing students' interaction with faculty during post-clinical conferences, these techniques were used to adjudicate "identity errors."

The adjudication cycle begins with a student's statement as to his/her role awareness in a particular situation. If the student is in error, that is, if the claim is not justified because the behavior is not congruent with professional norms, then the claim is followed by realignment wherein the student is set straight by either the faculty member, the peer group, or both. Both laughter and silence are used to make the student aware that an identity error was made, so that realignment can take place. Laughter provides criticism and acceptance simultaneously, allowing the student to conform to both student and faculty norms through interaction. Silence, on the other hand, does not allow for interaction, thus makes realignment more difficult.
Gottlieb (1961) studied the process of socialization in graduate schools. A total of 2,842 students from 25 graduate schools who offered the Ph.D. in the "traditional arts and sciences" participated in the study. Each of the respondents was asked a set of questions dealing with specific things they had been told by faculty. These responses were categorized by the degree of encouragement faculty offered students in different areas, such as research or teaching. The researchers found that students were likely to direct their careers and interests based on the type of encouragement offered by faculty. Thus, in graduate school, faculty have a significant effect on students' career choices.

Recognizing the significance of faculty as socializing agents, some researchers have examined the effect of the consistency of faculty cues in different academic departments or schools. Ondrack (1975) studied the shift in attitudes and values of nursing students in relation to cue consistency offered by role models. Comparing two schools of nursing, he found the school with the most consistent attitudes and role model cues for students evidenced the greatest socialization, while the school with the least consistency evidenced the least shift in attitudes and values. Tetreault (1976) also studied nursing students' interactions with faculty. She found when faculty's professional attitudes were high, students had significantly higher professional attitude scores. The Davis and Olesen (1964) study, previously described, also found that faculty do exert a significant influence on the images and self-values that students acquire in nursing. However, they note "such influence is far from uniform" (p. 13).

Finally, the informal interaction among students and faculty has also been studied. Mix (1971) identified four types of interaction by
setting and by purpose that occur in graduate school: (1) departmental space -- in which a desk is allocated to students which increases their access to faculty members and informal exchanges of all types and allows them opportunities to assess faculty behavior, attitudes, and values on a daily basis; (2) student participation in faculty meetings and on faculty committees; (3) student participation in professional meetings and joint publication with faculty; and (4) student-faculty social events. Active participation in these interactions fosters the students' feelings of acceptance or belonging and provides an atmosphere conducive to the identification of appropriate role models. The degree to which these types of informal interactions occur in professional schools varies from profession to profession.

In summary, evidence indicates that the interaction between faculty and students, both formally and informally, serves as a basis for the transmission of attitudes, values, and behavioral norms. The nature of these transmitted attitudes and values varies based on the faculty's commitment to them. Consistency among faculty groups as to the values and attitudes to be achieved and a perceived feeling of collegiality by the student is necessary for successful socialization.

Interaction with students

Students, during the course of their educational experience, come to know one another and develop common understandings about those interests and activities they share as students and establish working agreements as to what constitutes proper and reasonable behavior in this role. These collectively shared values and norms of behavior are referred to as the student culture.
Chickering (1969) stated:

The student culture defines the acceptable working arrangements between student and institution. It sets the framework for attitudes and activities with which the student responds to the opportunities and frustrations, the freedom and constraints, the ideals and the disillusion, provided by the institution. The student culture interprets to the newcomer the range of deviances tolerated and the likely consequences of stepping out of bounds. The culture may carry values and emphasis of its own, distinct from or in opposition to, those of the institution; or it may go beyond the faculty and administration in endorsing and acting on values to which the institution ascribes. Thus, student culture has substantial impact on student development. (p. 155)

Becker (1964) likens the collective character of the student culture to the development of folkways. Members of a group, who share common situations or problems, will experiment with possible solutions to those problems and report their experiences to their peers. In the course of their collective discussion, "the members of the group arrive at a definition of the situation, its problems and possibilities, and develop consensus as to the most appropriate and efficient ways of behaving" (p. 47). After consensus is reached, activities of the individual members are contained to the established norms.

Clark and Trow (1966) identified four types of student cultures that operate in college, which they label academic, nonconformist, collegiate, and vocational. The academic and nonconformist groups are both intellectually oriented. However, the academic group links their interests with the official curriculum versus the nonconformist group who pursue their interest outside it. The collegiate and vocational groups are oriented more towards activities which focus on social life and extracurricular activities.
Feldman and Newcomb (1969) summarized the functions these student groups perform in college:

1. assist the individual student through the crisis of achieving independence from home;
2. support and facilitate the academic-intellectual goals of the college;
3. offer general emotional support to the students; it fulfills needs not met by the curriculum, the classroom, or the faculty;
4. provide for the student an occasion for practice in getting along with people whose background, interests, and orientation are different from his own;
5. through value reinforcement, can provide support not changing and can challenge old values; can provide intellectual stimulation and act as a sounding board for new points of view; and present new information and new experiences to the student, help to clarify new self-definitions, suggest new career possibilities; and provide emotional support for students who are changing;
6. offer an alternative source of gratification and of positive self-image, along with rewarding a variety of non-academic interests, for students who are disappointed or not completely successful academically;
7. provide personal ties that may reappear later in their post-college careers. (pp. 236-237)

Fife (cited in Bragg, 1976) noted that the importance of the student peer group in the socialization process increases when the number and availability of other role models decreases. Therefore, strong student cultures would be expected in schools where student-faculty interaction outside of class is low and where the student-faculty ratio is high so that faculty members address groups of students rather than individuals.

Becker, Greer, Hughes, and Strauss (1961) conducted an ethnographic study at the Kansas University Medical School. They describe the process by which students, at various points in their progress through
school, see and solve the immediate problems of dealing with their teachers and the tasks they assign. First the student attempt to handle the information and assignments alone. As they realize they can't learn everything, they join their peers in an effort to determine "what the faculty expects of them." The students use various methods for determining which knowledge and skills will be given most attention and which will be neglected. Thus, the students set their own norms of performance. Becker et al. concluded that in essence medical school trained students to be students. Assuming the professional role does not occur largely because the system they operate in does not allow them to do so. They are not doctors, and the recurring experiences of being denied responsibility make it perfectly clear to them that they are not. Though they may occasionally, in fantasy, play at being doctors, they never mistake their fantasies for fact.

In summary, the student culture has a significant impact on students' professional development. It defines the appropriate responses to institutional authority and the accepted mores of interaction with faculty. Thus, it may facilitate or limit the development of competence and identity.

Implications for Professional Curricula

The theoretical and empirical literature suggests that professional competence and identity is achieved through interaction with the environment, through which the individual develops a self-image as a regularized way of defining social situations with reference to self. This learning process is achieved by observation of and identification with "modeling stimuli." In professional schools modeling stimuli are
provided from three sources: the educational setting, faculty, and students. The strength and interaction of each of the stimuli have a determinate effect on professional outcomes (Figure 1).

Research findings indicate that faculty and the student peer group exert a strong, if not the strongest, influence on the professional student. If however, there is no consistency among faculty or discrepant expectations between faculty and the student group exist, the individual will question the relevancy and meaning of the "professional self" he/she is trying to achieve. Those being socialized find that different audiences expect them not only to do different things ("role conflict"), but to be different. In essence, this aspect of the socialization process operates via the hidden curriculum design. Benson Synder stated:

Every school has a cluster of adaptive patterns associated with academic success. . . . Because the hidden curriculum encourages certain solutions to educational and personal problems, because it provides one type of encounter and not another between students and faculty at a particular school, it has a significant influence on the students' adaptive response to their education. This relationship between adaptive pattern, cognitive, and the ultimate use students make of their education is what underlies the importance of the hidden curriculum at any school. (1971, p. 109)

The significance of the hidden curriculum cannot be ignored. As Snyder analogized, "it grows like a weed in a well-cultured educational garden" (p. 167). However, given the implications achieving professional competence and identity has for effective practice, the formal curriculum design must be strengthened to insure these constructs are achieved.
Figure 1. The Professional Socialization Process. The strength and interaction of each stimuli has a determinate effect on professional outcomes.
Effective professional practice has been defined as the ability to translate perception and thought into meaningful action. This requires the confluent achievement of both professional competence and identity in order to enact the professional role. Empirical evidence on the process by which these constructs are achieved suggests that inconsistent and discrepant cues thwart the individual's professional development, resulting in role diffusion or the inability to make a commitment to any single view of self or integrate various assumed roles. The condition of diffusion arouses anxiety, apathy, and hostility toward existing roles, none of which the person can adapt, and thus professional practice is compromised.

Professional education must carefully examine how both professional competence and identity can be achieved during the educational experience. This requires thoughtful, creative curriculum planning based on value judgments and empirical evidence from the psychological, sociological, professional and educational literature. Dwayne Huebner (1966) stated:

The study of curriculum is really the heart and soul of the study of education. All of man's knowledge, wisdom and skill is required to build a just educational environment. The study of curriculum can be and should be a great liberal and liberating study, for through it the specialist must come to grips with the great social and intellectual problems of today. (p. 112)
Plan of the Chapter

The concepts of professional competence and identity were theoretically defined and the process of socialization empirically reviewed in Chapter II. Conclusions drawn from that review point to the need for a reconceptualized view of curriculum in order to insure full professional development. This chapter proposes a theoretical paradigm that addresses confluent achievement of professional competence and identity through the identification of supporting concepts. In presenting the paradigm each concept will be defined and its unique and interdependent contribution to the professional role will be demonstrated. In turn, each concept serves as a major thread for professional curricula, to fulfill the goal of achieving professional competence and identity.

In order to effectively plan a curriculum using this paradigm, available research on how each of these concepts relates to professional practice and how they are developed will be reviewed. The evidence is drawn from a variety of disciplines and professions in search of valid and reliable findings upon which to make generalizations and assumptions about professional curriculum development.

The Paradigm

A theoretical paradigm of professional practice is presented in Figure 2, the goal of which is to direct professional curriculum development. The paradigm is holistic in nature in which the concepts are interdependent and interrelated to one another. Although the parts and processes must be isolated for analytical purposes in this study, they cannot be understood without reference to the dynamic unified whole
Figure 2. Theoretical Paradigm for Achieving Professional Competence and Identity for Effective Professional Practice
that is more than their sum. For example, exercise of judgment cannot be valid unless based upon knowledge of subject matter or critical thought; creativity and problem solving yield novel, innovative solutions, within standards and values set forth by the individual in relation to practice (integrity); and empathy guides professional relationships but requires interpersonal behavioral skills to be effective. Thus, the paradigm offers a harmonious blend of the theoretical-technical and intrapersonal bases for professional practice.

The interrelated dimensions of professional competence and identity are analogous to George H. Mead's concept of the "I" and the "me." "The 'I' is the response of the organism to the attitudes of the others; the 'me' is the organized set of attitudes of others which one assumes" (1934, p. 175). Professional competence relates to the concept of the "I." It represents the individual's action within a social situation, the active, assertive, and emergent features of human behavior. The "I" is the active agent of the personality -- that which does the thinking, the knowing, the planning, the acting. The "me," like professional identity, is all the perspectives the individual has of oneself. It is the organized cognitive frame of reference through which the mind appraises, evaluates, and monitors the ongoing thought and action of the "I."

Taken together, according to Mead, the "I" and the "me" constitute a personality as it appears in social experience. If the self did not have these two phases "there could not be conscious responsibility, and there would be nothing novel in experience" (p. 178). In the same way, competence and identity are two necessary phases of the professional self.
Professional Competence

Professional competence includes both cognitive and behavioral aspects. Existing professional curricula have been designed primarily from a competency base and entrance into a profession is dependent upon demonstrating mastery of these competencies through licensure and certification procedures. Therefore, behavioral skills and discipline knowledge unique to each profession are a necessary component of the curriculum. Competence, however, requires certain process skills that enable the professional to apply, manipulate and utilize acquired knowledge and skills in varying situations. Professional education in essence is preparation for uncertainty and less evidence is available that professional schools are achieving this goal. Students consistently report they feel unprepared clinically upon graduation and are primarily concerned with survival in their first job.

Four concepts relevant to the effective use of professional knowledge and skills are identified: critical thinking, problem solving, judgment, and creativity. For clarity, each of these concepts is described:

Critical thinking. Critical thinking involves (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods. Critical thinking calls for a persistent effort to examine any belief or form of knowledge, and the ability to recognize unstated assumptions, appraise evidence, evaluate arguments and arrive at well-founded conclusions (Glaser, 1941).
Problem solving. Problem solving is the systematic process through which decisions are made. Problem solving requires selective trial and error. A decision is made as to which path to try first and what data are promising. When sources are examined from which the problem solving system derives its selectivity, that selectivity can always be equated with some kind of information feedback from the environment. Given a desired and an existing state, the task of an adaptive organism is to find the difference between those two states and the correlating process that would erase the difference. The task is to discover a sequence of processes that would produce the desired goal from the critical state. The activity of human problem solving is a form of means-to-an-end analysis aimed at discovering a process description of the path that leads to a desired goal (Simon, 1969).

Judgment. Judgment is the evaluation or categorizing of an object of thought. It allows the individual to cope with, or adapt to, uncertainty by mediating between the person and the environment. "It provides the psychological means of going beyond perceptual and cognitive givens, while maintaining organization and continuity in behavior" (Rappoport and Summers, 1973, p. 4).

Creativity. Creativity is a demonstrated capacity for innovations in behavior or real reconstruction of "reality." It involves the ability to develop fresh perspectives from which to view all accepted routines and to make novel combinations of ideas and objects and so define new goals, endowing old ones with fresh meaning and inventing means for their realization (Foote and Cottrell, 1955).
Professional Identity

The development of professional identity is interdependent with achieving competence. However, it is not simply an aggregate ability to master subject matter, think critically, problem solve, or be creative. R.W. White (1958) stated:

identity refers to the self or person one feels oneself to be. . . . Gradually, the sense of identity becomes a fuller and richer establishment, compounded of bodily sensations, feelings, images of one's body, the sound of one's name, the continuity of one's memories, and an increasing number of social judgments delivered through the words and behaviors of others. (p. 332)

According to Erikson (1950), identity is "The accrued confidence that one's ability to maintain inner sameness and continuity is matched by the sameness and continuity of one's meaning for others" (p. 135).

Professional identity is an extension of personal identity. Establishing an identity gives purpose and meaning to the professional role by guiding the individual from "within" self. It provides motivation for and reflection on one's actions. It allows the personalization of values and beliefs, gives independence and self reliance, and promotes the ability to develop meaningful, interpersonal relationships with clients. Without an achieved sense of professional identity, professional practice becomes a mechanistic, technical enterprise that provides little satisfaction or self-actualizing rewards for either the client or the professional. A recent article in the Miami Herald (Sept. 17, 1982) on the first year of medical school illustrates this point. A dialogue between a doctor and student was reported by the student as follows:
One doctor was doing a neurological exam on a stroke patient, who sometimes cannot help expressing emotion. I asked if the woman's crying was related to her [condition]. He said "no". I asked, "Why didn't you ask her why she was crying." He said, "That's not what we're here for!" (P. 2c)

The concept of identity has not been emphasized in professional curricula. Research demonstrates that the major portion of the professional curriculum contributing the most to identity development is the opportunity to enact the professional role through clinical experiences. Modeling stimuli are present in these settings from a variety of sources, again leaving the student vulnerable to discrepant cues. Evidence also suggests attitudes and values are directed towards a more bureaucratic orientation in these settings with little evidence of any attitude changes occurring in classroom, or pre-clinical settings. The most encouraging research reports students do achieve feelings of independence and become more adaptable to their environment as a result of their schooling experience.

The intrapersonal domain of professional practice can be developed by incorporating four concepts that support the formation of professional identity: integrity, autonomy, empathy, and self-efficacy. Each is described as follows:

**Integrity.** Integrity consists of valid, internally consistent beliefs that provide at least a tentative guide for behavior based on the moral and ethical constraints of the profession. M.B. Smith (1963) stated:

> Personal values pertain to the desirable, the preferable, rather than to merely desired or preferred; the realm of "ought" rather than that of "is" of "want." . . . The cue words are "right," or "wrong," "better," or "worse." All these words carry for use the connotation that standards apart from personal whim are being applied. . . . (pp. 332,334)
Integrity, therefore, involves "the development of standards (values) by which one appraises himself and in terms of which self-esteem varies as a consequence of the appraisal. This definition gives a central place not only to the content of values but to the way they are held and their salience with regard to behavior and self-appraisal" (Chickering, 1969, p. 124).

**Autonomy.** Autonomy is personal liberty of action and implies independence, self-reliance, freedom of choice, and the ability to make decisions. An autonomous individual is both self-directed and self-controlled in actions taken. Engel (1970) stated:

In his relationship with his client, the professional is usually expected to be autonomous with such factors as responsibility, communication, and innovation, if he is to provide adequate service. . . . He assumes the responsibility for his client's welfare because he is more knowledgeable and is acting in his client's behalf. He defines the problem, determines procedures, and is accountable for the adequacy of his services. (p. 12)

Professional autonomy, therefore, is the perceived authority to define and decide what professional services to render and what contributes to safe and effective practice.

**Empathy.** According to symbolic interaction theory, empathy is taking the role of the other or the ability to enter into the life of another person; to accurately perceive current feelings and their meanings. Empathy in a professional relationship adds a dimension of real understanding between the participants. Bachrach (1976) stated that, "empathy guides the therapist's interventions both in terms of the content of his communications and their timing, wording and feeling, including knowing when it is best to remain silent" (p. 36). Rogers
(1975) similarly identifies empathy as one of the most important aspects of the helping relationship.

**Self-Efficacy.** Self-efficacy refers to (1) the individual's desire to produce an effect on the environment; (2) the added goal of dealing effectively or competently with the environment; and (3) the resulting feelings of efficacy (or inherent pleasure) (Hunter, 1978). It is concerned with how well the professional can organize and execute courses of action required to deal with prospective situations that contain many ambiguous, unpredictable, and often stressful elements (Bandura, 1981). Efficacy provides the motivation for professional action.

In summary, the need for professional education to address both the development of competence and identity has been demonstrated. Although both are recognized as significant to professional practice, achieving competence serves as the primary basis for professional curriculum designs. Identity formation is left largely to the hidden curriculum. A more formalized approach can, and should, be taken to insure students' complete professional development, which in turn can lead to a more positive impact on the society the profession serves. This basis can be empirically established by a review of the research on the strategies, processes, and outcomes of critical thinking, problem solving, judgment, creativity, empathy, efficacy, integrity, and autonomy in educational and professional practice settings.
Theoretical Underpinnings of Professional Practice

Critical Thinking

John Dewey (1933) stated, "the origin of thinking is some perplexity, confusion, or doubt. Thinking is not a case of spontaneous combustion; it does not occur just on 'general principles" (p. 15). To differentiate between ordinary thinking and what Dewey termed reflective thinking, he stated:

Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends constitutes reflective thought. It includes a conscious and voluntary effort to establish belief upon a firm basis of evidence and rationality. (1933, p. 9)

Dewey identified five phases or aspects of reflective thought. It should be emphasized that he did not view these steps as following one another in a set order. Rather, he was trying to describe the transition from pre-reflective to reflective thinking and these phases were regarded as different aspects of this process. The first phase, suggestions, is where the mind leaps forward to a possible solution. It is a substitute for direct action; "a kind of dramatic rehearsal." If more than one suggestion occurs, a state of suspense exists and further inquiry is produced. The second step, intellectualization, represents a clarification of the difficulty or perplexity that has been felt (directly experienced) into a problem to be solved, a question for which the answer must be sought. As a result of this, ideas or plans of action or hypotheses may be formulated (phase 3) to deal with the problem. The sources for such plans are found in past experience. Therefore, if a person has experience of similar situations he/she will
be able to think of solutions for his/her present problem. The fourth phase is reasoning or the mental elaboration of the idea or supposition as an idea or supposition. Here deductions can be made from the various hypotheses and implications drawn if the hypotheses are operationalized. This stage of deductive reasoning then leads to the fifth stage, experimental corroboration, or verification. Ideas are, for Dewey, verifiable because they are plans of actions whose outcomes can be tested. Thinking, therefore, is a directed activity which inevitably involves some form of experimentation.

Similar to Dewey's phases of reflective thought, Dressel and Mayhew (1954) specified five related abilities of critical thinking to

1. define a problem;
2. select pertinent information for the solution of the problem;
3. recognize stated and unstated assumptions;
4. formulate and select relevant and promising hypotheses; and
5. draw conclusions validly and to judge the validity of inferences. (p. 179-180)

From this perspective, critical thinking is defined as problem solving.

They stated:

"problem solving" was regarded as embracing most of the aspects of critical thinking [and] was adopted as the ability to be particularized. This restriction was decided upon because of a feeling that problem solving is essential to effective living. (p. 177)

Taba (1950), however, believed critical thinking required more skills than are used in the problem solving approach. She stated, "too many teachers and schools have taken too simplified a view of critical thinking. They have therefore tried to concentrate the training of it
in a few simple steps -- such as the five steps in problem solving -- and called it a job" (p. 45). Edwards (1950) observed that critical thinking is essential to both problem solving and the scientific method, but are not the same. D'Angelo (1970) also contended that critical thinking is a broader concept that includes other skills than those restricted to problem solving. Thus, the definition of critical thinking as problem solving is not strongly supported.

Another prevalent definition of critical thinking in the literature equates it to logical analysis. For example, Siegal (1980) viewed critical thinking as embedded in the conception of rationality, or coextensive with the relevance of reasons. He stated:

A critical thinker is one who recognizes the importance, and convicting force, of reasons. When assessing claims evaluating procedures, or making judgments, the critical thinker seeks reasons on which to base his or her assessment, evaluation, or judgment. Moreover, to seek reasons is to recognize and commit oneself to principles governing such activity. Critical thinking is, thus, principled thinking. (p. 8)

Ennis (1962) conceptualized critical thinking in a three-dimensional scheme composed of logical, critical, and pragmatic dimensions. The logical dimension addresses the judgment of alleged relationships between meanings of words and statements. The criterial dimension includes knowledge of the criteria for judging statements and the pragmatic dimension considers the background purpose against which the judgment is made. From these three dimensions, Ennis listed twelve aspects of critical thinking:

1. grasping the meaning of a statement.

Judging whether:
2. there is ambiguity in a line of reason;
3. certain statements contradict each other;
4. a conclusion follows necessarily;
5. a statement is specific enough;
6. a statement is actually the application of a certain principle;
7. an observation statement is reliable;
8. an inductive conclusion is warranted;
9. the problem has been identified;
10. something is an assumption;
11. a definition is adequate;
12. a statement made by an alleged authority is acceptable. (p. 84)

Since 1962, Ennis has refined, extended and tested empirically these aspects of critical thinking. Renaming his area of inquiry rational thinking, Ennis (1979) has elaborated on his original twelve topics. Rational thinkers are persons who are proficient at
1. observing;
2. inferring an explanation, the point, the meaning, and so forth;
3. generalizing;
4. conceiving and stating assumptions, alternatives, plans, predictions, definitions, and so forth;
5. offering a well-organized and well-formulated line of reasoning;
6. evaluating authoritative-sounding statements, deductive reasoning, inductive reasoning, explanations, value statements, and definitions, and;
7. detecting standard problems and realizing appropriate action.
In addition, rational thinkers have the tendency to
1. exercise the proficiency they possess;
2. take into account the total situation;
3. be well informed;
4. demand as much precision as the subject matter permits;
5. deal with the parts of a complex situation in an orderly fashion;
6. consider seriously other points of view than one's own;
7. withhold judgment when the evidence and/or reasons are insufficient;
8. take a position (and change the position) when the evidence and reasons are sufficient to warrant so doing, and;
9. accept the necessity of exercising informed judgment.
10. exercise a good judgment. (p. 5-6)

Critical thinkers, from this perspective, are individuals who are positive, assertive persons, expected to recognize and take action on a variety of problems. Critical thinkers actively seek to become well informed, and do not shy away from value questions (Baker, 1981).

Saadeh (1969) defined critical thinking as the abilities and the attitudes needed to evaluate the internal evidence of a verbal communication. Verbal communication is a logical operation (consisting of inferring, comparing, generalizing, explaining) which must be consistent with the standards inherent in a particular experiential context. Hence, inquiry into the management of these logical operations must satisfy logical requirements. Therefore, the rules and principles of logic are the norms for assessing the results of inquiry and controlling it to yield warranted assertions.
A third definition of critical thinking expands the concept to a composite of attitudes, knowledge, and skills which is closest to Dewey's concept of reflective thought. He stated "no separation can be made between impersonal, abstract principles of logic and moral qualities of character. What is needed is to weave them into unity" (1933, p. 34).

From this perspective, Glaser (1941) defined critical thinking as a "persistent effort to examine any belief or supposed form of knowledge in light of the evidence that supports it and the further conclusions to which it tends" (p. 6). It involves an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, knowledge of the methods of logical inquiry and reasoning, and some skill in applying those methods. According to Glaser, critical thinking requires the ability to

1. recognize problems;
2. gather and marshal pertinent information;
3. recognize unstated assumptions and values;
4. comprehend and use language with accuracy, clarity, and discrimination;
5. interpret data, to appraise evidence and evaluate arguments;
6. recognize the existence (or non-existence) of logical relationships between propositions;
7. draw warranted conclusions and generalizations;
8. test the conclusions and generalizations at which one arrives;
9. render accurate judgments about specific things and qualities in everyday life. (1941, p. 6)

It is evident from the definitions presented of reflective and critical thought, that the concept is embedded in reasoning and based on
logic. Reasoning allows the individual to use something known or believed to be true repeatedly in order to arrive at other supposed truths in search of evidence. Logic, the study of reasoning, determines the rules of procedure that make controlled inquiry possible. Logic is the science of necessary, probable, and fallacious inference contained in the processes of thought, called reasoning.

The relationship between logic and thought (the field of psychology) has long been debated. Three schools of thought appear in the literature. Psychologism contends that logic is derived from psychology. Hence, rules which govern thinking and which are expressed in systems of logic develop from experience. Logicism reduces psychology to logic. Hence, logical laws exist prior to experience; they are innate structures not modified by experience and reasoning is correct when it conforms to these structures (Bolton, 1972). Finally, a number of psychologists separate psychology and logic completely. For example, Bruner, Goodnow, and Austin (1956) stated "the thinking of individuals is guided by experience and the consequences of such experiences rather than logical propositions" (p. 104). Also, B.O. Smith (1957), an educator, stated:

logic is neither thinking nor thought. It has nothing to do with the creative processes. It does not tell us how we in fact do think, nor does it tell us how we ought to think. It is not a set of laws to be imposed upon thinking. It simply gives us the rules and techniques by which to address the results of our mental efforts. (p. 225)

Piaget offers a perspective on the relationship between logic and psychology by stating that the "intrinsic features of logic have their origin in the activities of the subject" (Beth and Piaget, 1966, p. 136). Using the term "operationalism" to define his position, he
asserted an operation represents an action which develops into stable cognitive structures. The most significant operations for the development of thinking are logical operations, such as classification, relation and implication. These, according to Piaget, must of necessity form into logical systems, since the existence of one presupposes and is dependent upon the existence of others (Bolton, 1972).

Logic is the formal study of operational structures and psychology studies their real functioning and development (Piaget, 1951). Thus, the methods are independent and there exists a possible correspondence of problems. Bolton (1972) stated:

> a methodological independence (exists), since one cannot invoke psychological facts to solve problems of formal logic, nor formal logical procedures to explain the necessity inherent in logical laws or the development of structures which account for this necessity; and a possible correspondence of problems, since the problems solved by formal logic can correspond to psychological questions. . . . (p. 33)

Logic and psychology, therefore, reflect one another. They remain autonomous in their methods, but are complementary.

Piaget (1951) contended that the development of logical (critical) thinking is a result of the individual progressively adapting to the environment. He stated that operational thinking and socialization must be regarded as interdependent. Piaget (1926) demonstrated that childish thought is egocentric and suggested that logical reasoning developed in connection with the socialization of language and thought. The individual does not develop as a result of environmental forces. The extent the individual utilizes the environment promotes development and utilization is dependent upon the extent to which the person has developed structures capable of dealing with the environment. Thus,
there is a reciprocal relationship throughout development between individual activity and that which is given to the individual.

Considerable research on Piaget's paradigm of cognitive growth has been conducted on children through adolescence. By adolescence and especially by college age, the individual is expected to use formal operational thought. The research, however, is not consistently supportive of this expectation. For example, Lovell and Butterworth (1966) found that at age 15, at least half of the subjects studied were unable to cope with problems demanding formal operations. Elkind (1962) studied 240 college students on quantitative conceptions. He found 92% had abstract conceptions of mass and weight but only 58% had an abstract conception of volume. The errors of the remaining 42% were the same as those made by children. McKinnon and Renner (1971), in a similar study, reported that 50% of 131 first year college students were operating completely at Piaget's concrete level of thought, and another 25% had not fully attained the established criteria for formal thought. Schwebel (1975) studied 60 first year college students and found 17% scored at the concrete level, 63% at the lower formal level, and 20% at the upper formal level. Differences between the sexes in all the studies cited were found to be significant, favoring men. Jansson (1975) studied pre-service elementary school teachers' abilities to judge selected deductive arguments. He found large numbers of beginning elementary school teachers are deficient in rudimentary logical skills of a judgment type. Thus, research suggests that persons responsible for planning learning activities in an educational setting cannot assume that all students have achieved a level of formal thinking.
Critical thinking as an aim of education

Educators have recognized the importance of providing learning environments conducive to the development of critical thought. Israel Scheffler (1973) stated, "critical thought is of the first importance in the conception and organization of educational activities" (p. 1). B.O. Smith (1957) contends that teachers should be trained in logic in order to develop student's ability to think critically. Siegel (1980) professed critical thinking as an educational ideal since students must be prepared to become competent and self-sufficient in adult life. He stated:

The self-sufficient person. . .is a liberated person; such a person is free from unwarranted control of unjustified beliefs, unsupportable attitudes, and paucity of abilities which can prevent that person from completely taking charge of his or her own life. Critical thinking thus liberates as it renders students self-sufficient. (p. 16)

In addition, critical thinking is grounded in rationality and education has a responsibility to develop in students those traits, attitudes, and dispositions which encourage the seeking of reasons for grounding judgment.

The Commission on Higher Education in 1947 identified eleven major goals for higher education which included "to acquire and use skill and habits involved in critical and constructive thinking" (p. 57). In 1954, the Cooperative Study of Evaluation in General Education chose six of the eleven goals identified by the President's Commission for evaluation in 19 colleges. Upon completion of the study, they suggested that critical thinking, viewed broadly, might provide the emphasis whereby general education courses individually, could be better planned and taught,
and whereby general education programs might achieve among the courses some larger degree of integration. . . critical thinking might strive where other principles have failed. (Dressel and Mayhew, 1954, p. 273)

Professional education also has recognized the importance of developing critical thinking for effective practice. For example, the National League for Nursing, the national accrediting body for all schools of nursing, stipulates that "the students need to develop the skills of critical thinking and to have opportunities for synthesis of learning" (1977, p. 13). Critical thinking is recognized as the foundation upon which professional nursing practice is operationalized.

**Empirical studies of critical thinking**

Research on the concept of critical thinking addresses a wide array of variables. For example, Furst (1950) found critical thinking closely related to scholastic aptitude. Garett and Wulf (1978) found the critical thinking abilities of women in graduate school were closely related to their ego strength, and for both men and women critical thinking was predictive of success in graduate school. Simon and Ward (1974) found men achieved significantly higher critical thinking scores than women and that critical thinking ability was independent of personality in the dimension of extroversion - introversion. Kemp (1960), using the Dogmatism Scale, found freshmen college students with relatively open belief systems, superior in critical thinking to those with closed belief systems. Watson and Glaser (1964) reported correlations between raw scores on the Critical Thinking Appraisal and various verbal intelligence measures with coefficients ranging from .55 to .75 and a median of .68, indicating a substantial relationship
between the two constructs. Glaser provided a theoretical explanation of the relationship from Guilford's (1956) factor analytic studies of the structure of the intellect. According to Guilford, the total list of intellectual factors falls into two major groups -- thinking and memory factors. Within the thinking group, a three-fold division appears -- cognition, production, and evaluation factors. All thinking depends upon different combinations of these factors. Glaser predicted that certain cognition factors (e.g., general reasoning, ability to abstract and generalize, sensitivity to problems, conceptual foresight) and several evaluation factors (e.g., logical evaluation, experimental evaluation, and judgment) were related to critical thinking ability. Other educators, however, differ in their interpretation of these correlations. Other areas of investigation focus on the relationship of critical thinking to reading ability (Watson and Glaser, 1964), development (Maier, 1930; Lovell, 1968), and attitudes and values (Lehmann, 1963). The major emphasis of this review, however, is on educational methods that contribute to the development of critical thinking abilities.

Glaser (1941) reviewed 25 studies concerning training to think critically and transfer of training to think critically. He summarized from these studies:

There is no evidence that students acquire skill in critical thinking as a necessary by-product of the study of any given subject. On the other hand, almost any subject or project can be so taught as to put pupils on guard against hasty generalization, contradictory assertions, and the uncritical acceptance of authority. Thus, transfer of training from the study of logical reasoning and methods of evaluating the adequacy of evidence in a subject field... can be brought about, but it does not occur automatically. In general, the research
indicates that if the objective is to develop in students an attitude of "reasonableness" and regard for the weight of evidence and to develop ability to think critically about controversial problems, then the component attitudes and abilities involved in thinking critically about such problems must be set up as definite goals of instruction. (p. 69-70)

Glaser (1941) in his own study, found that training in logical analysis improved the ability of critical thinking in general and particularly the attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience. He concluded that a self-consciously constructed curriculum could enhance the learning of critical thinking skills. Similarly, Anderson, Marcham, and Dunn (1944), using a controlled group design, confirmed the above conclusion. In addition, they found that the critical thinking problems used made their most important and distinctive contribution in developing skills associated with the making of inferences and the drawing of conclusions. Thus, research supports the stated belief that critical thinking skills can be taught.

Lehmann (1963) found critical thinking scores significantly increased from the freshman to senior years in college. This finding suggests students became more proficient in such tasks as the selection of pertinent information, the ability to draw generalizations, make conclusions, and to formulate and select relevant hypotheses as a result of their educational experience.

From an extensive review of the literature, McDermott (1980) identified 13 modes of presentation discussed as facilitating critical thinking, some of which were empirically validated:

1. debate;
2. demonstration;
3. discovery-heuristics;
4. inquiry into inquiry method;
5. lecture using false or misinformation or unwarranted conclusions;
6. media selected for approach;
7. role playing;
8. seminar;
9. simulation;
10. small group discussion;
11. role modeling of critical thinking by faculty and/or practitioners;
12. textbook selection;
13. questioning techniques.

She reviewed 103 self-study reports from accredited schools of nursing and found 16.5% used seminar, 11.7% used simulation and learning games, and 8.7% used small group discussions as teaching strategies to promote critical thinking. References to the other models were minimal. In addition, she sought to determine the types of learning experiences used to facilitate critical thinking which she categorized into four areas: experiences related to (1) the entire program; (2) specific course work in the arts and sciences; (3) specific course work in the nursing major; and (4) selected concepts included in the nursing curriculum which were identified in the nursing literature or by the investigator as concepts facilitating critical thinking. She found related to the total program schools identified their philosophy and/or objectives as providing direction for the selection and provision of appropriate learning experiences to facilitate critical thinking. Learning experiences related to course work in the arts and sciences included the behavioral sciences (22.3%), physical sciences (20.4%), humanities
(18.4%) and biological sciences (14.6%). Only three schools required logic as a prerequisite to the nursing major. Specific course work in the nursing major revealed research as facilitating critical thinking. Finally, she found selected concepts of nursing process, problem solving, and decision making most frequently used to structure learning experiences for critical thinking.

Logan (1976) sought to answer the question: "Do sociologists teach students to think more critically?" Using a quasi-experimental design, he obtained pre- and post-test data on eight groups of students at all levels of the program (from freshman to graduate students). In addition, he tested his own experimental class in which the skills of critical thinking were stressed. With the exception of his own class, no increase in critical thinking scores were evident across the curriculum. He explained his finding as follows:

The professed concern among sociologists with teaching students to think more rationally and scientifically about social phenomena may be to a considerable degree lip service that masks a hidden curriculum. Sociology professors may, in fact, be more concerned with teaching students what to think than how to think. That is, they may be more concerned with instilling certain ideas, beliefs, values, and ideologies in their students than with teaching them how to critically and scientifically evaluate those ideas. (p. 41)

Logan described the nature of his experimental course in which students' critical thinking skills were enhanced. First, there was relatively little emphasis on subject matter, rather materials were provided that stimulated discussions of objectivity, scientific method, and critical thinking and their application to thinking about social issues. Second, the materials chosen for critical analysis dealt with
current controversial issues. Instead of lecturing, Logan would think critically out loud about the material, analyzing it for the class and providing a continuing example of the kind of thinking he was trying to teach his students. Finally, the course emphasized students' intellectual attitudes, encouraging them towards objectivity.

Smith (1977) investigated the relationship between specific classroom behaviors and critical thinking. Four activities were identified as being related to active classroom involvement and were the focus of the study: (1) the degree to which faculty members praised or used students' ideas; (2) the degree to which the faculty members asked questions, and the nature of the questions; (3) student participation in class and the cognitive level of participation; and (4) peer to peer interaction in the class. Twelve faculty members and 138 students in a small liberal arts college participated in the study. Instrumentation was chosen to assess both process and outcome in the classroom. Therefore, pre- post-test measures of critical thinking using the Watson-Glaser Critical Thinking Appraisal were obtained and Flanders Instructional Analysis System was used to record verbal classroom interaction. In addition, students were asked to complete a self-report measure of critical thinking at the completion of the course. Smith found that the process variables of student participation, teacher encouragement, and peer to peer interaction most significantly contributed to increased critical thinking ability. This study supports the importance of active student involvement in the learning process. However, as Smith notes, in college classrooms, less than 20% of class time is spent in student participation and of this time, only 2.6% is spent in questioning, with memory questions being the most frequently
asked, not questions requiring higher levels of thought such as synthesis and evaluation.

Annis and Annis (1979) investigated the impact courses in philosophy would have on students' critical thinking. The experimental design consisted of four groups. Students enrolled in Logic, Ethics, Introduction to Philosophy, and a Non-philosophy Control Class. Students in all groups were pre and post-tested using the Watson-Glaser Critical Thinking Appraisal. The results of the study indicated that Logic had a consistent impact on critical thinking, while other philosophy classes, when compared to the control group, did not. Given the close match between contents of a course in Logic and the abilities measured by the tests, the results are not surprising.

Lyle (1958) using a pre- post-test design compared two methods of teaching a general psychology course. The control group was taught in a conventional manner, using lectures, textual materials, and examinations primarily over units of the textbook. The experimental group was actively engaged in problem solving activities, working in small groups. Lyle, however, found no significant differences between the groups on post-test measures of critical thinking.

Morgan and Morgan (1953) administered the Morgan Test of Logical Reasoning to 134 adults employed by the United States Government. The subjects were divided into two groups, those who had at least three semester hours of college training in logic and those without any training. Subjects were matched on sex, age, and college degrees. Results indicated that in the majority of cases, those subjects with training in logic scored higher in logical reasoning. Similarly, Peters (1971) studied student teachers in English and found those who had
formal training in critical thinking were more successful on a test that measured inductive and deductive reasoning, the ability to translate an enthymeme into a full syllogism and recognizing the reasoning involved in arguments.

Micro-computers have also been studied for their ability to help students develop their logical reasoning skills. Wood (1980) wrote an interactive program in BASIC that required inductive and deductive reasoning skills. Fourteen pairs of college students, matched on critical thinking scores, were randomly assigned to experimental and control groups. The experimental group interacted with the computer until a predetermined level of proficiency was reached. Difference scores on the Watson-Glaser Critical Thinking Appraisal showed a statistically significant increase for the experimental groups. Wood concluded that computer programs are a promising methodology for improving students' logical thinking skills.

Teaching methodologies studied in high school classrooms also provide valuable information for developing critical thinking skills. For example, Salisbury (1934) in a controlled experiment, provided training in logical organization and found it produced marked improvement in reading ability and reasoning. Hyram (1957), in a controlled study, investigated the effect of understanding and mastery of the rules and principles of logic on critical thinking. He found logical reasoning ability for the experimental groups significantly increased. Henderson (1958) conducted a controlled experiment and found teaching knowledge related to the problems of (1) determining the meaning of an expression; (2) deciding whether or not an argument is valid; (3) deciding whether a statement is true or false; and (4)
justifying opinions and evaluating other people's justifications of their opinions improved students' ability to think critically.

The effects of overall curriculum designs on students' critical thinking abilities has also been studied. Nursing education proposed an integrated curriculum design as one means of stimulating critical thought. Research studies, however, do not support the relationship. Pardue (1979) found, in a national study, that students enrolled in an integrated curriculum do not achieve significantly greater critical thinking scores than students in a blocked curriculum design. Huff (1979) and Richards (1977) in more limited designed studies, reached the same conclusion. Recommendations from each of these researchers includes the need for further, more tightly controlled research in the area.

**Summary.** From the review of the theoretical and empirical literature on critical thinking several generalizations emerge. First, there is no universally accepted definition of critical thinking. However, the concepts of reasoning and logic are inherent to critical thinking. Second, not all students entering professional schools have achieved a level of formal thinking. Third, critical thinking is recognized as a major educational aim of secondary, higher, and professional schools. Fourth, considerable research has been conducted on the concept in relation to many variables. Of particular interest is its relationship with I.Q. with correlations of .68 reported. Fifth, critical thinking can be taught and transferred across subject matter. Finally, specific learning experiences and teaching strategies have been validated empirically which facilitate critical thinking. These include (1) training in logical analyses of subject matter; (2)
discussions of objectivity, scientific method, and critical thinking in the classroom; (3) role modeling of critical thinking by faculty; (4) student participation in classroom discussions; (5) peer to peer interaction; (6) teacher encouragement; (7) formal course work in logic; and (8) computer programs requiring inductive and deductive reasoning skills. No empirical evidence supports an integrated curriculum design as facilitating critical thinking in nursing education.

Problem Solving, Judgment and Decision Making

"A problem is a stimulus situation for which an organism does not have a ready response" (Davis, 1973, p. 12). The processes by which a response is derived has been studied from different psychological perspectives. For example, behavioral psychology focuses on trial-and-error forms of problem solving. Gestalt psychology attempts to analyze the internal processes of the organism. Psychometrics is concerned with intellectual traits accounting for individual differences in the process and information processing uses computers to simulate cognitive processes (artificial intelligence).

Inherent in models of problem solving is the problem solvers' ability to acquire salient cues from the environment; to make judgments and decisions. Judgment, according to Rappoport and Summers (1973), is a uniquely important functional aspect of thinking that allows persons to cope with, or adapt to, uncertainty. "It provides the psychological means of going beyond perceptual and cognitive givens, while maintaining organization and continuity in behavior" (p. 4). Judgment mediates between the intention or purposes of the person and the uncertainties of
the environment and thus is best understood through analysis of person-environment interactions.

Problem solving. Most writers on problem solving agree that the process takes time and proceeds through certain stages. Gagne (1975) summarized these stages as (1) statement of the problem; (2) defining the problem, by distinguishing essential features; (3) searching for and formulating hypotheses; and (4) verifying the solution. Gagne defines the outcome of these stages as

an inferred change in human capability that results in the acquisition of a generalizable rule which is novel to the individual, which cannot have been established by direct recall, and which can manifest itself in applicability to the solution of a class of problems. (p. 132)

In addition, Gagne (1975, 1977) stipulated that certain internal and external conditions are necessary for problem solving. External conditions are verbal instructions that stimulate recall, make cues distinctive, or guide thinking. Internal conditions include the recall of subordinate capabilities (previously learned rules) and the activation and use of cognitive strategies the individual possesses.

Problem solving, therefore, depends upon previously learned rules which must be recalled. The individual must then search for and select recalled rules that are specifically relevant to the stimulus situation. At this point, the individual may be aided by external instructions which make relevant "cues" more distinctive.

Formulating a hypothesis or combining subordinate rules is the next stage of problem solving. At this stage, individual differences become apparent, since there are many ways in which recalled rules and concepts may be combined. Gagne relates this stage to the intellectual
fluency factors identified by investigators of creativity, such as Guilford (1956). At the next stage, the problem solver arrives at a provisional rule for solution of the problem which is then subjected to verification by application to a specific example. If verification is not successful, the problem solver returns to the task of trying new combinations of rules.

Newell and Simon (1972), using an information processing approach, studied the performance of intelligent adults on moderately difficult problems of a symbolic nature (chess, symbolic logic, and cryptarithmetic). Their goal was to develop a general theory of problem solving to describe the way in which individuals solved problems within set limits of capacity for processing information. The proposed theory was guided by four propositions:

1. A few, and only a few, gross characteristics of the human information processing system (IPS) are invariant over task and problem solver.

2. These characteristics are sufficient to determine that a task environment is represented (in the IPS) as a problem space, and that problem solving takes place in a problem space.

3. The structure of the task environment determines the possible structures of the problem space.

4. The structure of the problem space determines the possible programs that can be used for problem solving. (pp. 788-789)

The human information processing system, according to Newell and Simon (1972), consists of long term memory (LTM), and short term memory (STM). LTM has an unlimited capacity and is organized associatively, its contents being symbols and structures of symbols. STM holds five to seven symbols, but only two can be retained for one task while another unrelated task is performed. The "problem space," within which problems
are solved, and the "programs" available to solve problems are determined by task instructions, previous experience with the same or similar tasks, stored programs of substantial generability in LTM that can be applied to a wide variety of tasks, or stored programs in LTM that combine information from the environment to construct new problem solving programs. In essence, Newell and Simon's theory emphasizes that rational human problem solving is characterized by adaptation to the problem to be solved. The behavior of the information processing system in a given environment is produced by the interaction of the demands of that environment within the parameters of the system (e.g., LTM, STM). Thus, the task itself becomes the major determinant of human behavior.

The relevance of problem solving ability to professional practice has been recognized and extensively studied in medicine and nursing. In these fields, the problem solving process is synonymous to the clinical or diagnostic process. Although the diagnostic thinking process has been described in a number of ways, the dominant cognitive model is hypothesis generation and testing.

Elstein et al. (1978), in the information processing tradition, defined the processes of medical problem solving as cue acquisition, hypothesis generation, cue interpretation, and hypothesis evaluation. In a five year study entitled The Medical Inquiry Project, the investigators used simulated physician-patient encounters as their primary research method. Throughout each simulation, physicians were urged to "think aloud," to explain their diagnostic reasoning at each step. Their findings revealed that the medical diagnostic process was hypothetico-deductive rather than inductive, in which physicians formulate diagnostic hypotheses early to guide their reasoning and data
collection. These hypotheses are retrieved from the physician's long term memory via associative processes based on clusters of salient cues. The number of hypotheses considered at any one time is limited, averaging from four to five and reaching an upper bound of six or seven, due to limited short term memory capacity. This capacity can be increased by nesting hypotheses hierarchically or by replacing hypotheses by reformulating the problem. In addition, accuracy of cue interpretation was found to be related to accuracy of diagnostic outcome and to be independent of thoroughness of cue acquisition. Finally, and perhaps most significant, the researchers found that diagnostic performance was case specific and criterial and non-criterial physicians, (experienced physicians recommended by their peers as good and not good), could not be differentiated. This finding was contrary to the widely held assumption that there is a clear distinction between competent and non-competent physicians; where diagnostic skill is an innate trait of experienced doctors that generalizes across situations. The non-acceptance of these results by the medical community led to reanalysis of the dependent variables and data analysis methods used in the study (McGaghie, 1980). Re-evaluation suggests that the fundamental units of analysis and a sound representation of medical diagnostic reasoning are still unknown.

The work of Elstein et al. (1978) can be viewed from the cognitive perspective of concept attainment. In essence, diagnosis is attaining a concept of the state-of-the-client through a series of decisions or strategies. The model of concept attainment is supported by the notable work of Bruner, Austin and Goodnow (1956).
Bruner et al. define a strategy as "the pattern of decisions in the acquisition, retention, and utilization of information that serves to meet certain objectives" (p. 54). An ideal strategy is one that is most efficient in attaining the concept but has the least amount of cognitive strain. They stated:

For any given concept attainment task, for example, there is an ideal strategy that can be constructed having the property that by following it one can attain the concept with a minimum number of encounters but without regard to the cognitive strain involved. There are other ideal strategies having the property of minimizing cognitive strain, that one must encounter en route to a solution. And indeed, there are also ideal compromise strategies that serve both the purposes of cognitive economy and rapid solution. (p. 55)

In formulating hypotheses, Bruner et al. (1956) identified two basic strategies, simultaneous and successive hypothesis scanning. A simultaneous scanning strategy involves considering information to test multiple hypotheses simultaneously, where successive scanning limits the information choice to those instances that provide a direct test of a single hypothesis one at a time. An individual's selection of a specific strategy is dependent upon the characteristics of the task and the capabilities of the individual. In addition, Bruner et al. (1956) found that concept attainment strategies alter in the face of changing probabilities of encountering different kinds of instances to balance information gained, cognitive strain produced, and failure risk.

Gordon (1972, 1980) using Bruner's et al. (1956) concept attainment model as a theoretical framework, studied strategies nurses use to select or eliminate hypotheses in the process of making a diagnosis. The study design was a modification of the game of Twenty Questions in which 60 nurse clinicians were asked to diagnose the current
"state-of-the-patient" from a set of 32 possible states. Ideally, Gordon asserts, the most efficient diagnostic strategy would include reducing the size of the hypothesis set by multiple-hypotheses testing early in the task, which she labeled "predictive hypotheses scanning." By eliminating low probability hypotheses, single hypothesis testing could be employed for remaining hypotheses. She stated:

This strategy would yield maximal information early in the task but could entail increased cognitive strain and also the risk of inaccuracies due to eliminating hypotheses on the basis of inference and prediction. The shift to direct testing of high probability hypotheses later in the task would be associated with reduced strain and risk. (1980, p. 40)

Gordon found that predictive hypothesis testing did occur with greater frequency in the first half of a diagnostic task than in the second half as well as changes in the type of information collected. When opportunities for collecting information was restricted, cognitive strain was increased and multiple hypothesis testing was more prevalent. These subjects, however, achieved greater accuracy and higher levels of confidence in the solution. Subjects with high inferential ability did not use a higher frequency of predictive hypothesis testing, as hypothesized. Gordon concluded from her study that nurses use predictive hypothesis testing procedures as part of their diagnostic strategies, which therefore requires them to possess a network of propositional inferences that can be retrieved from memory.

Matthews and Gaul (1979) studied the relationship between deriving a nursing diagnosis and concept attainment, cue perception, and critical thinking ability. They sampled undergraduate and graduate students using case studies, The Concept Mastery Test, and the Watson Glaser
Critical Thinking Appraisal. They found, in undergraduate students, a strong relationship between cue perception in nursing diagnosis and ability to deal with abstract concepts. However, there was no overall relationship between the ability to derive nursing diagnoses and to think critically.

Using methodology related to but "more standardized and methodologically rigorous" than the Elstein et al. study, Gale (1982) identified 14 validated categories or types of thinking as components of the clinical problem-solving process, presented in seven groups:

1. diagnostic interpretation of clinical information;
2. judgment of need for further general or clarifying inquiry;
3. expecting, searching for or planning to search for specific features of disease or treatment of disease;
4. reinterpretation of clinical information;
5. active confrontation or elimination of an interpretation;
6. determined interview structure; and
7. failure to make specific or general inquiry.

Gale asserted that these specific categories specify the kinds of cognitive processes that occur during clinical problem-solving, and underpin the process so far broadly described as hypotheses generation and testing.

Several other models of medical problem solving appear in the literature (Kozielecki, 1972; Visonhaler et al. 1975; Schwartz and Simon, 1976; Bashook, 1976). Vu (1980), in reviewing each of these models, concluded the process generally consists of problem-sensing, hypothesis generalization and evaluation. The process, however, is affected by several factors, such as the clinician's medical knowledge,
area of medicine, and clinical context of the problem solving. In other words, research efforts yield inconsistent findings as problem solving ability varied according to situation and appears to be dependent upon the individual's acquired skills and his or her mastery of the content of the problem to be solved (Vu, 1980).

Judgment and decision making. Two basic schools of research on judgment appear in the literature, the "regression" and "Bayesian" approaches. Included in the regression approach is the correlational paradigm, and lens model. The correlational paradigm, according to Sarben and Bailey (1966) correlates the information cues available to the inferring person with the judgments or influences. What usually results is that the coefficients of correlation between cues and judgment make public the subtle, and often unreportable, inferential activities of the inferring person. That is, the coefficients reveal the relative degrees that the judgments depend on the various sources of confirmation available to the judge. (p. 193-94)

Developed by Hoffman (1960), this method of modeling a judge from multiple regression equations or analysis of variance is known as "policy capturing." Policy capturing has been applied to diverse judgmental tasks, and has been shown to be a powerful device for predicting quantitative judgments on the basis of specific cues (Slovic and Lichtenstein, 1973).

Brunswik's (1956) theory of probabilistic functionalism provides another theoretical framework of the judgment process. Similar to the symbolic interactionists' frame of reference (see Chapter II), the Brunswikian perspective is grounded in perception of the environment. Entitled the lens model, the relation between a perceiver and the
objects of perception is mediated by cues of a probabilistic, inferential nature. To gain understanding, therefore, is a task of comprehending and relating observable cues to one another. Modified by Hammond (1966), the lens model quantitatively specifies relationships between observable multiple cues and the non-directly observable criterion states that produce them. The lens model equation, denoted as \( ra = GReRs \), states that perceptual or judgmental accuracy \( (ra) \) is limited first by the degree to which the task is predictable \( (Re) \), then by knowledge of the properties of the task \( (G) \) and by cognitive control over the utilization of that knowledge \( (Rs) \). Cognitive control is statistically independent of knowledge which therefore allows judgmental accuracy to be improved by either increasing knowledge or facilitating utilization of existing knowledge (Hammond and Summers, 1972).

Perceptual accuracy of multiple cue probabilistic tasks has two components; one in which the relation between each cue and the criterion is linear, the other where the relation is non-linear. Research has shown that the learning of non-linear relations occurs slowly (Brehmer, 1969; Hammond and Summers, 1965). Therefore, poor performance in complex non-linear tasks is a function of most subjects' inability to detect the task relation, as well as difficulties in cognitive control and in acquiring knowledge about the task (Deane, et al. 1972). In clinical judgmental tasks, Goldberg (1970) found that while knowledge \( (G) \) was high, judgmental accuracy was low and inconsistent as a result of low cognitive control. Therefore, to improve judgmental accuracy, feedback mechanisms are necessary to enhance learning probabilistic and non-linear relations and exercising cognitive control.
Hammond and Summers (1970) identified two basic, possible forms of feedback, outcome feedback, and lens model (or cognitive feedback). Outcome feedback provides the learner with the correct answer on every trial; a prominent paradigm used by both behavioral and cognitive psychologists. Hammond and Summers (1972), however, noted that outcome feedback does not assist subjects in acquiring knowledge about the properties of complex inference tasks, particularly when the task requires learning of complex relations under conditions of uncertainty. Citing numerous studies (e.g., Goldberg, 1968, Bjorkman, 1965) they concluded that not only is outcome feedback not useful in learning a complex clinical inference task, it may be detrimental to cognitive control as well. In comparison, lens-model feedback provides subjects with information on their own cognitive system and allows comparison to the properties of the task system with which they are trying to cope. Todd and Hammond (1965) using two different probabilistic tasks, found that using lens model feedback facilitated both acquisition of knowledge and increased cognitive control.

The second research school on judgment utilizes the Bayesian approach which is grounded within the framework of decision theory. The basic tenets are that opinions should be expressed in the form of subjective or personal probabilities, and in light of new information, optimal revision of such opinions is accomplished via Baye's theorem. According to Baye's theorem, accurate decision making depends on the prior probabilities of the hypotheses and the data, and on their probability of joint occurrence. The strength of an association or the weight of a cue is expressed as probabilities as opposed to correlation coefficients or regression weights. The output of a Bayesian analysis
is a distribution of probabilities over a set of hypothesized states of the world.

Research using Bayesian analysis has demonstrated that human decision makers are conservative. When new information is introduced, subjects change their opinions far less than they should. For example, in some studies, subjects required two to nine data observations to revise their opinions, when Baye's theorem would prescribe only one observation (Peterson, et al. 1965; Phillips and Edwards, 1966). Research has since focused on understanding the nature of conservatism so that its effects can be minimized in practical diagnostic settings.

Theoretical explanations of the problem solving process provide various perspectives on the concept. To date, no unified theory exists, nor adequate explanations to account for individual differences in the process are provided.

Slovic and Lichtenstein (1973) propose several generalizations about human judgment based on the relevant research. First, the individual responds in a highly predictable way to the information available to him and it can be represented quantitatively. Second, individuals have difficulty weighting and combining information. Thus, to reduce cognitive strain, they resort to simplified decision strategies, many of which lead them to ignore or misuse relevant information. Third, the structure of the judgment situation (e.g., the order in which information is presented) is an important determinant of information use. Finally, despite the substantial body of research, little is known about many aspects of information use on judgment.

Although the focus of problems to be solved and the terminology used to describe the concept differs from profession to profession, the
significance of problem solving to the effective practice of a profession is inherently understood. In essence, the process defines and operationalizes the theoretical foundations of each unique discipline. Thus, problem solving, judgment, and decision making, both content and process, should constitute a major focus in professional education.

Educational strategies to develop problem solving, judgment, and decision making abilities

The theoretical discussion of problem solving presented complex paradigms of the processes and skills involved. Identifying educational strategies that develop problem solving abilities is equally complex, although many specific techniques and comprehensive programs are presented in the literature.

Elstein et al. (1978) concluded from their study that there is a general mental process common to all medical problem solving (hypothetico-deductive). However, the effectiveness with which this process is mobilized in any particular case is dependent upon knowledge in a particular domain. These findings, they contend, do not fully justify a case oriented curriculum, since transfer is limited, although they do not believe such a curriculum design is inappropriate for medical education. They stated:

a medical school curriculum built around clinical problems and case discussions in the preclinical years should therefore choose problems and cases that exemplify the problem solving process...but competence is also dependent upon knowledge of content. Our resolution. ...is to emphasize both, to stress that content appears to transfer less than has been generally assumed, and to reformulate the process as a hypothetico-deductive method with heuristics suitable for probabilistic tasks. (p. 293)
Bailey et al. (1971) implemented and studied an experimental curriculum (using a control group design) which emphasized problem solving at the University of California, San Francisco School of Nursing. Problem models were developed and presented throughout the curriculum using teaching strategies designed to induce analytical thought processes. It was hypothesized that by providing students with opportunities to actively engage in problem solving and to compare and contrast the kinds of nursing decisions made in different problem situations, techniques of effective problem solving would be learned. A simulated clinical nursing test and observations and ratings of students' clinical practice were used for measurement of performance outcomes. Although their findings were not statistically significant, they identified three trends with the experimental groups: (1) improvement in communication and data gathering skills; (2) development of low-risk decision making patterns; and (3) increased agreement with the established criterion.

DeBack (1981) studied the relationship between senior nursing students' ability to formulate nursing diagnoses and the curriculum model of the program. Specifically, she hypothesized that a systems model curricula would predict greater ability in diagnoses formulation. She categorized baccalaureate nursing curriculum into four models:

1. Medical Model -- a curriculum that is organized around disease processes.

2. Interaction Model -- a curriculum that is organized around the understanding of human interpersonal relationships (King, 1971; Orem, 1971; Orlando, 1961).

3. Developmental Model -- a curriculum that is organized around the concepts of fundamental human needs (Henderson, 1966; Rogers, 1970).

4. Systems Model -- a curriculum that is organized around the stability or adaptation of the client (Roy, 1976).
Two hundred and seventy schools responded to her survey, however, none of these could be categorized as a medical model. Randomly selected schools from the remaining three categories were asked to forward nursing care plans from senior students for the purpose of determining ability to formulate nursing diagnoses. Three criteria were established for evaluating diagnostic formulations. Of the 200 nursing care plans analyzed, only 28% met all the criteria; 35% met none of the criteria. Thus, in general, ability to formulate nursing diagnoses is not a demonstrated competence of senior nursing students. In analyzing the relationship of the curriculum model to diagnostic ability, she found no significant effect. She suggested, however, that her sample population was insufficient for the treatment effect to show significance and recommends replication with a larger sample. DeBack (1981) also hypothesized that employment of student-involved teaching strategies and essay-type assessment methods (as opposed to objective type measures) would be associated with greater diagnostic formulation ability. The data failed to support either hypothesis. DeBack's findings are consistent with an earlier study by Fredrickson and Mager (1977) which found that students in baccalaureate nursing programs do not consistently use all steps of the problem solving process nor do they consider each step consciously.

In medical education, Barrows (1977) generated curriculum objectives for developing problem solving ability. He suggested that students should be provided with (1) continual exposure to patients, to provide opportunities for utilizing problem solving approaches; (2) simulation experiences; and (3) printed materials which provide cognitive feedback of their problem solving. Although the approach has
not been systematically evaluated for its effectiveness in fostering and developing clinical problem solving skills, Barrows contends it has a positive effect on student motivation, enthusiasm and growth in personal skills.

Margoles, Barnoon, and Barak (1982) studied the effectiveness of introducing a course in medical decision making into the curriculum, prior to students entering the clinical area. Using an algorithmic approach to decision making, they concluded that pre-clinical medical students can be taught cognitive decision-making. Similarly, Taylor et al. (1978) developed a unit to teach first year medical students how to use hypotheses in solving common gynecological problems. The unit included lectures, small-group sessions, independent learning, and several simulated patient problems for student practice. Performance evaluation was based on a 20 multiple-choice examination and two patient management problems. They found students satisfactorily recalled factual information and identified and interpreted information needed for hypotheses testing. However, students had difficulty in mastering the skill of hypothesis formation and revision. The investigators concluded that early introduction of diagnostic hypothesis generation and testing is important because it assists students in organizing their store of information in a flexible schemata so that new information can be taken in if appropriately assimilated.

Parameter et al. (1975) developed a course which centered on patient problems via small group discussions with faculty, which incorporated clinical, biological, and behavioral science concepts as well as the problem solving process. As patient cases were presented, students were asked to generate hypotheses, interpret cues, and arrive
at a diagnosis. As a result of the course, students were found to interpret data, demonstrate a comprehensive approach to the patient, recognize the degree of seriousness, evaluate the viability of the work-up at different stages, and apply consistency in reasoning.

Aspinall (1979) studied the use of a decision tree to improve diagnostic accuracy with nurses. Using an experimental control group design, subjects were given a written case study and asked to formulate possible diagnoses. The experimental group was given a set of decision trees which contained possible diseases suggested by the presenting symptoms in the case study with an estimate of the probability of each. Using the trees, the subjects could systematically use information, constantly generating conditional probabilities of the outcome. Aspinall found that significant improvement in diagnostic accuracy occurred with the use of decision trees, suggesting it as an appropriate methodology for developing diagnostic skills.

Gordon (1978) applied heuristics in teaching diagnostic problem solving skills. Using simulated cases, two groups of 32 fourth year medical students were asked to develop diagnoses. One group was given a heuristic to apply to their cases while the other group was asked to generate their own rules. No significant differences in diagnostic accuracy between the groups was found.

Simulation has received a great deal of attention in the medical literature as an effective way to teach and test problem solving skills. McGuire (1976) contends an effective simulation modality for problem solving must have certain characteristics:

1. It must be initiated in a realistic manner;
2. The exercise must require a series of sequential independent decisions representing the various stages in the definition, analyses, and resolution of the problem.

3. The student must be able to obtain information in realistic form about the results of each inquiry or action, as a basis for subsequent action.

4. Once these data are obtained, it must be impossible for him to retract a decision that was revealed to be ineffectual or harmful.

5. The program must be constructed so as to allow for different approaches and for variation in feedback appropriate to these several approaches. Hence, provision must be made for modifications in the problem in response to specific actions taken by each student.

6. These modifications must differ among students according to the unique configuration of prior decisions each has made. (p. 91)

Four modalities, presenting problems that meet these specifications, have been developed for use with medical students, residents, and clinicians: (1) a paper and pencil format using latent-image or opaque overlay techniques for feedback systems (McGuire and Babbott, 1967; McGuire and Solomon (Eds.), 1971); (2) a computer format; (3) a computer-managed robot simulation; and (4) oral interaction format suitable for role-playing exercises (Barrows, 1972; Levine and McGuire, 1970a; 1970b). The concurrent validity of each of these modalities with "real-life" performance is strongly presumptive at this time.

Murray et al. (1977) studied the value of Computer Assisted Learning (CAL) in assisting undergraduate students to make patient-management decisions. They found CAL students' factual knowledge, as well as decision making skills improved. Short and Hess (1980) successfully simulated skin diseases on the computer for developing students' diagnostic abilities. Similarly, Friedman et al. (1978) incorporated computer-based simulations into the third year of a
medical student's teaching program. They did not find any significant correlations between use of the simulated patient-physician encounters and objective measures of competency. They conclude, however, that computer simulation provides students with a core of identified patient problems to interact with and is an ideal vehicle for teaching diagnostic skills.

**Summary.** Empirical investigations that attempt to identify the processes and skills of problem solving and educational strategies that develop them yield inconsistent findings. It can be concluded that problem solving is a multi-stage process of a means-to-an-end analysis aimed at discovering a path that leads to a desired goal. It involves the acts of perception, cognition, and evaluation.

Research has failed to demonstrate conclusively that problem solving is a generic skill that transfers from situation to situation. Efficient problem solving appears to depend on both the individual's acquired skills and his or her mastery of the content to be solved. Individual differences in problem solving ability has not been demonstrated to correlate with personality variables (Elstein et al. 1978; Koehne-Kaplan and Tilden, 1976).

Educational strategies studied to develop problem solving abilities yield equally inconsistent findings. What does emerge from the literature is the need for students to develop a strong knowledge base from which to generate hypotheses and feedback mechanisms which demonstrates to students the cognitive processes they used in deriving a problem solution. Simulations and computer assisted instruction appear to be promising methodologies.
Creativity

A review of the literature on creativity reveals that there is no single accepted theory or definition of the concept. To illustrate several definitions are presented:

The creative process is the emergence in action of a novel relational product, growing out of the uniqueness of the individual. (Rogers, 1959, p. 71)

Creative activity appears simply to be a special class of problem solving activity characterized by novelty. (Newell, Shaw & Simon, 1962, p. 65)

Creativity is the occurrence of a composition which is both new and valuable. (Murray, 1959, p. 99)

Creativity is the encounter of the intensively conscious human being with his world. (May, 1959, p. 59)

Creativity is the ability to see (or be aware) and to respond. (Fromm, 1959, p. 44)

Creativity is the disposition to make and to recognize valuable innovations. (Lasswell, 1959, p. 203)

Within the various definitions is the question of whether creativity is a process or a product. The definitions offered by Rogers and Lasswell, for example, emphasize products as the criterion of creativity. Critics of the "products" position assert it is an obstacle in valuing the concept itself (Torrance, 1963) and leads to a disregard of the person who displays creative potential.

Kincaid (1965) reviewed the implications of the process-product dichotomy on education. If the emphasis is on the creative products teachers may fail to recognize creative ability when it occurs or may misjudge creativity on the basis of products alone. On the other hand, if the emphasis is on process, teachers could tend to concentrate totally on students' mental processes and pay little attention to the
results of these processes. Kincaid suggested that the dualistic view of creativity be eliminated and instead viewed as a continuous whole, including both the act of creating and the resulting products of that act. He cited John Dewey (1916) to emphasize his point:

Thinking, in other words, is the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous. (p. 145)

Numerous theories of creativity have been proposed. Most focus on the creative process and can be placed within three mainstreams of psychological thought, psychoanalytic, humanistic, and behavioristic.

Sigmund Freud viewed creativity as resulting from conflict within the unconscious. The creative process originates from within the individual and the creative product mirrors unconscious images which have been processed into socially accepted forms by the ego, (Freud, 1958; Woodman, 1981). Creativity, according to Freud, has the same origins as mental illness. Getzels and Jackson (1962) summarized Freud's position:

1. Creativity has its genesis in conflict, and the unconscious forces motivating the creative "solution" are parallel to the unconscious forces motivating the neurotic "solution."

2. The psychic function and effect of creative behavior is the discharge of penned-up emotion resulting from conflict until a tolerable level is reached.

3. Creative thought derives from the elaboration of the "freely using" fantasies and ideas related to daydreaming and childhood play.

4. The creative person accepts these "free using" ideas, the non-creative person suppresses them.

5. When the unconscious processes become ego-syntonic, "achievements of special perfection" occur.

6. Creative behavior is "a continuation and substitute for the play of childhood."
Carl Jung also viewed creativity as an unconscious activity. However, he departed from Freud's concept of the unconscious (the repressed or forgotten thoughts, located just below the level of the conscious, which can be raised to the conscious level) by identifying a collective unconscious. The collective unconscious is not to be thought of as a self-subsistent entity; it is no more than a potentiality handed down to us from primordial times in the specific form of mnemonic images or inherited in the anatomical structure of the brain. There are no inborn possibilities of ideas that set bounds to even the boldest fantasy and keep our fantasy activity within certain categories. (Jung, 1966, p. 80-81)

Jung (1946) also proposed eight categories of personality types, all with equal capacity to be creative. Some, however, are more prone to creativity than others. The personality, in essence, mediates between the conscious and unconscious during the creative process.

Ernst Kris (1951), drawing on the work of Freud, proposed that creativity consisted of an inspirational phase and elaboration phase. Creative thinking occurs during the inspirational phase when barriers between the ego and the id are removed and control of the thinking processes is eliminated; abandoning logical, rational thought and allowing daydreams and fantasies to occur. In the second phase, the generated ideas are subjected to rigorous logical evaluation.

The humanistic position is represented in the work of Abraham Maslow and Carl Rogers. Maslow (1959) viewed creativity as stemming from attempts at self actualization, or the desire for self-fulfillment, with every individual having a creative potential. He differentiated between primary and secondary creativity. Primary creativity arises from the unconscious and is the source of new discovery. Secondary
creativity is rational logical productivity. True creativity, according to Maslow, depends upon utilization and integration of both primary and secondary processes in the personality.

Rogers (1959), like Maslow, believed the search for self-actualization was the motivation for creativity. Certain conditions within the individual, according to Rogers, are associated with creativity. These include an openness to experience, an internal locus of evaluation, and the ability to toy with elements and concepts. A creative individual integrates these abilities to produce both effective and new ideas, behavior and things.

Woodman (1981) summarizes the behavioristic theme on creativity as, "creative behavior, despite its originality, is nevertheless learned and may be explained in stimulus-response terms" (p. 58). Sarnoff Mednick (1962) provides an associative explanation as a variation of the behavioristic position. According to Mednick, creativity is the result of the uniquely identified association of seemingly unrelated concepts. A creative solution may be achieved in three ways: by serendipidy, when a contiguous event elicits (usually accidentally) the requisite associations; by similarity of the associative elements; or by the requisite elements being evoked continguously through the mediation of common elements. Individual differences in creativity are a result of a person's knowledge of associative elements and a large number of associations to these elements. This theory provided the framework for Mednick's development of the Remote Associates Test. Guilford (1971), however, stated it "is more related to convergent production of semantic relations than divergent production, and should not be used, therefore, as a general purpose indicator of creative talent" (p. 81).
These theories do not represent the entire field on creative thought. Busse and Mansfield (1980) identify a number of theorists as being "composite" in nature, combining elements from the traditional schools of thought. Among these theorists is Jacques Hadamard (1945) who proposed a theory similar to that of Wallas (1926), which characterizes much of the psychological literature on the creative process. There are four phases in the creative process (1) preparation, (2) incubation, (3) illumination, and (4) verification. During the preparation phase, the individual consciously seeks understanding of the problem. Then, during incubation, the unconscious makes unexpected connections that constitute genuine discovery. This leads to illumination, in which the solution to the problem is grasped. Finally, the conscious verifies the value and establishes the implications of the problem solution.

Although the theories presented contain conflicting assumptions, there are common threads. Bolton (1972) identifies these as (1) width of attention deployment relates to the ability to utilize incidental cues in problem-solving and that this capacity is a feature of the cognitive style of the creative thinker; (2) there are two modes of thinking unregulated-syncretistic and regulated-analytical; and (3) a creative thinker must be able to integrate both modes of thinking.

One of the major issues in the literature on creativity is its relationship to intelligence and psychometric approaches to assessing it. Prior to 1950, creativity and intelligence were considered to be the same. J.P. Guilford and his associates (1956, 1966, 1967) made a major contribution to defining the abilities that were in the domain of creative thinking through a series of factor-analytic studies. They
stated that the intellect is multidimensional and that the abilities that appear to be components of creativity can be regarded as components of the intellect:

After considering all of the known factors that could be regarded as belonging in the intellectual category, including the abilities of fluency, flexibility, and originality as well as sensitivity to problems, the author proposed a system of those factors and called it a structure of the intellect. . .the creative-thinking abilities find logical places within the system. (Guilford, 1963, p. 153)

The Structure of the Intellect Model (Guilford, 1967) is a three dimensional conceptualization of intellectual abilities, where every ability is described in terms of the type of operation used, the content involved, and the intellectual product, which is a result of interaction between operation and content. There are five intellectual operations, cognition, memory, divergent production, convergent production, and evaluation. The factors of creative thinking primarily emerge from divergent thinking which are,

**Sensitivity to Problems:** The ability to recognize problems, to perceive deficits or deficiencies within a situation. The perception of defects or imperfections stunts the creative person toward devising a more adequate solution.

**Word Fluency:** The ability to produce a quantity of words that fulfill restrictive and structural requirements (words begin or end with a specified letter, prefix, or suffix). Meanings of words need not be known.

**Associational Fluency:** The ability to meaningfully complete relationships. The words given must be synonyms or be related in some meaningful way to stimulus words or ideas.

**Ideational Fluency:** The rate at which an individual can generate a quantity of ideas that fit a specific class. The ability to consider rapidly a variety of ways to approach a problem.
Expressional Fluency: The ability to construct sentences. This factor also relates to the organizing of ideas into large and broader systems.

Spontaneous Flexibility: The ability to change the kinds of responses, the categories of responses, or the direction of one's thoughts.

Adaptive Flexibility: The ability to make changes in interpretation of the task, in approach or strategy, or in possible solutions.

Originality: The ability to give unconventional, clever, or remotely associated responses.

Elaboration: The ability to provide details toward completion, when a part or an outline is given. Being able to expand the simple into a more complex structure.

Other influential studies on the relationships between intelligence and creativity were conducted by Getzels and Jackson (1962). They compared highly creative children to highly intelligent children and found both groups to be equally superior in school achievement, although teachers preferred the high I.Q. group over the high creative group. The investigators reported a low but positive correlation (.26) between measures of creativity (defined as divergent thinking) and intelligence. Their studies set forth the position that measures of I.Q. emphasized logical reasoning, memory and convergence, not the creative factors identified by Guilford (fluency, flexibility, originality, and elaboration).

Torrance (1962) replicated many of the Getzels and Jackson studies. He reached similar conclusions. Torrance, however, constructed his own tasks, which were models of the creative process. Yamamoto (1964) found a consistent decrease in the size of the correlation between creativity and intelligence with increase in I.Q. level. This supported Torrance's
(1962) contention that a necessary threshold of intelligence for
creative thinking is an I.Q. score of approximately 120.

Numerous other investigators have studied the intelligence -
creativity relationship. Bolton (1972), summarizing the research, draws
three tentative conclusions:

1. The correlation between intelligence and creativity, as
defined by performance on tests of divergent thinking,
decreases with increase in intelligence and decreasing
test atmosphere.

2. Different tests of divergent thinking and different
measures (e.g. fluency, flexibility, and originality)
within the same test correlate highly among themselves to
form a unitary dimension, although verbal and non-verbal
components may be distinguished.

3. The relationship between divergent and non-divergent
tests awaits further clarification from studies which
control for test atmosphere and range of intelligence.
(p. 202-203)

Research on creativity also relates the concept to the personality.
Getzels and Jackson (1962) found highly creative subjects to be more
playful and exhibit a less conforming approach to a variety of tasks.
Other investigators confirm that divergent thinkers have a more
adventurous and relaxed personality than convergers (Bolton, 1972).

Hudson (1966, 1968) studied the relationship between personality,
cognition and the development of a sense of identity. He suggested that
the differences between divergers and convergers emerge from a single
system of values, where convergent thinkers exhibit self-control,
respect for authority, and the masculine virtues of the scientist, while
divergent thinkers exhibit freedom of expression and behavior and the
feminine sensitivity of the artist. Thus, according to Hudson, the need
for personal identity is an important motive in the organization of the
intellect and of values. Similarly, creative thinking is correlated
with positive self regard (Barron, 1957; Coopersmith, 1967; MacKinnon, 1962). Whiteside (1977) found however, that women low in creativity appear to have a more positive self regard than either creative women or non-creative men. Creative men had the greatest self-esteem of the groups tested.

Creativity research has been conducted extensively, producing hundreds of studies which easily causes confusion and conflict for the reader. There are, however, several generalizations that can be made and examined. First, creativity is a process that can produce a product. The process occurs within the individual, and is not related to any value that is placed upon the product. Second, there are certain identified traits associated with creativity such as fluency, flexibility, and originality. Third, individuals identified as creative possess certain personality characteristics. Ewing (1975) identified creative individuals as being active, striving, assertive, in touch with and free to express emotion, rebellious, critical, cautious, self-determining, goal-directed, productive, humorous, motivated to influence others, and excelling in producing objects or ideas for others which are marked by their own unique copyright. Finally, creativity can be cultivated through educational experiences. Guilford (1952) stated, "like most behavior, creative activity probably represents to some extent many learned skills. There may be limitations set on these skills by heredity, but I am convinced that through learning one can extend the skills within those limitations" (p. 49). Thus, from the literature emerges two major concerns for professional educators: the relationship of creative ability to effective professional practice and how can creative potential be enhanced in professional schools.
Implications for professional practice

The relationship between professional performance and creativity has been studied in different fields. Knoell (1953) found a significant correlation between ideational fluency and teaching success. Torrance (1960) reported that most effective teachers do more "thinking" activities, defined as convergent, divergent, and evaluative thinking than the least effective ones. Raina (1970) found a positive correlation between elaboration and teaching success. Tan-Willman (1974) found creative teachers to be more original but not more fluent nor flexible in teaching performance.

Hart (1962) found significant positive relationships among nursing performance, figural flexibility, originality and elaboration, but no significant relationship for the verbal measures nor a relationship between measured creativity and faculty rating of creativity.

Halpen et al. (1973) found significant negative relationships between verbal fluency, verbal flexibility, verbal originality, creative personality and pupil control ideology. The results support their hypothesis that the more creative teacher is more humanistic toward pupil control while the less creative teacher is more authoritarian. They conclude a more humanitarian ideology is more desirable in professional practice.

Hausen (1969, cited in Baker, 1979) found creative teachers use student ideas significantly more than low creative teachers. Low creative teachers do not respond directly to students thoughts and are more authoritarian and less in touch with their students thinking. Baker (1978) found that creative teachers were not more skillful in evaluating their students' creative behaviors. Similarly, McCord (1976)
found no relationship between teacher creativity and the ability to predict student creativity. Baker, in another study (1979) of 26 elementary school teachers, found that creative teachers foster more verbal flexibility, verbal originality, and overall verbal creativity in their students. Low creative teachers showed a trend towards stimulating more non-verbal creativity in their students.

These studies yield somewhat inconsistent findings. They do suggest, however, a definitive, and in most cases, positive relationships between creative ability and professional performance. It can therefore be concluded that creativity is an important concept and should be addressed in professional education programs.

Education for creative behavior

George Stoddard (1959) observed, "creativity came close to being a lost cause in American education. Progressive education, . . . helped to revive its spirit" (p. 181). J.P. Guilford's presidential address to the American Psychological Association in 1950, emphasizing the neglect of the study of creativity, stimulated research efforts on both the identification and development of creative ability. By 1959, at least six research projects had indicated that creative productivity can be developed by deliberate procedures (Parnes, 1963).

Heist and Wilson (1968) made three assumptions about education for creativity at the college level: (1) creativity or the potential for it, like most mental or behavioral attitudes, exists in different degrees among any sample of mankind; (2) persons with high creative potential are identifiably different from average students; and (3) students of high creative potential will stay longer in college or will
be educated more adequately, if challenged and satisfied by appropriate, meaningful learning experiences.

There is evidence, however, which suggests that higher and professional education stifles a student's creative potential. For example, research projects at the Center for Research and Development in Higher Education found a high dropout rate among creative students in seven institutions studied (Heist, 1968). Abdel-Razik (1963) and Eisenman (1970) found a decrease in creativity in nursing students as they progressed through the curriculum. Marriner (1977) compared nursing, biology, and English majors on their self ratings of sensitivity, ideational fluency, flexibility, originality, and penetration. She found that nursing majors perceived themselves as significantly less creative than other majors on each measure. Johnson (1974) found social work students' creativity scores decreased with higher class status and they tended to score lower than other college majors on the Torrance Tests of Creative Thinking.

Hilgard (1959) suggested a collegiate educational program address five questions in relation to students' creative development:

1. Does the student initiate inquiry on his own, or only inquire along lines set by others?

2. Is there opportunity to exhibit and take responsibility for, successive evidences of creativity, even though the created items are not "distinguished?" That is, does the student learn to take satisfaction in small evidences of creativity?

3. Are there opportunities for the student's original work to be judged according to individual progress rather than according to group norms.

4. Is there time in the program for a substantial investment of time in idiosyncratic specialization?

5. Is there evidence that the progressive changes during the academic year are toward greater diversity of talent rather than greater conformity? (p. 180)
Courses in creative problem solving are widespread in college curricula. Edwards (1967) surveyed 34 institutions and identified the most important and successful components of these courses (as reported by the respondents) to be (1) the establishment of a psychologically secure, non-threatening supportive atmosphere where all ideas are welcomed; (2) getting participants out of "mental ruts" or routines, encouraging them to try new approaches, to see problems (and themselves) in a different light; (3) stimulating participants to recognize and circumvent the inhibiting factors that block free play of the imagination; (4) getting participants involved intellectually and even emotionally by working on something of interest to them; (5) encouraging cross-fertilization of ideas so that participants learn from and teach each other; (6) helping the participants gain self-confidence on creative abilities, as well as in specialized skills by tackling and solving problems of progressively greater complexity; and (7) constantly challenging participants to be open to experience and stimuli of all sorts, both from within themselves and from their environment (p. 34).

The effectiveness of creative problem solving courses has also been tested empirically. At the University of Buffalo, a creative problem solving course was first introduced into the curriculum in 1949. Longitudinal evaluation of the course revealed that on five of seven measures of creative ability, students enrolled in the experimental course were superior to a matched control group (Meadow and Parnes, 1959) and that improved creative ability persisted for more than eight months after completion of the course (Schmadel, 1960; cited in Parnes, 1963).
A later study at the University of Buffalo (Reese et al., 1976) investigated the effects of a creative studies program on structure of the intellect factors. Using a control group design, a two-year sequence of four semester long courses in creative problem solving was given to college students. Each semester emphasized a different aspect of creativity and effects were measured using a battery of instruments reflecting J.P. Guilford's structure of the intellect categories. The program was found to have no significant effect on memory or evaluation operations, but significantly improved cognition, convergent production, and divergent production operations. Abilities involving semantic and behavioral contents were also strongly affected, but those involving figural and symbolic contents were not.

Davis and Bull (1978) studied the effects of a college course in creative thinking on the affective components of creativity (e.g. attitudes, values, interests, motivations). The five week course was activity oriented, covering such topics as creative and problem solving processes, the creative personality, and creative thinking techniques. Using a two group design, they found the course did increase affective traits necessary for creative productivity.

Bailey, McDonald and Claus (1971) studied the effects of an experimental nursing curriculum design on students' creative development. The basic principles of the design were that students should actively engage in problem solving, assume as much professional responsibility as their skill and knowledge permitted, be exposed to a variety of problems in a variety of settings, and study problems in their entirety. They found the experimental group scored significantly higher on all creativity measures except figural flexibility and figural
elaboration. Thomas (1979) also studied the effects of an integrated, process oriented nursing curriculum on creativity. She found, however, that beginning nursing students exhibited more creative strength than graduating nursing students and that students in a subject matter design achieved higher creativity scores than students in a process design.

Specific techniques to develop creative ability have also been studied. Osborn (1963) proposed that in developing creative ability, the quality may be a function of quantity. This hypothesis asserts that if a person produces a greater total number of ideas, a greater number of high-quality ideas is also produced. Emphasizing fluency of ideas, the "brainstorming" principle has been demonstrated as an effective strategy (Parnes and Meadows, 1960; Parnes, 1961). Four rules guide this technique: (1) criticism is ruled out; (2) freewheeling is encouraged; (3) quantity rather than quality is emphasized; and (4) confirmation, transformation, and improvement of the idea is stressed.

Taylor et al. (1958) studied the use of the principle among groups versus individuals. Osborn (1963) had proposed that in group brainstorming, one person stimulates another. Taylor et al. (1958), however, found a larger number of unrepeated ideas produced by individuals working alone than by those working in groups. Guilford (1962) suggested that no generalization can be made as to whether individual or group brainstorming is the more effective technique, since the preference of the thinker should have something to do with the choice of condition.

Gordon (1961) proposed a technique called synectics to enhance creativity of individuals. The synectics model is based on three underlying assumptions: (1) creative capacity can be increased by
bringing the process to consciousness and by developing conscious aids
to creativity; (2) the emotional component is more important than the
intellectual, the irrational more important than the rational; and (3)
emotional, irrational elements must be understood in order to increase
the probability of success in a problem solving situation (Weil et al.
1978). The basic activity of synectics is metaphor. Through metaphoric
activity, several psychological states are induced.

1. Involvement and detachment. This refers to the
interacting relationships between the person and the
problem. The individual becomes involved with the
problem situation, but detaches himself for sometime in
order to achieve a better perspective.

2. Deferment. The individual uses a judicial mind, but
withholds the solution to prevent hasty selection of a
superficial, ineffective, and premature, non-novel
solution.

3. Speculation. The individual takes a "trip" to extrapolate
and explore a variety of ideas.

4. Hedonics. This involves emotional factors and taking
pleasure -- ravishing in irrelevancies which can lead to
moments of intuitive or divine aspiration.

5. Autonomy of objects. The individual feels that the
solution itself demands quality.

Korth (1973) evaluated the effectiveness of synectics training with
college students. He found associational fluency was enhanced, but
there was no effect on several personality measures nor on ratings of
inventiveness and usefulness for two real-life problems.

Osborn (1963) proposed a checklist of idea-spurring questions as a
technique for generating new combinations of ideas, in which the
individual considers each item on a prepared list as a possible source
of innovation to a given problem. Another procedure, morphological
synthesis (Allen, 1962), requires the individual to list specific ideas
for improving one dimension of a problem along one axis of a two-dimensional diagram, and specific ideas for another aspect of the problem along the other axis. The intersecting squares of the matrix yield novel idea combinations. Warren and Davis (1969) compared the checklist and morphological synthesis techniques with undergraduate students. They found increased productivity and more superior solutions with morphological synthesis. Finally, Meichenbaum (1975) found self-instructional training aimed at modifying what persons say to themselves during problem solving and focusing training directed at getting persons to attend to and reformulate their feelings enhanced creativity of college students.

**Summary.** All individuals have a creative potential which seems to develop best under varied and informal methods. Torrance (1963) stated, "creative ways of learning include exploring, manipulating, questioning, experimenting, risking, testing, and modifying ideas" (p. 12-13). Effective methods for stimulating creative growth have been problem solving courses which provide stimulating, challenging experiences, encouragement and development, and warm supportive environments. Curricula designed with a problem solving focus also promotes creative ability. Therefore, if a curriculum were designed to engage the student in as many kinds of thinking as possible, in all probability, the student would (1) be provided with a basis for recognizing opportunities for transfer of learning; (2) expand his capacity for responding in several ways to a simple phenomenon; (3) improve his ability to select an effective way of thinking about a task; and (4) provide him with cognitive alternatives he might otherwise have ignored.
Empathy

A professional relationship with a client is a helping relationship in which the professional mobilizes available resources to enhance the client's understanding of self and the environment and to assist the client to move in a positive, purposeful direction within that environment. The effectiveness of the relationship is dependent upon many variables, including the concept of empathy. Carkhuff (1969) stated, "without empathy there is no basis for helping" (p. 83).

The significance of empathy to the helping relationship has been demonstrated through research. Rogers, Gendlin, Kiesler, and Traux (1967) found that clients who received high levels of empathy from a therapist showed the greatest reduction in symptoms. Traux and Carkhuff (1967), reporting a series of studies on the relationship between empathy and outcomes in counseling, found empathy levels significantly higher in successful therapy cases than in unsuccessful cases. They also noted that low empathy correlated with deterioration in outcome measures. They concluded that therapeutic relationships can be both beneficial and harmful. Also, clients who perceived their therapists to be highly empathic improved more than clients who judged their therapists to be low in empathy (Strupp, 1963; Barrett-Lennard, 1962).

Aspy (1973) found significant IQ score gains in students whose teachers had taken part in a training program designed to increase their interpersonal skills. Aspy and Roebuck (1974) reported a significant relationship between a teacher's level of empathic understanding and both cognitive gains and attendance rates of their students. Traux and Tatum (1966) found that teacher's empathy and positive regard for students were significantly related to positive changes in children's
adjustment to school, to teachers, and to peers. Harbach and Asbury (1976) found teacher communication of empathic understanding reduced the occurrence of negative student behaviors. Aspy (1975) concluded that teacher empathy is a very powerful predictor of student performance. Fiedler (1950) reported empathy was stressed by both clients and therapists as an important component of the ideal therapeutic relationships. Soper and Combs (1962) reported similar findings concerning the teacher-student relationship.

Thus, empathy is an important concept to professional practice. However, research also indicates that professionals are generally low in empathic ability, as is the general public. Martin and Carkhuff (1968), using a five point scale (the Carkhuff Scale for Empathic Understanding) to measure empathic ability (where a score of three indicated minimal ability to help another person) found the general public functioned midway between levels one and two, indicating they are almost completely unaware of the feelings and experiences of other persons. Other studies (Kratochil, et al. 1967; Carkhuff, et al., 1968) showed senior psychology and education students functioning just below level two. Experienced guidance counselors in high schools and therapists scored between 1.76 and 1.86 on the scale. In addition, Duff and Hollingshead (1968) found 71 percent of registered nurses showed no evidence of empathy towards patients.

The need to seriously address empathy in professional schools is clear. However, as with most psychological and sociological concepts, there are differing perspectives and controversies on methods of measurement and unfortunately, empathy has not been as actively researched as other concepts (e.g., intelligence, creativity, etc.).
Theoretical perspectives on empathy

Lipps (1909) coined the term "Einfühlung" which was translated to mean empathy or "feeling together with." According to Lipps, empathy is an innate, isomorphic response to another person's expression of emotion. It is both a sharing and understanding of postures and expressions which are explained by the mechanisms of projection and imitation (Buchheimer, 1963).

Since Lipps introduced the concept of empathy, two identified components of empathic skill, cognitive and affective, have been investigated in the literature. Three primary perspectives on the concept emerge, (1) knowing what another person feels; (2) feeling what another person feels; and (3) both (Chandler, 1977).

Those who stress perception and cognition in defining empathy see objectivity, detachment, and analytic knowledge of the other person's social roles as its critical dimensions (Keefe, 1976). Jessor and Richardson (1968) stated:

First the individual must be able to take the role of another accurately; he must be able to correctly predict the impact that various lines of action will have on the other's definition of the situation. This is what is meant by empathy if we strip the concept of its affective overtones. (p. 41)

Lewis and Brooks-Gunn (1979) defined empathy as a response to another's situation. Included is an awareness of what another may be experiencing, perceiving, thinking, or feeling, and does not require an individual to experience or have experienced the other's experience. Empathic ability is seen as the basis for adult social knowledge and relationships.

Other authors (Dymond, 1949; Mead, 1934; Hogan, 1969) define empathy in role interactionist terms. Empathy is the capacity to "take
the role of the other" and to adopt alternative perspectives vis-a-vis oneself. Mead (1934) suggested that practice at role taking leads to social sensitivity and the emergence of the self-concept and self-control; the self-concept subsequently enables one to "carry on a whole series of different relationships to different people" (p. 142).

Hogan (1975) asserts that empathy is a mediating variable that accounts for an unusually large range of individual differences in interpersonal behavior. An empathic individual will modify his behavior to the needs and requirements of his or her audience and will tend to be an effective speaker as a result of being able to anticipate the audience's informational requirements. Hogan maintained that

because an empathic disposition more or less insures successful role performances, the empathic person should have considerable social self-confidence and tend to seek out and enjoy social interaction. Conversely, the unempathic person should be clumsy and inept in his or her role performances, communicate poorly, and tend not to enjoy social interaction. (p. 15)

Empathy from a social interactionist perspective has strong empirical support. Empathy is highly correlated with interaction style and likability (Hogan and Henley, 1970), interpersonal competence, interactive skill, and personal adjustment (Hogan, 1969).

The cognitive, role-interactionist perspective of empathy distinguishes it as the second phase of moral development, (Hogan, 1975). In the first phase, compliance (ages 1-5), the child acquires a sense of respect for societal rules. The development of empathy then compensates for the Draconian ethic of authority that arises from the normal first stage of moral development...[and] serves as a back-up mechanism in promoting prosocial behavior in the event of a failure during the first stage of moral development. Once empathy has emerged, it provides a basis for a child's sense of justice. (Hogan, 1975, p. 16)
Empathy, therefore, is a cognitive-developmental process which can be learned.

In contrast, Stotland et al. (1971) maintained that an observer who actually shares the feelings of another is reflecting empathy. The empathic process includes recognizing the other's emotional state and reacting subjectively and physiologically to his perception of that state; hence no differentiation between self and other is made. The empathizer may even react to stimuli that are not present (perhaps evoked by parallel affective experiences) since the process does not take into account the accuracy of the perception.

Hoffman (1978, 1981) has emphasized empathy as an affective state. He suggested that affect is often aroused vicariously, or empathically, in humans through involuntary, minimally cognitive mechanisms which he described as follows:

1. The observer automatically imitates the other with slight movements in facial expression and posture ("motor mimicry"). This then creates kinesthetic cues in the observer that contribute (through afferent feedback) to his feeling the same emotion.

2. By means of classical conditioning, one observes another person who is experiencing an emotion, at the same time that one is having a direct experience of the same emotion. The result is that cues reflecting the other's emotion become conditioned stimuli that evoke the same emotion in the self.

3. Observation of someone experiencing an emotion reminds the individual of past experiences with that emotion and may evoke a similar emotion.

4. Symbolic representations (e.g. verbal descriptions) of an individual's feelings or situation can evoke an empathic response.

A distinction between empathy and sympathy should be made when discussing the affective perspective. Stewart (1956) stated sympathy
involves a loss of objectivity when experiencing the same emotions, whereas empathy requires some distancing from the other. Buchheimer (1963) described a sympathetic person as feeling "along with" another person but not necessarily "into" a person. To be sympathetic does not require direct interaction with the other person, whereas empathy implies a convergence of behavior.

A substantial body of research (e.g., Feshbach, 1973; Staub, 1970, 1971) also exists which identifies various sympathetic and altruistic responses on the part of children to the perceived distress of others. A review of this research, however, is beyond the scope of this study.

The third perspective on empathy considers both the cognitive and affective domains. Carl Rogers (1957) identified empathy as the fifth necessary condition for a therapist to initiate constructive personality change.

The fifth condition is that the therapist is experiencing an accurate, empathic understanding of the client's awareness of his own experience. To sense the client's private world as if it were your own, but without ever losing the "as if" quality - this is empathy, and this seems essential to therapy. To sense the client's anger, fear, or confusion as if it were your own, yet without your own anger, fear, or confusion getting bound up in it, is the condition we are endeavoring to describe. (p. 99)

Traux and Carkhuff (1967), early associates of Rogers, stated, "accurate empathy involves both the therapist's sensitivity to current feelings and his verbal facility to communicate this understanding in a language attuned to the client's current feelings" (p. 46). "The accurately empathic, therapeutic person not only indicates a sensitive understanding of the patient's apparent feelings, but goes further to clarify and expand what is hinted by voice, posture, and content cues" (Traux and Mitchell, 1971, p. 318).
Keefe (1976) schematically depicted the act of empathizing between two people (Figure 3). The client's feelings and thoughts (a) are translated verbally and/or non-verbally into behavioral cues (b). The professional helper perceives these cues (c), giving meaning and attending to some while discounting others. The helper's perception elicits both cognitive and feeling responses in himself (d). According to Keefe, "in order to achieve high levels of empathy with the client, the worker must allow his initial feeling responses to remain as free as possible from cognitive distortion. . .[which] includes stereotyping, making value judgments, or analyzing perceptions according to a fixed theoretical schema" (p. 12). The helper must therefore temporarily hold his cognitive processes in abeyance (e) while allowing his inner experiences to be controlled by the client's self-presentation. Finally, the helper must consciously separate feelings held by himself alone from those sensed and showed with the client (f).

Rogers (1975) summarized the general research findings on empathy and therapeutic relationships based on the cognitive-affective perspective:

1. The ideal therapist is first of all - empathic (Fiedler, 1950).


4. In successful therapeutic relationships, the client's perception of empathic quality increases over time (Cartwright and Lerner, 1966; Van Der Veen, 1970).

5. Empathy is something offered by the therapist, and not simply elicited by some particular type of client (Tauch et al., 1970; Traux and Carkhuff, 1967).
Figure 3. Behaviors Comprising Empathic Skill
Copyright 1976 by the National Association of Social Workers. Reprinted by permission.
6. The more experienced the therapist, the more likely he is to be empathic (Barrett-Lennard, 1962; Fiedler, 1950; Mullen and Abeles, 1972).

7. Empathy is a special quality in a relationship, and therapists offer definitely more of it than even helpful friends (Van Der Veen, 1970).

8. The better integrated the therapist is within himself, the higher the degree of empathy he exhibits (Bergin and Jasper, 1969; Bergin and Solomon, 1970).

9. Clients are better judges of the degree of therapists' empathy than are therapists (Rogers, et al., 1967).

10. Brilliance and diagnostic perceptiveness are unrelated to empathy (Bergin and Jasper, 1969; Bergin and Solomon, 1970).

11. An empathic way of being can be learned from empathic persons (Aspy, 1972; Aspy and Roebuck, 1974; Bergin and Solomon, 1970; Guerney, et al., 1970).

Rogers (1975) concluded that empathy is clearly related to positive outcome:

From schizophrenic patients to pupils in ordinary classrooms; from clients of a counseling center to teachers in training; from neurotics in Germany to neurotics in the United States; the evidence is the same, and it indicates that the more the therapist or teacher [or any professional helper] is sensitively understanding, the more likely is constructive learning and change. (p. 6)

In summary, empathy, as applied in professional relationships, is a multidimensional concept. Forsyth (1980), using Wilson's (1963) concept analysis framework, identified eight essential criteria of empathy. Empathy:

1. occurs in consciousness;
2. implies relationship;
3. involves validation of experience;
4. exists in variable degrees of accuracy;
5. has temporal dimensions, restricted to the here and now;
6. involves energy, which varies in intensity;
7. requires objectivity; and
8. requires freedom from judgment or evaluation.

Many professional schools profess empathic development as a major goal. However, as Elizur and Rosenhiem (1982) reported, students in medical school still learn to relate to the disease as the target of diagnosis, treatment, and research. Shaffer and Redmount (1976), in a study of three law schools, found a strong disparity between the professional qualities that were valued (counseling ability and humanist concern) and those that were cited as taught in law school. Finding and using law sources was the skill most frequently taught, with knowing the legal steps to take in a case, analyzing legal documents, and careful legal writing running close seconds. Kalish (1971a) also asserted that nursing education programs do little to increase empathy in student or graduate nurses. Counselor and psychotherapy programs have addressed the concept much more seriously and have identified some effective learning experiences for the promotion of empathic ability. Isolated efforts in other disciplines are also apparent.

Developing empathic ability

It is often assumed by some professional educators that inclusion of psychological content in the curriculum will develop empathic ability (Kalish, 1971b). Research, however, indicates that this is not generally the case. Chance and Meaders (1960) found empathy decreased significantly as psychological-mindedness of undergraduate men increased. Markham (1979) found no changes in empathy and attitudes of nurses and medical students after theoretical courses and seminars in the behavioral sciences and psychopathology. Taft (1955), reporting the
results of 81 studies, concluded that the ability to judge the feelings and behaviors of others has no relationship to the amount of training in psychology and success in judging others. In addition, empathy has not been found to correlate positively with academic performance (Hornblow, et al., 1977) and clinical practicum grades of students (Bergin and Solomon, 1963).

Rogers (1957) outlined five components of a training program for counseling and psychotherapy. Students would engage in (1) listening to tape recordings of experienced therapists; (2) role-playing with fellow students; (3) observing live demonstrations of technique and approach by a supervisor; (4) participating in personal therapy; and (5) recording interviews they conducted themselves. Within the program he stressed creating a learning atmosphere that facilitated therapeutic conditions. Traux and Carkhuff (1967) recommended that in addition to a strong experiential component of training, a didactic approach was also necessary. In their program, students were given readings of leading theorists and therapists and were assigned to listen to 25 hours of tapes of individual and group psychotherapy. The purpose of these learning experiences was to provide students with a repertoire of therapeutic responses, tactics, and approaches they might imitate. Students were then given copies of the Accurate Empathy Scale (Traux, 1961) and provided with opportunities to rate tape recordings of actual counseling and psychotherapy sessions; "thus directly teaching him [the student] to discriminate operationally between relative levels of empathic responses" (p. 293). This nine point scale consisted of:

Stage 1: Therapist seems completely unaware of even the most conspicuous of the client's feelings; his responses are not
appropriate to the mood and content of the client's statements. The therapist may be bored and disinterested or actively offering advice, but he is not communicating an awareness of the client's current feelings.

Stage 2: Therapist shows an almost negligible degree of accuracy in his responses, and that only toward the client's most obvious feelings. Any emotions which are not clearly defined he tends to ignore altogether. He may be correctly sensitive to obvious feelings and yet misunderstand much of what the client is really trying to say.

Stage 3: Therapist often responds accurately to client's more exposed feelings. He also displays concern for the deeper, more hidden feelings, which he seems to sense must be present, though he does not understand their nature or sense their meaning to the patient.

Stage 4: Therapist usually responds accurately to the client's more obvious feelings and occasionally recognizes some that are less apparent. Sensitivity and awareness do exist in the therapist, but he is not entirely "with" the patient in the current situation or experience. The desire and effort to understand are both present, but his accuracy is low.

Stage 5: Therapist accurately responds to all of the client's more readily discernable feelings. He also shows awareness of many less evident feelings and experiences, but he tends to be somewhat inaccurate in his understanding of these. This stage is the midpoint of the continuum of accurate empathy.

Stage 6: Therapist recognizes most of the client's present feelings, including those which are not readily apparent. Although he understands their content, he sometimes tends to misjudge the intensity of these veiled feelings, so that his responses are not always accurately suited to the exact mood of the client. The therapist does deal directly with feelings the patient is currently experiencing although he may misjudge the intensity of those less apparent. Although sensing the feelings, he often is unable to communicate meaning to them.

Stage 7: Therapist responds accurately to most of the client's present feelings and shows awareness of the precise intensity of most of the underlying emotions. However, his responses move only slightly beyond the client's own awareness, so that feelings may be present which neither the client nor therapist recognizes. The therapist initiates moves toward more emotionally laden material, and may communicate simply that he and the patient are moving towards more emotionally significant material.
Stage 8: Therapist accurately interprets all the client's present, acknowledged feelings. He also uncovers the most deeply shrouded of the client's feelings, voicing meanings in the client's experience of which the client is scarcely aware. The therapist offers specific explanations, in addition to the patient's understanding so that underlying emotions are both pointed out and specifically talked about.

Stage 9: The therapist unerringly responds to the client's full range of feelings in their exact intensity. Without hesitation, he recognizes each emotional nuance and communicates an understanding of every deepest feeling. With sensitive accuracy, he expands the client's hints into a full-scale elaboration of feeling or experience (Traux and Carkhuff, 1967, pp. 47-57).

After the student achieved proficiency using the rating scale, he/she was required to make actual "empathic responses" to tape-recorded client statements. Students practiced their responses until they reached a minimal level of empathy using the scale as the criterion. Then they tape-recorded role-playing sessions with their peers outside of the classroom. These tapes were brought to class and randomly played and rated on the degree of empathy. Traux and Carkhuff (1967) believed using this approach, students were motivated by the desire to achieve personal satisfaction as well as status and approval from peers and supervisors, for changing their actual behavior toward more empathic responding. Finally, students tape-recorded interviews with actual clients. "Throughout this highly structured and didactic aspect of the training program, both broader cognitive and experiential learnings occurred both in the classroom and in the quasi-group therapy sessions" (Traux and Carkhuff, 1967, p. 294).

Carkhuff and Traux (1965a) studied the effects of this training program on graduate students in clinical and counseling psychology and lay counselors. After 100 hours of training, the students were compared to fifteen highly experienced counselors and psychotherapists. Using
the Accurate Empathy Scale as the criterion, no significant differences were obtained indicating that in a relatively short period of time, students can be brought to function at empathic levels commensurate with those of experienced therapists. Other studies by Carkhuff and Traux (1965b; 1966) and others (Berenson, et al., 1966) strongly suggest positive outcomes when this training approach is used.

Elizur and Rosenheim (1982) found providing medical students with a clinical experience in psychology can increase empathy as long as it is not limited to theoretical psychiatric teaching nor solely to actual clinical contact with mental patients. Empathic ability, according to the investigators, results from students gaining an increased awareness of themselves. During the clinical rotation, one group of students was provided with a series of unstructured meetings in which group interaction among the students and emotional responses to patients were explored. This type of group experience was found to contribute to concordance between the students' self-reported empathy and their empathic rating by their fellow students, indicating the consolidation and deepening of genuine empathy. Follow-up study indicated empathy was retained six months after the completion of the experience.

Medical education has also investigated the effects of a course in interviewing and communication on students' empathic abilities. In one study (Fine and Therrien, 1977), role playing was used extensively throughout the course and was found to contribute significantly to students' ability to respond empathically to patients. Diseker and Michielutte (1981) however, found a similar course and method had no significant effects. The non-congruent findings may be attributed to differences in the measurement instruments used. The Diseker and
Michielutte study used the Hogan Empathy Scale which addresses empathy from a cognitive perspective, while the Fine and Therrien study used the Traux Accurate Empathy Scale which measures both the cognitive and affective components of empathy. This may suggest role playing is more effective in addressing the affective domain and illustrates some of the difficulties in reporting research on the concept.

Pacoe et al. (1976) combined role feedback and experiential sessions to determine the effects on empathic ability of medical students. Classes were held for 16 consecutive weeks for two and one-half hours per week. The investigators found the treatment group achieved a significantly higher level of expressive empathy than the control group. Personality gains of self-acceptance and existentiality were also achieved. They concluded from their study, and others appearing in the literature, that techniques for optimizing interpersonal empathic skills include (1) practicing the skills in either simulated or actual interpersonal situations; (2) giving immediate feedback on student performance; (3) using small group instruction; and (4) using group process to support and stimulate learning.

Sensitivity or interpersonal training has been employed as a method of increasing empathic abilities of preservice and inservice teachers. Aspy (1975) used an approach (similar to Traux and Carkhuff, 1967) consisting of four steps: (1) conceptualizing empathy; (2) helping each teacher increase the positive meaning of his or her past moments of empathic understanding; (3) helping teachers assess other teachers' levels of empathic understanding of students; and (4) helping teachers become fairly precise judges of their own levels of empathic
understanding so they might investigate its relationship to various student behaviors. The Carkhuff Scale for Empathic Understanding (1969)\(^1\) was used as the main framework for training:

**Level 1:** The first person communicates no awareness of even the most obvious, expressed surface feelings of the second person. The first person may be bored or disinterested or simply operating from a preconceived frame of reference which totally excludes that of the other person(s).

**Level 2:** The first person may communicate some awareness of obvious surface feelings of the second person, but his or her communications drain off a level of the affect and distort the level of meaning. The first person may communicate his or her own ideas of what may be going on, but these are not congruent with the expressions of the second person.

**Level 3:** The first person responds with accurate understanding of the surface feelings of the second person, but may not respond to or may misinterpret the deeper feelings.

**Level 4:** The facilitator communicates his or her understanding of the expressions of the second at a level deeper than they were expressed, and thus enables the second person to experience and/or express feelings which he or she was unable to express previously.

**Level 5:** The facilitator responds with accuracy to all of the person's deeper as well as surface feelings. He or she is "tuned in" on his or her wave-length. The facilitator and the person might proceed together to explore previously unexplored areas of human existence.

The program used didactic, audio-taped feedback and analysis of classroom interactions, and small group interaction. The results of the program indicated that students could be trained to attain minimally (Level 3) facilitative levels of empathy in their classrooms.

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\(^1\)This scale was derived in part from the Traux Accurate Empathy Scale (1961). It was written to "apply to all interpersonal processes and represents a systematic attempt to reduce ambiguity and increase reliability" (Carkhuff, 1969, p. 315).
Hodge, et al. (1978) investigated the effects of programmed versus individual supervision and the use of peer versus professional supervisors upon learning empathy with undergraduate students enrolled in an introductory psychology course. Using the Carkhuff Scale for Empathic Understanding, they found that individually supervised subjects achieved a significantly higher level of empathy and supervisor experience (peer versus professional) was not a significant factor in training. They concluded that supervised training is more effective (although programmed training is still a viable method) and can be facilitated by peer supervisors.

Kipper and Ben-Ely (1979) compared the effectiveness of the psychodramatic double method, the reflection method, and the lecture method in improving empathic ability. The psychodramatic double method is a role playing procedure in which the subject is asked to assume the role of another person, the actor. The double and the actor attempt, together, to perform as though they were one person. This method is also known as the alter-ego technique. Reflection is a method whereby the subject is asked to mirror back what are perceived to be the feelings and thoughts of another person. Lecture consisted of six short lectures delivered by professional experts. Using a controlled, pre-post-test design, the investigators found the psychodramatic double method produced the greatest improvement in empathy. There was no statistically significant difference between the effectiveness of the reflection and lecture methods.

Modeling has been demonstrated as an effective strategy in developing empathic ability. Eisenberg and Delaney (1973), using a videotape format, found that a modeled learning experience was a
significantly more effective method of acquiring a counselor response than an operant procedure. Dalton et al. (1973) found both acquisition of empathic response behavior and transfer of training can be achieved through modeling and that these behavioral changes are maintained over time. Using an audiotaped format, Payne et al. (1972) and Perry (1975) found increases in empathic abilities through modeling. Both Dalton et al. (1973) and Perry (1975) found modeled techniques to be superior to didactic or written methods of presenting the verbal behaviors to be learned. Dalton and Sundblad (1976) found modeling a superior technique to systematic training.

Kalish (1971a, 1971b) combined didactic, role-playing, experiential, and modeling techniques to develop the empathic abilities of first-year nursing students. After introducing the concept of empathy, the didactic aspect began with discrimination training. Students learned to decipher between the various levels of empathic communication by rating (using the Traux Accurate Empathy Scale) tape-recorded segments of actual psychotherapeutic interviews. Communication practice was also employed during this phase. Then role playing was introduced in which students tape recorded their interactions. The class discussed and rated segments of the tapes. The experimental group also received experiential or sensitivity training where personal feelings and problems were discussed. Finally, throughout the experience, the investigator (trainer) offered high levels of empathy to the subjects as a model of the desired behavior. The training program lasted a total of 12.5 hours. Results of the study demonstrated that subjects who underwent the experimental treatment
program significantly improved their empathic ability, and these gains were maintained for six weeks.

**Summary:** Empathy has been empirically demonstrated as an important, viable concept to professional relationships. The level of empathic understanding exhibited by the professional worker has a direct effect on client outcomes. However, many professional programs fail to incorporate learning strategies in the curriculum that will increase students' empathic abilities.

The idea that empathic ability can be taught is supported by research. Effective methods include role-playing, modeling, and experiential techniques. A combination of these techniques along with didactic and group process experiences appears to be a comprehensive approach that can achieve positive results in relatively short periods of time.

**Self-Efficacy**

Behavioral competence within the environment is dependent upon the integration of cognitive, social, and motor skills in accordance with established rules. The environment is ever-changing, thus requiring the individual to choose strategies for effectively managing the interaction. According to Bandura (1981), "the initiation and regulation of transactions with the environment are partly governed by judgments of operative capabilities. Self-efficacy is concerned with judgments about how well one can organize and execute courses of action required to deal with prospective situations that contain many ambiguous, unpredictable, and often stressful elements" (pp. 200-201).
The concept of self-efficacy evolved from social learning theory (Bandura, 1977a) which posits behavioral changes are mediated by a common cognitive mechanism. Individuals' perceived capability of performing given activities will influence their choice of activities, and persistence in the face of difficulties. The stronger the perceived self-efficacy, the more involved and persistent an individual will be. Bandura (1981) also maintains that perceived self-efficacy influences thought processes and reactions during anticipatory and actual environmental interactions.

Success perceived as resulting from intrinsic attribution reinforces individuals' beliefs that they can manage difficult situations on a continuing basis. Techniques designed to enhance expectations of self-efficacy may radically alter perceptions about the self and the world; individuals may learn to attribute to themselves greater control over their own behavior and view themselves as agents who can affect their environment rather than as passive victims. Lefcourt (1966) suggested that an individual's perceived self-efficacy can have a positive role in sustaining life and therefore constitutes a valid therapeutic goal. Self-efficacy expectations not only determine which tasks are undertaken by an individual, but also how much effort will be expended and how long an individual will persist in the face of difficulty. The greater the perceived self-efficacy, the more active and enduring the efforts.

Expectations of personal efficacy are derived from four main sources of information: (1) performance accomplishments; (2) vicarious experiences of observing the performances of others; (3)
verbal persuasion; and (4) emotional arousal (Bandura, 1977a, 1977b, 1981, 1982).

Personal accomplishments are based on experiences of personal mastery and thus provide the most influential source of efficacy information (Bandura, Adams, and Beyer, 1977). Successes raise efficacy expectations, repeated failures lower them, "especially if mishaps occur early in the course of events and do not reflect lack of effort or adverse external circumstances" (Bandura, 1981, p. 203).

Vicarious experiences of observing others perform successfully can heighten efficacy expectations, as well as lower them if the observed model is perceived to be of similar competence and fails despite substantial effort. This source of efficacy information is most influential when the individual has no previous experience upon which to base judgments.

Through verbal persuasion it is suggested to individuals, and they are led to believe, that they possess certain capabilities and they can cope successfully with difficult situations. Efficacy expectations induced in this manner are weaker because they lack an authentic experiential base.

Finally, emotional arousal can also influence efficacy expectations. Bandura et al. (1977) stated:

People rely partly upon their state of physiological arousal in judging their anxiety and vulnerability to stress. Because high arousal usually debilitates performance, individuals are apt to consider themselves more able when they are not beset by aversive arousal than when they are tense and viscerally agitated. (p. 126)

The cognitive processing of these four sources of efficacy information is accomplished via the use of cues or indicators of personal efficacy.
and employment of inference rules or heuristics to integrate efficacy information.

The concept of self-efficacy is related to and differs from other theoretical perspectives on self-referent thought. For example, White (1959) posited a concept of competence motivation or effectance motivation which attempts to explain the motivational aspects of behavior as the intrinsic need to deal effectively with the environment. Harter (1978) identified three aspects of an effectance motive: (1) the organism's desire to produce an effect on the environment; (2) the added goal of dealing effectively or competently with the environment; and (3) the resulting feelings of efficacy. Bandura (1981) observed that White's theory is unclear on how an effectance motive emerges from effective transactions with the environment and that no account is given for the effects of failure experiences. Comparing effectance motivation and social learning he stated:

In the social learning view, choice behavior, effort expenditure, and affective arousal are governed in part by precepts of self-efficacy rather than drive condition. Because efficacy judgments are defined and measured independently of performance, they provide a basis for predicting the occurrence, generality, and persistence of coping behavior, whereas an omnibus motive does not. . . . [Effectance theory] focuses almost exclusively on the effects produced by one's actions. In social learning theory, self-efficacy results from diverse sources of information converged vicariously and through social evaluation as well as through direct experience. (p. 226)

Bandura warns that these differences have significant implications for research paradigms used to study the role of perceived self-efficacy in motivational and behavioral processes.
Efficacy expectations are also differentiated from response-outcome expectancies (Rotter, 1954; Rotter et al. 1972) in that the latter refers to subjective estimates that a given behavior will lead to certain outcomes. In contrast, efficacy expectations are concerned with judged capabilities to perform the behavior required to produce the outcome. Bandura (1977b) stated:

Outcome and efficacy expectations are differentiated because individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities, such information does not influence their behavior. (p. 193)

As efficacy expectations and response-outcome expectancies are closely related constructs, it is valuable to expand somewhat on Rotter's theory. One aspect of the expectations is locus of control or the degree to which individual's perceive reinforcement as contingent upon their own behavior. "Internal control" refers to persons' belief that reinforcements are contingent upon their own actions and that people can shape their own fate, whereas external control is the belief that reinforcing events occur independently of individual actions and that the future is determined more by chance. The disposition to be internal or external is related to a variety of different factors; culture, age, and sex being predominantly cited in the literature.

As a well established behavioral construct, locus of control has been extensively investigated. Lefcourt (1966) and Rotter (1966, 1975) summarized the extensive research findings that correlate high internal locus of control with 1) greater attempts at mastering the environment; 2) superior coping strategies; 3) better cognitive processing of information; 4) lower predisposition to anxiety;
5) higher achievement motivation; 6) greater social interaction involvement; and 7) placing greater value on skill determined rewards. Studies also demonstrate that internals spend more time in intellectual activities, exhibit more intense interest in academic pursuits, and score higher on intelligence and academic tests than do externals (Chance, 1965; Crandall et al., 1965; Crandall et al., 1962. Deci (1975) viewed Rotter's concept of internal locus of control as being a necessary condition for intrinsic motivation. He stated:

An internal-control person is one who would tend to be intrinsically motivated in many situations. He believes that he can affect his environment, and he will therefore do many things for the feelings of competence and self-determination which follow from being an effective causal agent. An external control person is one who would seldom be intrinsically motivated. He believes that he cannot affect his environment, so he will not often engage in behavior in order to feel competent and self-determining. (p. 91)

Similar to both Bandura and Rotter's constructs, de Charms (1968) proposed that an individual's behavior is motivated from a desire to feel personal causation. He stated, "Man's primary motivational propensity is to be effective in producing changes in his environment. Man strives to be a causal agent, to be the primary locus of causation for, or the origin of, his behavior; he strives for personal causation" (p. 269). De Charms identifies two motivational states, Origin and Pawn, that are basic to personal causation.

An Origin is a person who feels that he is in control of his fate; he feels that the cause for his behavior is within himself. A Pawn feels that he is pushed around, that someone else pulls the strings and he is the puppet. He feels the locus of causality for his behavior is external to himself. . . . The Origin is positively motivated, optimistic, confident, accepting of challenge. The
Pawn is negatively motivated, defensive, irresolute, avoidant of challenge. The Origin feels potent; the Pawn feels powerless. (1976, pp. 4-5)

The motivational constructs cited (self-efficacy, locus of control, competence motivation, and personal causation) are closely related and have significant implications for professional role development. Self-efficacy, as a cognitive mediator of behavior, provides a strong framework for understanding behavioral change.

Research on self-efficacy theory

The majority of research to date applying self-efficacy theory has been on clinical interventions designed to rid people of severe phobias. Bandura et al. (1977) for example, studied adult snake phobic subjects, and found participant modeling produced higher, more generalized, and stronger expectations of personal efficacy than did modeling alone. In addition, self-efficacy was demonstrated to be an accurate predictor of performance tasks varying in difficulty, with dissimilar threats, and for diverse models of treatment.

Chambliss and Murray (1979a) found perceived self-efficacy contributed to smoking reduction. Similarly, in a second study (1979b) the investigators found a weight reduction program designed to increase self-efficacy beliefs to be successful. In both studies, however, the programs were successful only with individuals with internal locus of control (Rotter, 1966) orientations.

Recently self-efficacy theory has been used to guide research on students' motivation to achieve on intellectual tasks. Brown and Inouye (1978) studied the role of perceived competence similarity in developing helplessness through modeling. Using college students, it was
hypothesized that if the observer felt he or she possessed equal competence to the model, observing the model perform unsuccessfully would induce learned helplessness. Before witnessing the model perform an unsolvable anagram task, the subjects were led to believe they were either of equal or greater competence than the model. The model then performed and experienced failure on the anagram task. The subjects were then tested on another anagram task. The investigators found students who believed themselves to be of similar competence to the model persisted for a shorter time on the task and gave more negative ratings of self-efficacy than those students who believed themselves to be of superior competence to the model. The study supported Bandura's (1977b) contention that vicarious failure experiences could produce learned helplessness reactions and that self-efficacy measures were highly predictive of task persistence.

Schunk (1981) studied the relationship between children's arithmetic achievement and self-efficacy. He hypothesized that providing subjects with modeling, guided performance, corrective feedback, and self-directed mastery would foster development of skills and self-efficacy. One group of subjects, therefore, received cognitive modeling of problem-solving strategies with guided participation while the other group received didactic instruction. Fifty-six children (average age 9 years, 10 months) who displayed low arithmetic achievement, persistence, and self-confidence participated in the study. He found both instructional treatments enhanced arithmetic skill and perceived efficacy but cognitive modeling produced greater gains in accuracy. Perceived efficacy was found to be an accurate predictor of arithmetic performance.
Bandura and Schunk (1981) studied the effects of proximal goal setting (setting goals for future behavior close to existing, on-going behavior) on competence, self precepts of efficacy and intrinsic interest. According to the social learning view setting proximal behavioral goals enhances (1) motivation, by providing immediate incentives and guides for performance; (2) self-efficacy by providing criteria for mastery for judging capabilities; and (3) intrinsic interest by providing a sense of satisfaction and perception of personal causation. Elementary school children, with gross deficits in mathematical skills and disinterest in mathematical tasks, pursued a program of self-directed learning under conditions involving either proximal goals, distal goals, or no goals. The researchers found proximal goal setting contributed to the children's development of a sense of personal efficacy and intrinsic interest in arithmetic activities while distal goals had no demonstratable effects. Perceived self-efficacy was positively related to accuracy of mathematical performance and to intrinsic interest in arithmetic activities.

The aforementioned studies support self-efficacy as an accurate predictor of performance on varying tasks. Efficacy information provided through modeling, participant modeling, and proximal goal setting enhances perceived self-efficacy.

Self-efficacy related to the professional role

The concept of self-efficacy was introduced into the educational literature by Armor (1976) through a Rand cooperation evaluation study. The purpose of the study was to identify school and classroom policies and other factors demonstrated to be effective in raising the reading
scores of inner-city children. Teacher attributes, as one category of contributing variables, included assessing the teacher's sense of efficacy in dealing with minority students. Efficacy was measured by two Likert scale questions: (1) when it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment; and (2) if I try really hard, I can get through to even the most difficult or unmotivated students (p. 23). Armor found the more efficacious the teachers felt, the more their students advanced in reading achievement. In a second Rand study (Berman and McLaughlin, 1977) on teachers' uses of innovations, perceived sense of efficacy "was positively related to the percent of project goals achieved, the amount of teacher change, improved student performance, and continuation of both project methods and materials" (p. 137).

Keyser and Barling (1981) constructed and tested a teacher self-efficacy scale which consisted of five items (e.g., "I have difficulty maintaining discipline in class"). In addition, they measured response-outcome beliefs of sixth-grade teachers. Students' self-efficacy beliefs, performance accomplishments and locus of control attributions were also measured. They found teachers' self-efficacy beliefs predicted students' scholastic self-efficacy beliefs. The interaction between modeling (teachers' self-efficacy beliefs) and students' locus of control orientations were also significant, indicating children who are more externally oriented are more susceptible to modeling effects.

Ashton and Webb (1982) developed a multi-dimensional model of teachers' sense of efficacy based on Bandura's social learning theory
The model includes a general causal belief in action-outcome contingencies, a generalized sense of self-efficacy, a general belief in teachers' ability to motivate students, and a specific belief in their own perceived competence in motivating students. Using the model, Ashton et al. (1983) found that teachers' sense of efficacy was significantly related to student achievement and teachers with a high sense of efficacy were "more likely to be attentive to the individual needs of all students and to respond to students in a positive, accepting, supportive style that encourages student enthusiasm and involvement in decision making" (Ashton and Webb, 1982, p. 8). More specifically, teachers with a high sense of efficacy

1) feel that their work with students is important and meaningful and they have a positive impact on student learning;

2) expect students to progress and in general find students fulfill their expectations;

3) feel a responsibility for student learning and when students fail, examine their own performance for ways in which they might have been more helpful;

4) set goals for themselves and their students and plan strategies to achieve them;

5) feel good about themselves, teaching and their students;

6) are confident they can influence student learning;

7) feel they are involved in a joint venture with students to achieve goals they share in common; and

8) involve students in decision-making regarding goals and strategies for achieving them. (Ashton et al., 1983)

Variables found to contribute to teachers' sense of efficacy included student type, class size, role definitions, activity structure, school norms, collegial relations, decision making structures, relationship with the principal, nature of the school district, and conceptions of
the learner. Teachers' sense of efficacy, however, was not found to be related to job satisfaction, experience of stress, nor a desire to choose teaching as a career. Webb (1982) reported students in teacher preparation programs had higher efficacy scores than did practicing teachers, suggesting the service environment contributed to lowering efficacy and at the same time suggesting teacher education programs do not prepare students to withstand external threats to self-referant thought.

**Summary.** The professional role, as conceptualized in this study, is a set of expectations about the self and the environment which are mobilized by the identity in varying situations. The concept of self-efficacy contributes to a sense of professional identity by cognitively mediating judgments concerned with the ability to organize and execute given courses of action required to deal with perspective situations.

Demonstrated effective strategies for enhancing perceptions of self-efficacy are direct experiences of personal mastery, vicarious experiences of observing others' performance, and proximal goal setting. Although not empirically validated, Ashton et al. (1983) suggest McClelland's (1965) attitude change program as an effective strategy to enhance efficacy beliefs in which four components essential to effect change in attitudes and motivation are identified:

1) conceptualization of the attitude
2) self-study in relation to the attitude
3) planning and goal-setting
4) group support
de Charms (1976), in a four year project, trained teachers to increase their students' sense of personal causation. Using McClelland's model and the Origin-Pawn concept, positive outcomes regarding students' academic achievement were obtained.

**Integrity**

*Webster's New Collegiate Dictionary* (1973) defines integrity as a firm adherence to a code of especially moral or artistic values; the quality or state of being complete or undivided. Professional integrity is therefore defined as consisting of valid, internally consistent beliefs that provide at least a tentative guide for behavior based on the moral and ethical standards of the profession. Erikson (1950) stated:

> Although aware of the relativity of all the various lifestyles which have given meaning to human striving, the possessor of integrity is ready to defend the dignity of his own lifestyle against all physical and economic threats. For he knows that an individual life is the accidental coincidence of but one life cycle with but one segment of history; and that for him all human integrity stands or falls with the one style of integrity of which he partakes. (p. 232)

Integrity involves the development of standards for self-appraisal which includes values, ethics, and moral development.

Considerable attention has been given to values, ethics and moral education in higher education. In 1969, the Hastings Center (Institute of Society, Ethics and the Life Sciences) was founded to examine ethical issues in contemporary society. In 1977 they launched a two-year study to examine the teaching of ethics in American higher education. Their
report clearly identifies the diversity in approaches used, varying from philosophical, psychological and applied frames of reference. The approaches, however, are frequently confused and often conflict in purpose. There are two basic processes involved in moral judgments which must be differentiated in order to appropriately discuss educational strategies, moral content and moral structure. Moral content refers to what the individual believes and is grounded in moral philosophy. Moral structure refers to the cognitive basis of an individual's attitudes and beliefs and evolves primarily from a psychological perspective of cognitive development.

**Moral philosophy**

Moral philosophy is divided into two major categories, normative ethics and metaethics. Normative ethics refers to those moral assumptions or statements that evaluate what is good, bad (judgments of moral value), right, and wrong (judgments of moral obligation). It is concerned with what "ought" to be. Metaethics is an analytical and epistemological approach to examining the foundations upon which moral judgments are based. It questions the "why" and "what is" of moral judgments.

**Normative ethics.** Within normative ethics the main theories of moral value distinguish between instrumental and intrinsic value. Instrumentalists (e.g. John Dewey) argue that there is no real distinction between ends and means. Because an end is really only a remote means, there is no ultimate end and no intrinsically good thing. Intrinsic goodness, on the other hand, views traits or experiences good in of themselves without being related to any consequences or to any
other values. Philosophical thought about the nature of intrinsic goodness falls into two categories: monism and pluralism.

Aristotle, a monist, asserted that happiness was the only ultimate intrinsic good. Hedonism (pleasure seeking) was historically the most popular form of monism. Hedonistic philosophers included Epicurus, Jeremy Bentham (1748-1832), and John Stewart Mill (1806-1873) (Boyce and Jensen, 1978). Pluralists assert that two or more things are intrinsically good, and these things combined constitute that good which is entirely self-sufficient.

Theories of normative obligation are concerned with "the right" of a given act and are classified either as teleological or deontological; the major moral issue again being means versus the end. Teleological ethical theories argue that a given act is morally right insofar as it produces some desired end. The rightness of an act depends solely on its consequences. Subsumed under teleological theories are egoism and utilitarianism.

"The ethical egoist is one who determines the moral rightness of an act specifically in terms of its consequences for himself; his creed is, 'do that which promotes the greatest good for oneself' " (Boyce and Jensen, 1978, p. 21). Egoism, however, does not imply one's acts are necessarily selfish or unkind, only that people ought to do what will further their own self-interest.

Utilitarianism is often characterized by the phrase "the greatest good for the greatest number." Boyce and Jensen (1978) described four basic features of utilitarianism. First, time is not a relevant consideration of an act. An act that will produce the greatest good, regardless of the remoteness of its results should be performed.
Second, the greatest good is really the greatest "net" good which implies a utilitarian must consider a multitude of factors in order to determine the rightness of a given act. Third, it is not enough that an act produces greater good than evil to be morally right; it must do so more than any other act that could have been performed instead. Finally, utilitarianism is not, like egoism, an ethic of self-interest, but neither is it an ethic of self-sacrifice (altruism). The utilitarian is an impartial judge who chooses an act that maximizes the good which may result in promoting his self-interest or self-sacrifice. The main point is that individual consequences are not considered in making a moral judgment. Utilitarians, like egoists, differ in their conceptions of what constitutes intrinsic good, ranging from quantitative hedonism (physical pleasure), qualitative hedonism (mental and spiritual pleasures), and non-hedonism (encompassing all pluralistic theories of good as well as monistic concepts of power, freedom, and good will). Major utilitarian philosophers falling into these categories respectively are Jeremy Bentham (1879), John Stewart Mill (1951), and Hastings Rashdall (1924). Utilitarians are further differentiated by whether the principle of utility should be applied to particular acts themselves or to general rules instead.

The other major category of normative obligation is deontology, which holds that there are features of an act that make it right or wrong regardless of the consequences. An act can be wrong in itself, even if it results in increased happiness. Deontological theories are either monistic or pluralistic. Immanual Kant posited one central moral rule, the "categorical imperative," which states, "act as if the maxim of thy action were to become by thy will a universal law of nature"
(1972, p. 229). In other words, to determine the morality of an act envision the act as a universal law — if everyone were required to act the same way. Modern deontologists, W.D. Ross (1930) and John Rawls (1971) hold a pluralistic view and acknowledge that several principles can be simultaneously applied to an act.

**Metaethics.** Metaethics is concerned with two basic issues, how ethical statements are justified and how ethical terms are defined. Traditionally, the field of metaethics is divided into three categories, naturalism, non-naturalism, and non-cognitivism.

The theory of naturalism asserts there is moral truth — ethical statements are either true or false. In addition, all ethical terms can ultimately be defined in non-ethical terms and thus, ethical questions can be answered empirically.

Non-naturalism, like naturalism, holds there is moral truth. Ethical terms, however, cannot be defined in non-ethical terms and although ethical issues can be answered, empirical observation is not a means for doing so. Moral knowledge is obtained through intuition and rational insight.

Finally, non-cognitivism, asserts there is no moral truth — ethical statements are neither true or false. Analyzing and understanding what is meant in an ethical term is more important than justifying it. The function of ethical statements is to express emotions, influence others' attitudes, or rationally guide human conduct.

In summary, the moral philosopher addresses two major issues. First, he endorses some normative theory of what is right or wrong, good or bad allowing him rationale for making moral choices. Second, he must
justify the normative stand he adopts through either empirical observation, intuition, or rational insight. Metaethics, traditionally, is a more difficult philosophical task.

Moral development

The psychological perspective on values and ethics is primarily concerned with explaining differences in moral behavior among individuals and within the same individual over a period of time. The more popular theory of moral development is the cognitive-developmental approach, first introduced by John Dewey.

Moral education, according to this perspective, stimulates active thinking about moral issues and decisions. According to Dewey:

The aim of education is growth or development, both intellectual and moral. Ethical and psychological principles can aid the school in the greatest of all constructions - the building of a fine and powerful character. Only knowledge of the order and connection of the stages in psychological development can ensure this. Education is the work of supplying the conditions which will enable the psychological functions to mature in the finest and fullest manner. (cited in Kohlberg, 1975, p. 670)

Piaget (1932) extended Dewey's theoretical perspective through direct observation and interviews with children. Later, Kohlberg (1969) redefined and validated (through longitudinal and cross-cultural study) the Dewey-Piaget levels and stages. These cognitive-developmental theories make the following basic assumptions:

1. Basic development involves basic transformations of cognitive structure which cannot be defined or explained by the parameters of associationistic learning, and which must be explained by parameters of organizational wholes or systems of internal relations.

2. Development of cognitive structure is the result of processes of interaction between the structure of the
organism and the structure of the environment, rather than being the direct result of maturation or the direct result of learning.

3. Cognitive structures are always structures of action. While cognitive activities move from the sensorimotor to the symbolic to verbal-propositional modes, the organization of these modes is always an organization of actions upon subjects.

4. The direction of development of cognitive structure is toward greater equilibrium on this organism-environment interaction. This balance in interaction, rather than a static correspondence of a concept to an object, represents "truth", "logic", "knowledge", or "adaptation" in their general forms. (Kohlberg, 1969, p. 348)

Central to the cognitive-developmental approach is the doctrine of cognitive stages, where the development of thinking abilities occurs in a sequence. Piaget (1960) cited the following general characteristics of cognitive stages:

1. Stages imply distinct or qualitative differences in children's modes of thinking or of solving the same problem at different ages.

2. These different modes of thought form an invariant sequence, order, or succession in individual development. While cultural factors may speed up, slow down, or stop development, they do not change its sequence.

3. Each of these different and sequential modes of thought forms a "structured whole."

4. Cognitive stages are hierarchial integrations. Stages form an order of increasingly differentiated and integrated structures to fulfill a common function.

The cognitive-developmental framework, therefore can be summarized as follows: 1) the emphasis is on thinking or cognition; 2) the structure of thought is distinct from its content; 3) cognitive structure develops via interaction with the environment; and 4) the development of thinking abilities proceeds in a sequence of stages.
Jean Piaget. Piaget's conceptualization of moral development is presented in his text *The Moral Development of the Child* (1948). Here, he posits that reactions to a moral situation evolve from an interpretive, cognitive framework which organizes stimuli into basic patterns, concepts and categories. The individual actively interprets stimuli to construct meaning and assimilate social experience into patterns. Influenced by the sociologist, Emile Durkheim (1961), who argued that the essence of moral education is teaching children to limit themselves in obedience to society's moral rules and to dedicate themselves to the good of society, Piaget focused his studies on how children developed a respect for rules and a sense of solidarity with their society. He identified two separate moralities, heteronomy and autonomy, which overlap during different periods in a child's life. Autonomy, however, always follows heteronomy and within these moralities are substages of development. An egocentric or pre-moral stage precedes the first morality.

Egocentrism is characterized by the child's inability to differentiate his perspective from others due to his lack of awareness of others. He is unable to compare his ideas or values with others, nor is he able to evaluate his perspective. The child, in essence, is non-moral and is simply reacting to his environment. Through social interaction, the child emerges from this stage and develops respect for societal rules. Heteronomy refers to the unilateral respect a child holds towards adults and authority. The child is morally constrained by established social rules, without understanding these rules as instruments for structuring social cooperation. Behavior is judged on the basis of its exact conformity to established rules, the amount of
objective damage it causes, and whether it receives a punishment. In essence, there is no real concept of good; right is defined as obedience to the will of authority.

Autonomy is the "morality of cooperation" which develops via peer interaction. Logical skills are developed and the child is capable of comparing his/her perspective to that of others. Evaluation of these differing perspectives evolves and morality is seen in terms of social necessity and mutual respect among equals. Moral judgments become an intrinsic process rather than externally imposed regulations.

Piaget differentiated heteronomy from autonomy by contrasting the behavior and verbalizations of younger and older children in several dimensions:

1. Younger children tend to make absolute moral judgments, not realizing that there may be several relative points of view.

2. The heteronomous child tends to judge an act to be bad if the actor is punished, not recognizing the possibility of an unjust punishment.

3. Younger children tend to have an immature conception of reciprocity, using it as an exact return of good or evil instead of considerate treatment of others as a basis.

4. The heteronomous child tends to view punishment as having only a punitive function and tends to favor severe punishments, whereas the autonomous child believes that punishment is justified only if it has a reformative or restitutive function.

5. Using moral realism, the child tends to base his judgment about the badness of an act solely on the consequences of the act instead of considering the intention of the person performing the act.

6. Younger children tend to believe in immanent justice, which is the belief in automatic punishment which emanates from things themselves or which flows from God's will.

7. Younger children do not consider the importance of the intentions or purpose in evaluating an action. (Boyce and Jensen, 1978, p. 94)
The concept of justice is inherent to Piaget's theory of moral development, which is learned through experience of reciprocity among equals. He stated:

It is often at the expense of the adult and not because of him that the notions of just and unjust find their way into the youthful mind. In contrast to a given rule, which from the first has been imposed upon the child from outside and which for many years he has failed to understand, such as the rule of not telling lies, the rule of justice is a sort of eminent condition of social relationships or a law governing their equilibrium (1965, p. 198).

Piaget's concept of justice is a social system of cooperation that attempts to balance the interests of the participating individuals, where human thought is the mechanism for constructing such equilibrated systems.

Lawrence Kohlberg. Kohlberg (1969, 1971, 1976, 1981) and his associates have elaborated the major points of Piaget's work. Consistent with the cognitive-developmental framework, the "Kohlbergian" approach makes the following assumptions:

1. There is an underlying interpretive framework from which social-moral situations are perceived and judgments formulated.

2. Cognitive structures are schemas of social understanding developed by the person in interaction with others.

3. Concepts of justice are the key development in moral understanding.

4. Development involves the successive transformations of basic organizing principles. (Carroll and Rest, 1982)

Kohlberg extended Piaget's (1932) work in proposing a more elaborate set of stage descriptions (six as opposed to two), taking a firmer position on the stage concept than Piaget did, introducing new assessment techniques, conducting empirical investigations, and becoming involved
in moral education programs (Carroll and Rest, 1982). Kohlberg's six stages of moral development are presented in Table 1.

According to Kohlberg, moral development is sequential and directed. Through cross-cultural research, Kohlberg and Turiel (1971) demonstrated there are universal human modes or principles of moral thinking which progress through an invariant order. Principles refer to universal modes of choosing applied to all situations which represent morally self-justifying reasons for action. Kohlberg stated:

> Justice is not a rule or a set of rules, it is a moral principle. By moral principle we mean a mode of choosing which is universal, a rule of choosing which we want all people to adopt always in all situations. We know it is all right to be dishonest and steal to save a life because it is just, because a man's right to life comes before another man's right to property. . . . A moral principle is a principle for resolving competing claims, you versus me, you versus a third person. There is only one principled basis for resolving claims; justice or equality. Treat every man's claim impartially regardless of the man. (1970, p 69-70)

Kohlberg's emphasis on universal principles can be traced to the philosophy of Immanuel Kant. The concept of "justice and fairness," which Kohlberg at least partially attributes to John Rawls (1971), grounds the Kohlbergian approach in a more modern philosophical controversy over the sources of rules, criteria for evaluation of justice and the importance of legal rules in a moral order (Willging and Dunn, 1981).

Moral judgment is thus seen as a rational process, rather than a mechanical application of internalized rules. Kohlberg (1973) made the following points about his stages and their sequence:

1. They are qualitatively different modes of thought rather than increased knowledge of, or internalization of, adult moral beliefs and standards.
I. Preconventional level

At this level, the child is responsive to cultural rules and labels of good and bad, right or wrong, but interprets these labels either in terms of the physical or the hedonistic consequences of action (punishment, reward, exchange of favors) or in terms of the physical power of those who enunciate the rules and labels. The level is divided into the following two stages:

Stage 1: The punishment-and-obedience orientation. The physical consequences of action determine its goodness or badness, regardless of the human meaning or value of these consequences. Avoidance of punishment and unquestioning deference to power are valued in their own right, not in terms of respect for an underlying moral order supported by punishment and authority (the latter being Stage 4).

Stage 2: The instrumental-relativist orientation. Right action consists of that which instrumentally satisfies one's own needs and occasionally the needs of others. Human relations are viewed in terms like those of the marketplace. Elements of fairness, of reciprocity, and of equal sharing are present, but they are always interpreted in a physical, pragmatic way. Reciprocity is a matter of "you scratch my back and I'll scratch yours," not of loyalty, gratitude, or justice.

II. Conventional level

At this level, maintaining the expectations of the individual's family, group, or nation is perceived as valuable in its own right, regardless of immediate and obvious consequences. The attitude is not only one of conformity to personal expectations and social order, but of loyalty to it, of actively maintaining, supporting, and justifying the order, and of identifying with the persons or group involved in it. At this level, there are the following two stages:

Stage 3: The interpersonal concordance or "good boy - nice girl" orientation. Good behavior is that which pleases or helps others and is approved by them. There is much conformity to stereotypical images of what is majority or "natural" behavior. Behavior is frequently judged by intention - "he means well" becomes important for the first time. One earns approval by being "nice."

Stage 4: The "law and order" orientation. There is orientation toward authority, fixed rules, and the maintenance of the social order. Right behavior consists of doing one's duty, showing respect for authority, and maintaining the given social order for its own sake.
III. Postconventional, autonomous, or principled level

At this level, there is a clear effort to define moral values and principles that have validity and application apart from the authority of the groups or persons holding these principles and apart from the individual's own identification with these groups. This level also has two stages:

Stage 5: The social-contract, legalistic orientation, generally with utilitarian overtones. Right action tends to be defined in terms of general individual rights and standards which have been critically examined and agreed upon by the whole society. There is a clear awareness of the relativism of personal values and opinions and a corresponding emphasis upon procedural rules for reaching consensus. Aside from what is constitutionally and democratically agreed upon, the right is a matter of personal "values" and "opinion." The result is an emphasis upon the "legal point of view," but with an emphasis upon the possibility of changing law in terms of rational considerations of social utility (rather than freezing it in terms of Stage 4 "law and order"). Outside the legal realm, free agreement and contract is the binding element of obligation. This is the "official" morality of the American government and constitution.

Stage 6: The universal-ethical-principle orientation. Right is defined by the decision of conscience in accord with self-chosen ethical principles appealing to logical comprehensiveness, universality, and consistency. These principles are abstract and ethical (the Golden Rule, the categorical imperative); they are not concrete moral rules like the Ten Commandments. At heart, these are universal principles of justice, of the reciprocity and equality of human rights, and of respect for the dignity of human beings as individual persons.

2. Movement through the stages is always forward and step-by-step.

3. The stages form an integrated whole. There is a general factor of a moral stage cross-cutting all dilemmas, verbal or behavioral, with which an individual is confronted.

4. The stages are hierarchial integrations. Subjects comprehend all stages below their own and are not more than one above their own. Each new stage represents a synthesis between the prior stage and new elements; in this way, a given stage serves as a prerequisite for a higher stage, or a later mode of thought.

5. Stages are viewed neither as the direct reflection of motivation nor direct reflection of learning. Stages represent the equilibrated pattern of interaction between the organism and the environment. (p. 192)

Although Kohlberg gives no specific age guidelines for each stage, moral development is dependent upon underlying cognitive development. He stated:

Since moral reasoning clearly is reasoning, advanced moral reasoning depends upon advanced logical reasoning; a person's logical stage puts a certain ruling on the moral stage he can attain. A person whose logical stage is only concrete operational is limited to the preconventional moral stages (Stages 1 and 2). A person whose logical stage is only partially formal operational is limited to the conventional moral stages (Stages 3 and 4). (1975, p. 671)

Most individuals, however, are higher in logical stage than they are in moral stage. Kohlberg (1975) reported over 50% of late adolescents and adults are capable of formal reasoning, but only 10% of these adults displayed principled (Stages 5 and 6) moral reasoning. In addition, stage acquisition has been demonstrated to correlate with ego identity status (Podd, 1972; Hult, 1979). Identity achievement and moratorium subjects function at significantly higher moral reasoning levels than do diffusion subjects.
Role-taking, "the level at which the person sees other people, interprets their thoughts, and feels and sees their role or place in society" (Kohlberg, 1976, p. 32), is another prerequisite skill to achieving full moral reasoning. Role-taking ability progresses from an ability to comprehend relationships towards perceptions of social systems and the rules that support such systems (Silman, 1976). Only after the individual attains a social perspective can he/she develop the capacity to reason about the principles which support a "just" social system. Developing a social perspective "can be mostly emotional, are manifestly social, and determine choice and action" (Kohlberg, 1973, p. 193).

In order for a formal operational adolescent to attain morally principled reasoning, he must undergo social and moral experiences...that lead him to transform his modes of judgment of the morally right and fair. Often, the experiences that promote such change have a fairly strong emotional component. As emotion enters into experiences leading to change, it is, however, emotion that triggers and accompanies rethinking. (Kohlberg, 1973, p. 193)

A number of factors, therefore, affect moral development. Critical are social and educational climates that provide opportunities for group participation, shared decision-making, and assumption of responsibility for consequences of action (Kohlberg and Turiel, 1971). Also, whenever the educational process intentionally creates cognitive conflict and disequilibrium by showing inadequacies of a person's mode of thinking, the individual is stimulated to seek higher and more adequate levels of moral reasoning (Rest, Turiel, and Kohlberg, 1969).

One line of empirical investigation has been to determine the relationships between moral judgment and moral behavior. Behavioral measures include delinquency - non-delinquency, cheating,
participation in civil rights demonstrations, sharing, keeping a promise, helping a person in distress, distribution of rewards, and resistance to conformity pressure. Blasi (1980) in a review of 70 such studies, found 78% of these reported at least some significant relationship of moral judgment and behavior leading him to conclude there is empirical support for the relationship. The research, however, does suggest other intervening variables (e.g. ego strength, social roles, acquaintance with social norms, and/or social learning factors). Kohlberg (1975) stated:

Moral judgment, while only one factor in moral behavior, is the single most important or influential factor yet discovered in moral behavior [and] while other factors influence moral behavior, moral judgment is the only distinctively moral factor in moral behavior. . . . [In addition], moral judgment change is long range or irreversible; a higher stage is never lost. Moral behavior as such is largely situational and reversible or "loseable" in new situations. (p. 672)

In summary, moral development is a process that involves transformation and integration of cognitive development. An individual's logical stage and role-taking ability have a direct relationship on moral reasoning ability. Although other factors affect moral development, there is supporting evidence that a relationship between moral judgment and moral behavior exists.

Moral judgment and the professional role

Ethical issues and dilemmas surround the professional role. Since the time of Hippocrates, morality has been recognized as a central issue in the practice of medicine. Other professions have followed in the development of ethical codes to insure the protection of human rights
and individual autonomy. These codes provide guidelines for professional action; a frame of reference for judgments in complex situations. Yet, professional ethical practice and decision making is a highly individualistic, intuitive, and common sense process rather than one well-reasoned and well-informed (Ketefian, 1981a). Ideally, a professional should be able to engage in the post-conventional level of moral reasoning and act as a morally responsible agent.

Murphy (1976), however, found that 95% of nurses (in a sample of 120) were at the conventional level of moral reasoning. Similarly, Schoenrock (1978) found insignificant numbers of nurses functioning at the post-conventional moral reasoning level. Munhall (1980) also found the average level of reasoning for baccalaureate nursing students was at the conventional level. Faculty, however, were found to be at the principled level. Application of the findings to the nursing profession were cited by the author:

The nursing student or nurse who is stabilized at a conventional level of moral reasoning bases her moral obligation on the maintenance of the social system and loyalty to established institutions and social relationships (Kohlberg, 1976). In contrast, the principled level nursing student or nurse appreciates that societies and social relationships can be arranged in many possible ways maximizing certain values and minimizing others. Accordingly, nurses will question authority and will abide by social norms only insofar as the insure human values (Kohlberg, 1976; Rest, 1975). (p. 61)

Wilkins (1980) found preservice secondary education students at the level of conventional thinking which led him to question whether teachers at this level could be effective in fostering student development at or beyond this level. Bloom (1976) described masters
degree candidates in education as being less capable of high-level moral reasoning than other groups of college students. Griffore and Lewis (1978) found practicing teachers to be at the moral reasoning level of the general adult population (Stage 4) which is significantly above the level of junior and senior high school students. These findings led the researchers to conclude that teachers can exert a positive influence on children's moral development. Tan-Willman (1978), however, found preservice Canadian teachers operated primarily on the "law and order" orientation (Stages 3 and 4). Citing studies that correlate level of moral reasoning with creative imagination and divergent thinking (MacKinnon, 1965; Kohlberg, 1969; Barron, 1968; Doherty and Corsini, 1976; Bloom, 1976) the author seriously questioned teachers' ability to teach democratic principles as well as foster creative imagination and divergent thinking in the classroom.

Sheehan et al. (1980), in a sample of 244 pediatric residents, who were graduates of both American and foreign medical schools, found level of moral reasoning an accurate predictor of clinical performance. High moral reasoning virtually excludes the possibility of poor performance therefore indicating that moral reasoning itself is an important component of clinical behavior. Similarly, Ketefian (1981a) in a sample of practicing nurses, found moral reasoning related to moral behavior, using the Code for Nurses as the behavioral criterion. In another study (Ketefian, 1981b), moral reasoning was positively correlated \( r = .5326 \) to critical thinking ability of registered nurses. In addition, nurses who had professional education (baccalaureate or higher degree) had higher levels of moral reasoning than did technical (associate degree) graduates.
Thielens (1969) studied the development of professional ethical responses to problem situations during law school and compared them to those of practicing lawyers. Responses were categorized as "ethical" or "unethical" in accordance with professional rules. He found an increase in ethical responses as students progressed through law school. Practicing lawyers, however, had lower ethical standards than students. Using a framework similar to Kohlberg's, Tapp and Levine (1974) found law students showed a higher degree of conventional morality than other segments of society (college students, teachers and prison inmates). They stated:

[We] observed that third year law students were just as conventional in their perspectives as teachers and college students. Professional legal education apparently exerts little influence on changing views on the purpose of law. The focus of these graduating lawyers was on rules serving to prevent chaos, not on their establishing consistency, clarity and due process, or guaranteeing personal liberties and human rights. Although a few law students (8%) and slightly more prison inmates (16%) demonstrated an appreciation of post-conventional principles, the model orientation of system maintenance was dominant for all adult groups. (p. 25-26)

Finally, using the Defining Issues Test (DIT) (Rest, 1976), Willging and Dunn (1981) found no difference in the moral reasoning levels of law students compared to students in other professional schools, with the exception of seminary students and students of moral philosophy. The "P" score of law students, or "the relative importance a subject gives to principled moral considerations in making a decision about moral dilemmas" (Rest, 1974, p. 3), was found to be 52. Rest (1974) reported junior high students have P scores in the 20's and low 30's, senior high students in the upper 30's, college underclassmen in the 40's, college
upperclassmen in the 50's, graduate students in the 60's and academic specialists in the moral-social-political area in the 70's. The primary variable in the progressive change appears to be continuation of the educational process. In fact, adults ordinarily do not show much change in their DIT scores after they leave the academic environment (Rest, 1976).

Moral judgment is necessary for effective professional role performance. Professional moral reasoning, however, is not demonstrated to be at ideal levels. Education is a critical variable in logical, moral and social development and therefore planned learning strategies for enhancement of these abilities should be integrated into the professional curriculum.

**Moral education**

Rapid technological change, white-collar crime and Watergate-type occurrences have perpetuated renewed interest in the teaching of values, morals and ethics in higher education. The Hastings Center Report (Callahan and Bok, 1980) for example, reported an estimated 11,000-12,000 courses in ethics were taught at undergraduate and professional school levels. Educators hope that the renewed emphasis on moral education will achieve the following goals:

1. Introduce normative inquiry into higher learning, in order to supplement the typically narrow and value-free methodology of contemporary academic disciplines;

2. Revitalize liberal education, especially the humanities, and restore the integration focus that has been lost;

3. Provide students with an effective and rigorous preparation for dealing adequately with critical human choices, especially those that have moral consequences;
4. Provide an education that affects both conduct and thought, the formation of character as well as the development of intellect. (Morrill, 1980, p. 7)

Attempts to teach values, ethics and fostering moral development encompass vastly different approaches. Morrill (1980) wrote:

One can refer broadly to the need for programs in ethics and values, and be understood and affirmed by the like-minded. Yet as assumptions are discussed and actual programs are established, the apparent unity begins to dissolve. One quickly finds that teaching values and ethics and fostering moral development encompass vastly different, even conflicting endeavors. Language tends to hide the diversity as educators use the same terms in decidedly different ways. Serious and deep confusion then typically sets in, as one method or theory is tacitly or consciously assumed to be the whole of moral and values education. (p. 9-12)

Based on an analysis of educational objectives and their related theoretical assumptions, Morrill (1980) described four approaches to moral education: (1) values clarification; (2) values inquiry; (3) moral development, and (4) normative and applied ethics.

Values clarification. The term values clarification was first used by Louis E. Raths to represent an extension of John Dewey's (1909) thinking about the need to move away from teaching isolated moral lessons towards developing students' abilities to formulate and test their own judgments. The focus therefore, is on the process of valuing rather than the content of values that are chosen. Raths et al. (1966) described seven criteria of the valuing process:

Prying one's beliefs and behaviors

(1) Prying and cherishing

(2) Publicly affirming, when appropriate

1Morrill presents an excellent synthesis of the approaches to moral education and applies them to higher education. His work is drawn from extensively in this section.
Choosing one's beliefs and behaviors

(3) Choosing from alternatives

(4) Choosing after consideration of consequences

(5) Choosing freely

**Acting on one's beliefs**

(6) Acting

(7) Acting with a pattern, consistency, and repetition

Many pedagogical approaches attempt to address values (e.g. moralizing, inculcating, modeling, rewarding and punishing) and have been found to be ineffective. Berman (1968) noted:

> These attempts have been met with more or less success - probably less because most persons do not hear unless they are ready to hear. This readiness usually comes about through an active, dynamic process rather than a passive one. (p. 172)

In contrast, numerous approaches to values clarification have evolved and have produced a more positive impact on values education.

Lockwood (1978) reviewed the research on the effects of values clarification primarily in elementary and secondary school children. He reported the following claimed effects: improved self-esteem, self-concept, and personal adjustment (Clark, 1974; Covault, 1973; DePetro, 1975; Fitzpatrick, 1975; Guziak, 1975; McCormick, 1976); increased reading efficiency (Fitzpatrick, 1975; Pracejus, 1974); increased achievement in biology (Barman, 1975); positive effects on students' initiation and self-direction of classroom activities and a reduction in the frequency and acuity of negative behaviors, such as apathy, flightiness, uncertainty, inconsistency, drifting, over-conforming, and over-dissenting (Covault, 1973; Guziak, 1975); and decline in drug usage (Clark, 1974). No systematic effect was found on
value priorities (DePetro, 1975; Pracejus, 1974; Sklare, 1975) nor on dogmatism or preferences for traditional or emergent values (Sklare, 1975).

Numerous strategies have been developed for values clarification. Simon et al. (1972) presented seventy-nine in one handbook. An isolated review of the effectiveness of each of these is beyond the scope of this study. They are, however, taken in concert to represent the seven stated criteria of the valuing process. Examples of some strategies include clarifying responses, active listening, and role playing. Many audiovisual materials and texts are available for classroom use.

Values clarification, however, is only the first step in moral education which focuses on self-awareness of personal values. It does not attempt to present normative stances on the right, wrong, good, and/or bad of a given value. Morrill (1980) stated:

> The method emphasizes the psychology of personal choice and growth, which confounds with the nature of values themselves. The obligatory and normative dimensions of the experience of values are given virtually no direct attention, nor does the technique address as ends in themselves the values that inhere in the social and political dimensions of life. . . . When examined as a systematic theory of values, values clarification is unable to answer the questions posed to it; or, it unknowingly provides answers to the wrong questions. (p. 17)

With its present form and emphasis, Morrill (1980) questions the role of values clarification in academic programs and classrooms in higher education. With modification (e.g. social and political analysis), he sees the methods of values clarification having the potential for "grasping intellectually the unity of personal experience as lived" (p. 18).
Values Inquiry. The goal of values inquiry and analysis is to "grasp the meaning and the possibility of human situations by discerning in them the values that motivate human choice and decision" (Callahan and Bok, 1980, p. 12). Based on the assumption that people base their judgments on an ascribed set of values, value analysis, as a descriptive intellectual method, discloses "decisive aspects of human meaning" (Morrill, 1980, p. 19).

Earl J. McGrath (1974) proposed values inquiry be integrated into higher education through the restructuring of general education to include interdisciplinary courses focusing on the pressing political, social, racial, economic, and international problems of today. The primary aim of these courses would be to assist students in understanding and clarifying the values by which the quality of their lives is determined. Students would develop the capacity to assess the consequences of various actions.

As Morrill (1980) notes, McGrath is extending the basic ideas of values clarification to a communal and social level by focusing on social and moral issues. Implied in McGrath's writings is a normative dimension to the choice among values. The basic human values, however, from which choices should be made are not articulated.

Morrill (1980) supports values analysis as a means of providing professionals with the sensitivity to wider questions of human meaning and obligation. He stated:

As an explicit method, values inquiry and analysis can help us explore personal values as well as broader intellectual, esthetic, ethical, social, and political values. In all cases, this analysis compels us to unearth the commitments and claims that stand behind the manifold particulars and possibilities of a given situation. . . . Value analysis can provide a superb interdisciplinary theme for liberal and professional education. (p. 79-81)
Applied to professional education, values analysis provides a medium for exploring both the overt and covert value systems underlying the profession.

**Moral Development.** Moral education from this perspective is grounded in the work of Piaget and Kohlberg. Moral growth is stimulated by intentionally creating cognitive conflict and disequilibrium. Moral education thus stresses open Socratic peer discussion of value dilemmas which enables the individual to "see things previously invisible to him" (Kohlberg, 1970, p. 82). The characteristics of this approach are

(1) Change occurs through the process of reasoning rather than by the study of particular beliefs.

(2) Students in class are at different stages therefore, the aim is to aid movement of each to the next stage, not convergence on a common pattern.

(3) The teacher's own opinion is neither stressed nor invoked as authoritative. It enters in as one of many opinions, it is to be hoped at a next higher stage.

(4) The notion that some judgments are more adequate than others is communicated. (Kohlberg, 1975, p. 674)

Kohlberg offers no set prescription or content for moral education, just a theoretical structure that can be applied to various disciplines. His own educational strategies have focused on the "just community" approach. A just community consists of approximately fifty high school students who engage in discussing real-life moral situations and actions utilizing the concept of participatory democracy. This method provides extensive opportunities for role-taking and, according to Kohlberg, achieves a higher level of perceived institutional justice.

Lockwood (1978) critically reviewed eleven studies grounded in the theory and practice of Kohlberg-based moral education. He identified
two basic types of treatments employed, direct discussion of moral dilemmas and ethical issues and "psychological education" in which students engage in a variety of activities drawn from counseling psychology and practice (e.g., empathy training, role-playing). Lockwood drew several conclusions based on this research. The direct discussion approach generally produces significant development in moral reasoning. The effects of the treatment, however, vary substantially from subject to subject. In addition, the treatment appears to have a more pronounced effect on subjects who reason at the lower stages. The psychological education approach has less empirical strength. It appears, however, that there is tentative support for a treatment effect.

The construct of moral development extends beyond the Kohlbergian framework. For example, Trow (1976) argued that the practice and discipline of good scholarship itself contributes to the moral development of college students. In addition, colleges and universities intentionally and non-intentionally affect students' moral development through formal course offerings, faculty role models, student peer groups, and the political structure of the institution.

The overall effect of the college experience on students' development has been extensively studied (e.g., Feldman and Newcomb, 1969; Heath, 1968). Several studies have more explicitly examined the development of morality and values during college. Biggs and Barnett (1981) found freshman students with low moral reasoning scores achieved higher scores as upper classman significantly related to their causal attribution beliefs regarding personal responsibility and their college grade point average. The investigators contend these findings
support Fishbein and Ajzen's (1973) position that attribution of responsibility can best be viewed as a moral judgment. The relationship between level of moral reasoning and grade point average supports the cognitive-developmental framework. Biggs et al. (1977) found freshman with higher principled morality scores had higher academic-conceptual, contemporary-cultural, artistic, and literary precollege experience scores, indicating literary and artistic experiences may be associated with moral judgment. They recommend the inclusion of freshman humanities into the college curriculum in order to provide these experiences.

Perry (1970) conducted a longitudinal study (1954-1963) of the intellectual and ethical development of Harvard undergraduate students. From detailed interviews, he abstracted a developmental scheme consisting of nine positions or stages. Each stage represents a structure through which thought and experience are processed and organized into characteristic patterns.

Perry groups the nine Positions into three parts, each consisting of three Positions.

In Positions 1, 2, and 3, a person modifies an absolutistic right-wrong outlook to make room, in some minimal way, for the simple pluralism we have called Multiplicity. In Positions 4, 5 and 6, a person accords the diversity of human outlook its full problematic stature, next transmutes the simple pluralism of Multiplicity into contextual Relativism, and then comes to foresee the necessity of personal Commitment in a relativistic world. Positions 7, 8 and 9 then trace the development of Commitments in the person's actual experience. (p. 57)

Three Positions of deflection (Temporizing, Escape, and Retreat) are available alternatives at any point of development when the person feels "unprepared, resentful, alienated or overwhelmed to a degree which makes
his urge to conserve dominant over his urge to progress" (Perry, 1970, pp. 57-58).

Perry's study infers that students develop personal commitment (the affirmation of identity among multiple responsibilities) from a special realization of community derived from reciprocal acts of recognition and confirmation. Perry stated:

The individual may himself derive a sense of community by observing that others are like himself in that their cares and quandries are like his own. His sense of membership is enormously strengthened, however, if in addition he experiences himself as seen by others in the same way. (p. 213)

Moral development, then, depends not on what subject matter is taught, but on the total process of how it is communicated (Morrill, 1980). Perry asserts, therefore, that educators must exhibit a "certain openness -- a visability in their own thinking, groping, doubts, and styles of Commitment" (p. 213). In addition, educators must assume the duty of "confirming the student in his community with them -- a membership he achieves (at the very least as an apprentice or colleague-to-be) through his own making of meaning, his daring to take risks, and his courage in committing himself" (p. 213).

Chickering (1969) identifies three sequential, overlapping stages in the college students' development towards increased congruence of behavior and values, (1) humanizing values; (2) personalizing values; and (3) developing congruence. During the first stage, humanizing values, the student shifts from absolute, uncompromising beliefs towards a more relative view which flexibly applies given beliefs to changing circumstances. The personalization of values is an internalizing process through which beliefs are "accepted as part of
oneself and as what one stands for. They are consciously held and can be articulated. And therefore, they also can be challenged and can be modified in the light of further experience, or new evidence from the experiences of others" (Chickering, 1969, p. 139). Congruence yields behaviors consistent with held beliefs.

These developmental views of moral education have in common an emphasis on the process of moral thinking as opposed to moral content. Curriculum planning that supports moral development in this context must provide a mechanism for identification of students' present developmental stage and recognition of the impact of the "hidden" curriculum.

**Normative and Applied Ethics.** Normative and applied ethics are built upon traditional moral philosophy, the goal of which is to explore and to justify what ought to be done in a given moral situation. Morrill (1980) stated:

> Typically, this endeavor involves close and rigorous analysis of relevant facts and circumstances and the development or application of appropriate principles and rules of moral conduct. This applied form of normative ethics does not necessarily aim to prescribe another person's moral choices, but seeks to provide clarification, analysis, and critique of the moral arguments and issues at hand. (pp. 44-45)

The Hastings Center study (Callahan and Bok, 1980) asserted that courses in ethics, at both the undergraduate and graduate levels, should provide students the concepts and analytical skills that will "enable them to grapple with broad ethical theory in attempting to resolve both personal and professional dilemmas, as well as to reflect on the moral issues facing the larger society" (p. 48). Five goals central to all courses in ethics were outlined:
1. Stimulating the moral imagination. Students should recognize that moral choice has repercussions for others. Students must be led to understand that every human action can be seen from a moral point of view. The emphasis is on evoking students' emotions such as empathy, feeling, caring, sensibility.

2. Recognizing ethical issues. Students should learn to appraise their immediate responses, to identify their hidden assumptions and tacit premises, and to ask whether a visceral response alone is reasonable grounds for making a moral judgment. Students should be taught to distinguish ethical from political and economic questions in any given situation.

3. Developing analytical skills. Students should examine and distinguish among concepts of justice, autonomy, dignity, privacy, virtue, right, and good and ethical principles and moral values. Students should attempt to apply these concepts consistently and coherently in similar cases and to understand the logical and practical consequences of this application and the extent to which such consequences are worth considering.

4. Eliciting a sense of moral responsibility. Students must take ethics seriously and should relate ethical thinking to personal conduct.

5. Tolerating - and resisting - disagreement and ambiguity. Students should learn that even if ethical certainty is often impossible, ethical reasoning about choices can be precise. They should learn to tolerate differences of choice and to refrain from labeling opposite choices as immoral. At the same time, they must attempt to locate and clarify the sources of disagreement. (pp. 48-51; Callahan, 1980, p. 3-4)

Tracing the history of ethics in higher education, the Hastings Center report notes that by the 1930's ethics had practically no official place in the curriculum. Courses were isolated in departments of religion and philosophy. In a survey of course listings in 1977 and 1978 college, university, and professional school catalogues 2,757 courses concerned with ethics were identified. Eighty-nine schools, however, had no ethics courses listed at all. The professions of medicine, business, and law had the most significant number of offerings.
The study formulated several generalizations about ethics in professional curriculum based on the professions of law, business, public policy, biomedicine, journalism, engineering, nursing, and the social sciences. Although there are many experiments and curricular reforms, professional education is still strongly job- and profession-oriented in that its primary focus is the transmission of specific skills. Given that context, the introduction of ethics courses is not seen as a priority. The study notes that "few professional schools offer students the opportunity to examine the nature of their profession - its historical roots, its function in society, its sociological characteristics, and its assumptions about the political and social order" (p. 37). In addition, faculty in professional schools do not claim the study of ethics to be a major academic or teaching interest. There is evidence that scholarly work in the field of ethics will not assist faculty in attaining tenure in professional schools. The following generalizations, therefore, concerning the teaching of ethics in professional schools are made:

(1) It is seen as at best a secondary or tertiary function of the schools;

(2) Those who teach such courses are likely to be seen either as outside, or only barely on the fringe of, the main purposes of the schools;

(3) Those attempting to introduce ethics courses can normally expect considerable disinterest or resistance;

(4) The curriculum of almost all professional schools is already overcrowded and financial strain discourages any additions. (p. 37)

The strongest support for curricular inclusion of ethics is from the profession of medicine. About 90% of medical schools offer some exposure to the subject. In 1974, 53 schools reported having faculty
with assigned teaching responsibility for ethics (Callahan and Bok, 1980, p. 38). In contrast, only six accredited baccalaureate schools of nursing reported required courses in ethics, although most schools indicated ethical aspects were integrated throughout all nursing courses (Aroskar, 1977). Only six schools, however, had faculty who spent half or more of their time teaching ethics.

In 1974, the American Bar Association mandated that law schools teach the "history, goals, structure, and responsibilities of the legal profession and its members, including the ABA Code of Professional Responsibility" (Callahan and Bok, 1980, p. 40). In 1977, a survey of accredited law schools (Goldberg, 1977 cited in Kelly, 1980) reported 133 of 156 schools required completion of a course in professional responsibility. One-third of these courses, however, involved only 15 hours of instruction. Pipkin (1979) reported that ethics courses in the law curriculum have low status, are perceived by students to be less valuable, require less time and effort and are poorly taught compared to other law courses.

Despite the apparent neglect and half-hearted commitment to ethics by professional schools, the Hastings Center Report notes both internal and external pressures are being exerted to upgrade the role of ethics in the curriculum. The report foresees a central role for ethics in curricular designs of the future.

**Directions for professional education**

Each profession has an established ethical code which outlines the behavioral norms for the profession. To illustrate, excerpts from these codes are listed:
The educator values the worth and dignity of every person, the pursuit of truth, devotion to excellence, acquisition of knowledge, and the nurture of democratic citizenship. Essential to the achievement of these standards are the freedom to learn and to teach and the guarantee of equal opportunity for all. (Chapter 6B-1.01, Code of Ethics of the Education Profession in Florida, 1982)

The nurse provides services with respect for human dignity and the uniqueness of the client unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems (American Nurses' Association, Code for Nurses, 1976)

A lawyer should exercise independent professional judgment on behalf of a client (Cannon 5, The Code of Professional Responsibility, American Bar Association, 1970)

The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion (Section 1, Judicial Council of the American Medical Association, Principles of Medical Ethics, 1971)

Morrill (1980) described these codes as the formal etiquette of professional identity and belonging which not only describe a set of behavioral norms, but also encompass universal ethical principles of justice. He stated:


to learn [professional] ethics is to master the code, or the equivalent, that expresses the profession's normative self-understanding, and to learn the form of moral reasoning that the profession uses to develop these rules and regulations. . . . Professional ethics might well involve the effort to analyze the moral ideals and social responsibilities of the professions' members, the value commitments and conflicts in which they are involved, and the normative pattern of relationships they have with clients and colleagues. (pp. 49-50)
Morrill (1980) presented an educational approach he labeled values education which includes values analysis, consciousness, criticism, pedagogy, and development. Values education, in this context, has the potential to draw together fact and value; thought and action; absolutism and relativism; educational form and content; moral form and content; curricular specialization and integration; living and learning; affect and cognition; and intellect and consciousness.

The comprehensive development of professional integrity is a difficult challenge. Many question whether it can be done at all. Minimally, the Hastings Center Report (Callahan and Bok, 1980) recommended every student should have a systematic exposure to both ethical theory and applied ethics. Callahan (1980) stated:

All we can really do is leave students with the understanding that they are moral agents, that they have moral responsibilities, that there are human consequences of their actions. We can only hope they will remember this when they make professional decisions. (p. 6)

**Autonomy**

The concept of autonomy implies independence, identity, and authority. The autonomous individual makes choices and is responsible for the consequences of his/her actions. The professional, therefore, "assumes autonomy of judgment of his own performance" (Schein, 1972, p. 9).

The concept of individual autonomy originates from Kant who defined it as "the property the will has of being a law to itself" (cited in Dearden, 1975, p. 3). According to Dearden (1975) Kant's concept of the "categorical imperative" combines personal autonomy with the logical autonomy of moral discourse.
Erikson (1980) described autonomy as a stage of growth from which a sense of self-control without loss of self-esteem develops. Three dimensions of this stage were identified: "ways of experiencing accessible to introspection; ways of behaving, observable by others; and unconscious inner states determinable by test and analysis" (1950, p. 251). As a component of a "healthy personality" Erikson (1980) described the potential conflicts of exercising personal autonomy within a social system:

Where large numbers of people have been prepared in childhood to expect from life a high degree of personal autonomy, pride, and opportunity, and then in later life find themselves ruled by superhuman organizations and machinery too intricate to understand, the result may be deep, chronic disappointment not conducive to healthy personalities willing to grant each other a measure of autonomy. (p. 77)

Dearden (1975) identified the following characteristics of an autonomous person:

1) wondering and asking, with a sense of the right to ask, what the justification is for various things which it would be quite natural to take for granted.

2) refusing agreement or compliance with what others put to him when this seems critically unacceptable.

3) defining what he really wants, or what is really in his interests, as distinct from what may be conventionally so regarded.

4) conceiving of goals, policies and plans of his own, and forming purposes and intentions of his own independently of any pressure to do so from others.

5) choosing amongst alternatives in ways which could exhibit that choice as the deliberate outcome of his own ideas or purposes.

6) forming his own opinion on a variety of topics that interest him.

7) governing his actions and attitudes in the light of the previous sorts of activity. (p. 7)
Thus, the autonomous individual has a mind of his own and acts according to it. This, however, does not imply the individual acts without reference to established values, principles, or rules. The essence of autonomy is forming one's own independent judgment on the basis of criteria which are themselves made subject to continuous reassessment.

Autonomy is similar to, but distinguishable from the concept of freedom. Freedom exists in the absence of restraints. Phenix (1958) described independence and self-determination as complementary components of freedom. Independence implies the absence of external influence on the determination of behavior, whereas self-determination implies an inner cause for behavior. Three types of dependence are identified, the absence of which constitutes corresponding types of freedom. First, limits may be set within which a given activity may take place. No controls, however, are placed on the activity itself. Second, activity may be completely externally controlled, in which case freedom as independence is wholly lacking. Finally, partial external controls impinge on behavior, allowing the determination of behavior to evolve from both without and within the self. "In contrast to these types of dependence, independence means absence of limiting restraints and full determination from within rather than from without" (p. 265).

Freedom, according to Dearden (1975), is neither necessary nor sufficient for the existence of autonomy. Although freedom is necessary for autonomy to be exercised, it is not a necessary condition for its development.

Autonomy is not absolute and exists in varying degrees. A person is autonomous only "to the degree that what he thinks and does in important areas of life cannot be explained without reference to his own
activity of mind" (Deardon, 1975, p. 63). The exercise of such autonomy will be a source of considerable satisfaction and an intrinsic part of the individual's self-concept and identity.

**Autonomy and the professional role**

Professional autonomy exists on two separate but related levels, autonomy with respect to the individual, as discussed, and autonomy with respect to the occupational group or profession (Engel, 1969). This study is primarily concerned with personal professional autonomy. Interaction with the professional group, however, has direct and indirect impact on the individual's personal autonomy and thus warrants description.

Freidson (1973) claimed the central attribute of a profession is legitimate, organized autonomy or control over its own work, such that the people in the field are subject to evaluation only by other professionals in the same field. Autonomy, in this context, is a grant of power or status made by society. Howe (1980) stated:

> To gain autonomy, the profession must argue convincingly that its expertise is so specialized and esoteric that laymen cannot evaluate the quality of the service and that the members of the profession are motivated by a service ethic to act in the best interests of their clients and the public. (p. 181)

Autonomy, thus awards members of a profession power and status in work and social settings, through society's recognition of the profession's worth and trustworthiness of its practitioners. Autonomy from this perspective has been most significantly achieved by the professions of law and medicine.
Regardless of the profession's autonomous status, each individual practitioner has a right and obligation to exercise his/her autonomous judgment and self-directed actions. Engel (1970) stated:

In his relationship with his client, the professional is usually expected to be autonomous with such factors as responsibility, communication, and innovation, if he is to provide adequate service. . . . He assumes the responsibility for his client's welfare because he is more knowledgeable and is acting in his client's behalf. He defines the problem, determines procedures, and is accountable for the adequacy of his services. (p. 12)

Impacting significantly on the professional's autonomy, however, are bureaucratic organizations within which professionals work. Several investigators (Mills, 1951; Merton, 1957) view bureaucracy as detrimental to the professions. They suggest that professional standards decrease within a bureaucratic structure thus, professionals working within these structures are reduced to powerless technicians. The professional's autonomy is restricted, making him dependent upon the organization, which in turn controls and inhibits the application of his knowledge and skills, thus compromising the delivery of professional services to clients. In contrast, however, other investigators hold that bureaucracies are not necessarily deprofessionalizing and in fact are important vehicles for professional activities (Engel, 1969). For example, Carlin (1966) found lawyers in private practice who work in large law firms more likely to conform to ethical norms of the profession than those working in small firms or solo practice. Engel (1969) found physicians working in moderately bureaucratic settings (i.e. the privately-owned organization) perceived themselves to be higher in autonomy than those working in non-bureaucratic (i.e. solo
practice) or highly bureaucratic (i.e. governmentally-associated) organizations. The investigation concluded that if physicians' perceptions of their autonomy are reliable indicators of their true autonomy, the findings support the contention that bureaucracy is not wholly detrimental and depprofessionalizing.

The so-called "semi-professions" (e.g., teaching, nursing, social work) have more difficulty in exercising professional autonomy within organizational settings. Simpson and Simpson (1969) noted forces responsible for this difficulty include a "lack of mandate, necessity for bureaucratic control, and weak orientation toward autonomy" (p. 198). Jacox (1973) sees autonomy as possibly the most difficult professional attribute for nursing students to internalize because of the positive value nursing has traditionally placed on obedience, which is encouraged and supported within bureaucratic organizations. Jacox points out, however, that autonomy is a significant attribute if nursing is to deliver safe and effective nursing care instead of concentrating on coordinating the work of others and carrying out physicians' orders. Corwin (1961) in a study of several hundred nurses and student nurses found that bureaucratic and professional roles conflict. Those who subscribed to both roles simultaneously indicated that they were less able to carry out their ideal roles in practice than those who subscribed to one predominant role. Alexander, et al. (1982) found that nurses' perceptions of autonomy are influenced by personal attributes and the work setting. Locus of control orientation was positively correlated to perceived autonomy as well as a positive relationship with the immediate supervisor. In a longitudinal study (Weissman, 1981) nurses saw autonomy as the most important determinant of their job
satisfaction and that it had a subsequent effect on their decision to remain or to leave the hospital.

Lortie (1969) described the status of elementary school teachers' autonomy in the school system. He stated:

As an "employee," the teacher is a salaried worker subject to the authority of the public body which employs her. Continual claims to "professional" status presume the existence of a unified occupational group with a system of collegial controls. The rhetoric of "teaching as an art," however, projects autonomy rather than control; to use the artist as prototype is to stress individuality rather than standardization through bureaucratic or collegial controls. (p. 2)

Edgar and Warren (1969), in a study of power and autonomy in teacher socialization, found demands for autonomy often clash with existing attitudes of superiors and autonomy is more likely to be achieved by virtue of the teachers resources or qualities rather than by demand. Lortie (1969) contended that teachers maintain a degree of professional autonomy by maintaining equality of extrinsic rewards.

As long as school systems feature a distribution of authority where those in authority hold all formal powers, it may be that insistence on equality is the main assurance that teachers possess sufficient autonomy to make judgments they consider essential to effective teaching. (p. 41)

Thus, the concept of autonomy is an inherent requisite for effective exercise of the professional role. Dearden (1972) noted that becoming autonomous is not simply a maturational process. "It is at least in part a learning task set by a particular ideal of human development" (p. 74). Professional education is therefore challenged to develop autonomous practitioners who can function effectively within bureaucratic organizations.
Education and autonomy

The development of autonomy has been descriptively studied. Heath (1968) reported seniors became more autonomous as a result of their college experience whereas freshmen exhibited conflict with this dimension. Stein (1969) compared senior and sophomore nursing students using the Edwards Personal Preference Schedule. She found the sophomore class of 1968 was significantly less deferent and more autonomous than the class of 1965. In addition, there were significant increases in autonomy in the senior classes of 1965 and 1967, and decreases in deference for authority and abasement.

Deardon (1975) asserted autonomy as an educational ideal. The educational climate most conducive to the development of autonomy is one in which the individual is given the incentive to acquire understanding and self-knowledge. As advocated by Dewey (1938) and Berman (1968), learning strategies would include active participation in, and responsibility for, planning teaching-learning situations and subsequent implementation and evaluation of learning activities.

Aroskar (1976) conducted a study of accredited baccalaureate nursing programs in the United States to determine what faculty, senior students and administrators identify as critical behavioral elements in the development of autonomy. She found both students and faculty cited experiences that occurred in the clinical laboratory, where faculty, student, and patient interacted as the most significant. Students saw faculty assuming a facilitative role as supportive in situations where they were able to accept personal responsibility for selecting their own learning experiences. Faculty felt student self-evaluation contributed to the development of autonomy and administrators believed the
interaction with the physical school itself and holding students accountable for their behavior made a significant contribution. The investigator concluded:

1. The curriculum should contain planned opportunities at appropriate levels for each student to demonstrate independent decision-making and actions.

2. Faculty members have the major responsibility for developing curricular opportunities for students to learn autonomous behaviors through joint planning of teaching-learning situations.

3. The clinical setting, which combines theory and practice in direct or indirect patient care, is important for the educational development of autonomy. Therefore, the staff involved in student learning situations must allow and practice student autonomy.

4. Since students need assistance to examine their own dependence on faculty, there are strong implications for joint planning of learning experiences. Such cooperative curriculum planning should examine the "hidden" curriculum in order to identify it and incorporate it into the stated curriculum.

5. Behaviors related to (a) resistance to external controls, (b) creativeness, and (c) participation in the larger community should be jointly planned to reinforce learning autonomy.

The findings of this study focusing on autonomy are congruent with earlier studies cited on the development of professional identity (e.g., Huntington, 1957; Kadushin, 1969; Adams and Kowalski, 1980). The construct of professional identity is thus supported by the concept of autonomy which is best developed in the professional neophyte by active participation in the teaching-learning process, opportunities to enact the professional role, and a "mentorship" relationship with faculty.
Principles and Propositions Underlying Professional Practice

Based on the constructs of professional competence and identity, and the process of socialization, the following principles of professional practice are derived:

1. Professional practice is a sequence of actions undertaken by a person to serve others who are considered clients.

2. Each professional action is unique, purposeful and deliberate, manifested by observable behavior.

3. The effectiveness of professional practice is governed by the degree to which the individual achieves professional competence and sense of identity.

4. Professional competence is the tacit integration of cognitive and behavioral skills necessary for practice.

5. Professional identity is the integration of the individual's self-image with the aims, purposes and ideals of the profession.

6. A professional's role is the expectations mobilized by the identity across situations.

7. An achieved sense of professional identity provides the confidence, motivation, values and behavioral norms to effectively apply the acquired knowledge and skills in professional practice.

8. Professional identity is built upon an achieved sense of personal identity.

9. Unsuccessful identity formation results in the inability of the professional to commit to any single view of self or to integrate the various assumed roles arousing anxiety, apathy, and hostility toward the professional role.

10. Developing professional competence and identity leading to effective enactment of the professional role is a multistage process.

11. Professional development is significantly influenced by interaction with the educational setting, faculty, and student peer groups.

12. Modeling stimuli in the environment directly impacts on the professional neophyte.
13. Inherent in effective professional practice is the recognition by the professional of the impact of his/her actions on the environment.

14. The professional is accountable for his/her actions.

15. Effective professional practice requires the individual to continue to learn throughout his/her career, adapting to and impacting on changing environments.

16. Professional competence is achieved through the development of critical thinking, problem solving and creative skills; professional identity is achieved through the development of empathy, efficacy, integrity, and autonomy.

In the proposed paradigm of professional practice (Figure 2) eight concepts were identified (critical thinking, problem solving, judgment, creativity, empathy, self-efficacy, integrity and autonomy) as being supportive to the development of professional competence and identity. Through the socialization process, these impact on professional practice. This paradigm, as stated, is holistic in nature in that the concepts are interdependent and interrelated to one another. From a review of the theoretical and empirical literature on each of the concepts (Chapter III), a deductive approach was used to generate propositional statements that illustrate relationships between the concepts. A proposition is an untested relationship which begins to describe reality and is a precursor for a testable statement (hypothesis) (Burr, 1973). Propositions contribute to the understanding of the paradigm, which as stated, is neither provable nor testable by any clear rules of scientific evidence or proof. Within this context, the following propositions are formulated and schematically illustrated in Figure 4.

1. The greater the professional's ability to think critically, the greater the degree of professional autonomy.
Figure 4. Schematic Representation of Propositional Statements. Supporting the Paradigm of Professional Practice. (Each number in parentheses corresponds to the stated proposition.)
2. The professional's ability to think critically influences judgmental accuracy in practice.

3. There is a reciprocal relationship between perceived sense of professional autonomy and judgmental accuracy.

4. Critical thinking is a transferrable skill across subject matter.

5. Judgment mediates between the professional and the constantly changing environment.

6. An achieved sense of professional autonomy enables the professional to evaluate his/her impact on the environment and make appropriate modifications in practice.

7. The environment provides perceptual cues for problem solving.

8. Problem solving ability is influenced by the professional's previous environmental interactions.

9. Problem solving ability is dependent upon knowledge of subject matter.

10. Perceptual, judgmental accuracy increases problem solving ability.

11. The greater the ability to think critically, the greater the ability to problem solve.

12. Increasing knowledge and/or its utilization improves judgmental accuracy.

13. The more creative the professional the more humanistic and empathic he/she is.

14. The more creative the professional, the higher the perceived self-efficacy.

15. The more creative the professional, the greater the exercise of autonomy.

16. There is a reciprocal relationship between empathic ability and self-efficacy.

17. Empathic skill contributes to the development of a sense of justice.

18. Moral reasoning is positively related to logical reasoning.
19. The stronger the perceived self-efficacy, the greater the exercise of professional autonomy.

20. The stronger the perceived self-efficacy, the greater the judgmental accuracy in professional practice.

21. The greater the sense of integrity, the greater the perceived autonomy in professional practice.

22. There is a relationship between problem solving and creative abilities.

Summary

Within this Chapter, a paradigm for professional practice was proposed. Each concept supporting the paradigm was analyzed, its relevance to professional practice demonstrated and empirical evidence on educational strategies effective for its development presented. Basic underlying assumptions of professional practice were derived and the interrelated dimensions of the concepts were articulated in propositional statements.

As stated, the primary purpose of the paradigm is to direct professional curriculum development. The educational strategies found to be effective for the development of each concept will be incorporated into a curriculum design later in this study. Curriculum planning, however, is both an art and science, emerging as a distinct discipline. It is therefore necessary to examine the theoretical underpinnings of professional curriculum in order to creatively and effectively propose a curriculum design for professional education. Through the integration of theoretical formulations underlying professional practice and curriculum, a congruous socialization process into the profession will emerge.
CHAPTER IV
THEORETICAL UNDERPINNINGS OF PROFESSIONAL CURRICULUM

The development of professional competence and identity, as defined in this study, is achieved via a socialization process through which individuals acquire the knowledge, skills, and dispositions that enable them to enact the professional role. Merton (1957) stated:

socialization refers to the process through which [the student] develops his professional self, with its characteristic values, attitudes, knowledge and skills, fusing these into a more or less consistent set of dispositions which govern his behavior in a wider variety of professional (and extra-professional) situations. (p. 287)

As stated, socialization occurs through exposure to socializing agents, both formally and informally. The fifth underlying assumption of this study (see p. 14) is the formal educational process should exert the greatest influence on the student's professional development.

Education, as a lifelong process, is the agent through which an individual gains an increased awareness and understanding of himself and environment. Education implies that an individual's perception and image of the world is transformed by what is known, which in turn influences how interactions with the environment are managed. Education, therefore, must involve the total person: the perceptual, cognitive, affective and psychomotor components.

Formal education is a deliberate, purposeful activity restricted to a specific environment (i.e. the professional school). This
chapter presents the theoretical underpinnings from which an educational environment is created. The curriculum is the medium through which the integrity of this dynamic environment is designed, implemented, and evaluated. It is through the curriculum that it is possible to carefully integrate the multiple elements of the environment (i.e. the learner, society, and the learning process) to produce a program of substantial value. The curriculum in essence is the "heart and soul" of education. Theoretical thought developed within the last 65 years of the emergent discipline of curriculum provides the bases from which valid educational decisions are made.

The Concept of Curriculum

There are numerous definitions given to the term curriculum ranging from subjects to be taught to all the experiences students have in school. Inherent in the differing definitions are basic assumptions underlying emergent theory of curriculum structure and design.

Huenecke (1982) categorizes three contemporary realms of curriculum theorizing: structural, generic, and substantive. Structural theorizing is grounded in the work of Ralph W. Tyler (1949) and focuses on the structure of curriculum planning and decision making. According to this approach, educational purposes are stated and learning experiences are planned, organized, and evaluated in accordance with stated purposes. Variations of Tyler's basic approach are found in the work of Goodlad (1966), Taba (1962) and Saylor, Alexander and Lewis (1981). Huenecke (1982) extends structural theorizing to also include the structure of curriculum elements. For example, Beauchamp (1975) and Johnson (1967), viewing curriculum in a systems framework, described
curriculum planning, implementing, and evaluating as interactive components. Curriculum, therefore, from a structural viewpoint is defined as a plan for intended outcomes and is a rational, scientific endeavor, distinct from instruction.

The generic theorizers (Huebner, 1975; MacDonald, 1974; Apple, 1975) focus on the impact the curriculum has on the total person. They address outcomes rather than processes or plans for achieving stated purposes. The curriculum is conceptualized as encompassing the total environment of the school. Huenecke (1982) stated:

they agree that since much of what is taught is unrecognized (at least by those who are to "receive" the teaching) and may in fact be unintended, the revelation of assumptions, beliefs, and perceived truths underlying decisions of what to teach is of the highest priority. (p. 292)

Klohr (1977) identified nine characteristics of generic theorizing:

1. A holistic, organic view is taken of people and their relation to nature.
2. The individual becomes the chief agent in the construction of knowledge; that is, he/she is a culture creator as well as a culture bearer.
3. The theorists draw heavily on their own experiential base as method.
4. Curriculum theorizing recognizes as major resources the preconscious realms of experience.
5. The foundational roots lie in existential philosophy, phenomenology, and radical psychoanalysis.
6. Personal liberty and the attainment of higher levels of consciousness become central values in the curriculum process.
7. Diversity and pluralism are characteristics both of the social ends and means proposed to attain those ends.
8. A reconceptualization of supporting political-social operations is basic.
9. New language forms are generated to translate fresh meanings, for example, metaphors.
Substantive theorizers, like the structuralists, define curriculum in terms of intended outcomes. Their emphasis, however, is on substantiating existing curriculum content based on perceived failures such as, failure of relevance, failure to foster excellence, and failure to educate the total person (Huenecke, 1982). Stratemeyer et al. (1957), Phenix (1964), Eisner (1979) and Berman (1968) are representative of this perspective. They serve to question existing practices and offer alternatives for the improvement of education.

Curriculum is therefore, conceptualized from different frames of reference. Lewis and Miel (1972) viewed these in terms of the curriculum being something intended as opposed to something actualized. It is important to clearly understand the intent of a given curriculum prior to engaging in its development. Regardless of the position adopted, it must be recognized that the curriculum is the "core technology" of the school, actually serving as the barrier or buffer between the school, and in this case, the profession and its environment (English, 1980). Curriculum is the medium through which education accomplishes its goals.

A Definition of Curriculum for Professional Education

Based on the stated purposes and practices of professional education (reviewed in Chapter I), the assumption is made that curriculum has been traditionally defined as subject matter to be taught. Correspondingly, curriculum is designed in accordance with the disciplines of knowledge. This type of design is described by Saylor, Alexander, and Lewis (1981) as being orderly and emphasizes the important role of knowledge in the curriculum. Its chief limitations,
however, are its lack of relevancy to the problems and interests of the
learner as well as its potential to result in an unrelated array of
subjects or a "patchwork curriculum" (Mayhew, 1978).

In order to assist students in developing a "theory of professional
practice" congruent with the achievement of professional competence and
identify, a broader view of curriculum must be adopted. First, the
curriculum must be thought of as a plan. Formulating the plan requires
that outcomes be considered in conjunction with stated purposes.
Curriculum planning is a process which involves a series of progressive
steps or stages in which interdependent activities confluently address
proposed outcomes. Curriculum planning is ordered and methodological,
integrating, and sequencing parts into a unitary whole. The plan
reflects a continuous and connected series of steps or stages which
suggest a perpetual, long-term commitment with provisions for on-going
reassessment and change. In other words, curriculum planning is
systematic, logical, dynamic, and spiraled (Torres and Stanton, 1982).

The intention of the plan is to provide students with learning
opportunities that will support their personal and professional growth.
McGlothin (1964) formulated several guiding principles upon which to
plan professional curricula:

1. The content of the curriculum should reflect the aim of
professional education. Since these aims are broader
than professional competence, the curriculum cannot be
defined by job descriptions alone.

2. Because the objectives of professional education include
such items as social understanding, ethical behavior, and
scholarly concern, the content of the curriculum must
include experiences that will be helpful in these
directions.

3. The curriculum should be considered as the sum of
exposures to basic arts and sciences, the professional
sciences, and the arts of application. Any curriculum
that lacks one of these is inadequate.
4. It is essential that the professional school obtain and keep the cooperation of the college of arts and sciences and of the profession.

5. Curriculum must respond to the discoveries of new knowledge within the profession.

6. The content of the professional curriculum should provide the student with the understandings necessary for creating his own methods as a practitioner.

7. The content of the curriculum should be succinct and relevant, encouraging the student to continue to study.

In final analysis, the curriculum operationalizes the broad aims and purposes of the profession and the specific goals those charged with the maintenance and development of the profession have sought to meet. Thus, curriculum is defined as that set of intended experiences, carefully designed to represent the medium through which a theory of professional practice is realized and the continuation and growth of the profession is insured.

Curriculum Planning

Classic in the literature are the four fundamental questions proposed by Tyler (1949) in the development of a curriculum plan:

1. What educational purposes should the school seek to attain?

2. What educational experiences can be provided that are likely to attain these purposes?

3. How can these educational experiences be effectively organized?

4. How can we determine these purposes are being attained?

The most crucial step in the Tyler Model is the formulation of objectives. Tyler (1949) stated, "if we are to study an educational program systematically and intelligently, we must first be sure as to
the educational objectives aimed at" (p. 3). Objectives are derived from three sources, the subject matter, the learner, and society and are then filtered through philosophical and psychological screens to insure their relevance to identified needs.

Taba (1962) suggested a similar seven step model. She contended that the distinct emphasis on the objective approach provides a common, consistent focus for the multivarious activities of curriculum. Stenhouse (1975) stated:

the objectives model provides a logical pattern of cooperative action and intellectual synthesis for those engaged in educational research and academic study of education; it is a means of translating the study of education into the practice of education. (p. 46)

Critics of the objectives model recognize the appropriateness of Tyler's questions. They argue, however, its linear sequence is suitable logic for analytical purposes, but in the real world of curriculum, there is an interactive relationship. The four steps identified by Tyler should be viewed as interdependent functions rather than sequential steps. In addition, the model does not allow for expanding educational experiences beyond those directed by the initially prescribed outcomes. As Dewey (1933) asserted, "new and initially unforeseen purposes" are commonly generated in the process of achieving desirable ends.

Lewis and Miel (1972) proposed an integrated conception of curriculum where

curriculum and instruction are each imaged as an organic whole of interrelated parts. The two wholes are in direct and constant interplay; the embodiment can be checked against the image and the next imaging can respond meaningfully to any discrepancy between intention and realization. As part of the
on-going process either image or embodiment or both can be revised to maintain the integrity and the continuities essential to an organic whole. (p. 159)

Curriculum planning in this context can be viewed as a systems organization with the following characteristics:

1. It is composed of several component parts which are in interaction with one another while at the same time they are part of an identifiable whole.

2. It interacts with an external environment from which resources and information are obtained.

3. It is a network of people, structures and activities.

4. It has a feedback mechanism that allows its various parts or components to adjust to its other parts and components.

5. Entropy, or a running down of the system, will occur to the extent that resources are not continuously imparted and converted into valued outputs that allow reinvestment and further development. For the curriculum the most important maintenance source is human effort and motivation (adapted from Beer, 1980).

A Proposed Curriculum System for Professional Education

Based on the stated definition of curriculum in professional education, Figure 5 illustrates the elements of a proposed curriculum system. Persons choosing to enter a profession are unique individuals, with personal goals for fulfilling a professional role as well as with special needs as learners. They enter into the curriculum system, interact and influence it directly and emerge from it as competent practitioners with a strong sense of professional identity. Each element of the system will be discussed separately in relation to professional education. The system, however, is a dynamic unified whole, which is more than the sum of its elements, and thus should be viewed within that perspective.
Knowledge and Practice

The proposed paradigm for professional practice proposed in Chapter III of this study, integrated with the unique discipline knowledge of the profession provides the overarching philosophical and theoretical umbrella that directs formation of the curriculum. The professional discipline identifies the subject matter to be taught, required competencies of the practitioners, modes of inquiry to be used, and kinds of knowledge sought (ends) (Schwab, 1964). The paradigm makes it possible to convert a theory of professional practice into a professional curriculum. Together, the discipline knowledge of the profession and the practice paradigm provides the basic structure and design for the curriculum; provides a system for classifying knowledge, skills and values; demonstrates relationships among content; identifies goals and objectives; provides guidelines for developing instructional materials; and provides a schema for evaluation. They are the most significant elements of the curriculum system.

Social Forces

Curriculum planning is also influenced by other individuals and groups. Rapid societal growth and change requires professional education to prepare practitioners to function effectively in the future. Futurists forecast the development of an information society in which the emphasis will shift from the production of goods to the production of information (Lewis, 1982). Masuda (1980) identified several characteristics of the information age: (1) the computer is the core; (2) its purpose is to replace mental work and increase mental capability; (3) information production and utilization will be enhanced through networking; and (4) education is the driving force.
Learning

Learning also impacts directly on curriculum decisions. Gagne (1977) defined learning as a change in human capability or disposition which persists over a period of time and is not attributed to growth. Numerous learning theorists have presented differing explanations of how an individual learns, ranging from a behavioral (S-R) perspective, a cognitive information processing orientation to perceptual and social learning theories. An indepth review of each of these is beyond the scope of this study. Conley (1973), however, identified several generalizations based on a review of the literature. Each is presented and expanded upon.

1. Learning requires perceiving. Gestalt psychology asserts the individual cannot be separated from the environment. Insight is a suddenly occurring reorganization of the field of experience and learning is a change in figure ground relationships. Dewey (1938) interpreted learning as a transaction between the organism and the environment, placing an emphasis on perceptual ability. Cognitive theories ascribe to the act of attending or selective perception of stimuli prior to entering cognitive structure.

2. The individual characteristics of the learner determines the extent to which learning occurs. The learner brings to the learning situation a vast array of characteristics determined by heredity and environment. Experience influences perception and learning. Learning styles are consistent, unique ways individuals respond to and use stimuli in the context of learning (e.g., field dependence - field independence, Witkin, 1976; cognitive style mapping, Hill, 1973).
3. Environment influences the extent of learning. Dewey (1938) referred to education as the growth of the individual towards independence and self-control through environmental interaction. He stated:

The environment, in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had. Even when a person builds a castle in the air, he is interacting with the objects which he constructs in fancy. (p. 44)

4. Learning is dependent upon the activity of the learner. Dewey (1938) emphasized the role of purposeful, meaningful activity in learning. Behaviorists measure learning through active responses to stimuli. Gestalt psychologists require the learner to actively restructure the environment and cognitive theorists view the learner as being active in the learning act.

5. The motivation of the learner influences learning. Hull (1943) posited a behavioral theory to include a drive condition for need satisfaction. Skinner (1968) recognized the importance of motivation to the performance of a task. The importance of motivation to achievement (achievement motivation) has been extensively studied. For example, McClelland (1965) described twelve propositions that can lead to the persisting motivation for achievement. Gagne (1977) stated:

learners can be rewarded, and their subsequent learning can be enhanced by the accomplishment of learning tasks within their capabilities. Achievement, successful interaction within the environment, and mastery of the objectives of an educational program can themselves lead to persisting satisfaction on the part of the learner, and can therefore become a most dependable source of continuing motivation. (pp. 290-291)
6. Reinforcing a desired behavior tends to increase the probability that the behavior will be repeated in a similar situation. Reinforcing involves rewarding and confirming. Although almost all learning theories address the role of reinforcement in learning, it is most central to the behavioral theories. For example, Skinner (1953) contended reinforcement is anything that increases the frequency of a response.

7. Positive transfer of learning from one situation to another can be facilitated when similar conditions are present. Thorndike (1932) contended transfer of learning takes place when identical elements are present in new situations. Gestalt psychology suggests for transfer to take place, certain relationships of elements should be learned. Ausubel (1968) asserted all meaningful learning involves transfer because existing cognitive structure is modified by new stimuli.

8. Practice determines the effectiveness and efficiency of learning. Practice is the repetition of a performance with the intent of improving that performance and gaining feedback (Gagne, 1977). Mass practice is effective for rote memorization tasks, but has a sharp extinction curve. Distributive practice (spaced) is more conducive for concept learning (Newell, 1982).

Students within a professional school are minimally 18 years of age making them, at least chronologically, adults. As such, the characteristics and implications of adult learning theory (Knowles, 1978) listed in Table 2 are relevant for curriculum planning.

**Governing Coalition**

Curriculum decisions are influenced by a governing coalition which represents the organized professional body which maintains standards of
Table 2. Characteristics and Implications of Adult Learning Theory

<table>
<thead>
<tr>
<th>Characteristics of Adult Learners</th>
<th>Implications for Adult Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>The adult learner sees himself as capable of self-direction and desires others to see him the same way.</td>
<td>A climate of openness and respect is helpful in identifying what learners want and need to know.</td>
</tr>
<tr>
<td>Adults bring a lifetime of experience to the learning situation. Youths tend to regard experience as something that has happened to them, while to an adult, his experience is him. The adult defines who he is in terms of his experience.</td>
<td>Adults enjoy planning and carrying out their own learning exercises.</td>
</tr>
<tr>
<td>Adult developmental tasks increasingly move toward social and occupational role competence and away from the more physical developmental tasks of childhood.</td>
<td>Adults need to be involved in evaluating their own progress toward self-chosen goals.</td>
</tr>
<tr>
<td></td>
<td>Less use is made of transmittal techniques; more of experiential techniques.</td>
</tr>
<tr>
<td></td>
<td>Discovery of how to learn from experience is key to self-actualization.</td>
</tr>
<tr>
<td></td>
<td>Mistakes are opportunities for learning.</td>
</tr>
<tr>
<td></td>
<td>To reject adult experience is to reject the adult.</td>
</tr>
<tr>
<td></td>
<td>Adults need opportunities to identify the competency requirements of their occupational and social roles.</td>
</tr>
<tr>
<td></td>
<td>Adult readiness-to-learn and teachable moments peak at those points where a learning opportunity is coordinated with a recognition of the need-to-know.</td>
</tr>
<tr>
<td></td>
<td>Adults can best identify their own readiness-to-learn and teachable moments.</td>
</tr>
</tbody>
</table>
Youth thinks of education as the accumulation of knowledge for use in the future. Adults tend to think of learning as a way to be more effective in problem solving today.

Adult education needs to be problem-centered rather than theoretically oriented.

Formal curriculum development is less valuable than finding out what the learners need to learn.

Adults need the opportunity to apply and try out learning quickly.

performance and encourages professional growth and development. In addition, the governing coalition is comprised of curriculum leaders or key decision makers. The main criterion for membership in the coalition is a commitment to the purposes and goals of the curriculum system and the promotion of the system as a synergetic organization. All members of the coalition assume linking roles between the curriculum system, theory and research in the field, and the environment.

Characteristics of the Beginning Professional

The characteristics of the beginning professional articulate the expected behaviors at the completion of the program. Torres and Stanton (1982) said of such behaviors:

- they are not terminal in nature but a foundation for practice that will be used to further develop the practitioner...
- [they are stated] behaviors that mirror the philosophy in its content and process and that contain the highest level of achievement of the new graduate. (p. 47)

These behaviors are expressed in objective form, developed from the propositions and principles of professional practice.

Objectives became an important part of curriculum planning through the work of Bobbitt (1918) and Charters (1923). They proposed that curriculum is best developed by analyzing the major activities of adult life and specifying them in objective form. Bobbitt (1924) stated:

The comprehensive working list of abilities should be put into printed form. This makes them definite. It prevents their becoming confused and changed through processes of discussion. It enables all concerned to have the same things before them and the same things in mind at once. It enables one to see the entire range of abilities as he considers any one of them or any group of them. It assists in seeing each in relation to all. It prevents losing sight of any one of them. It assists in providing a broad common ground of understanding for all concerned. (p. 37)
Tyler, in his work with the Eight Year Study, extended the scientific tradition of curriculum making by emphasizing the importance of stating objectives in terms of student behavior. This is further evidenced in Tyler's (1949) curriculum planning model by the question, what educational purposes should the school seek to attain?

Bloom (1956) made a significant contribution to the objectives movement by developing a taxonomy of the cognitive domain, representing hierarchial behaviors of thinking, knowing, and problem solving. Later a taxonomy of the affective domain, dealing with attitudes, values, interests and appreciation, and the psychomotor domain, addressing manual and motor skills were developed. These taxonomies are a logical grouping of potential objectives for learning, ordering them from relatively simple to more complex behaviors. Moore (1970) proposed a fourth perceptual domain that includes behaviors which demonstrate sensitive and accurate observation, the ability to make complex decisions where many factors are involved, and to change on-going behavior in response to its effectiveness. Taken together, these four domains represent four dimensions of the individual; the way he attends to information, processes it, incorporates it into his system of values, and takes action.

Although the domains provide a schema for addressing human traits, the specificity to which objectives are stated, directing outcomes for learning, is disputed. Eisner (1967) argued the use of objectives has four significant limitations:

First, it has not sufficiently emphasized the extent to which prediction of educational outcomes cannot be made with accuracy. Second, it has not discussed the ways in which the subject matter affects precision in stating educational objectives. Third,
it has confused the use of educational objectives as a standard of measurement when in some areas it can be used only as a criterion for judgment. Fourth, it has not distinguished between the logical requirement of relating means to ends in the curriculum as a product and the psychological conditions useful for constructing curriculums. (pp. 258-259)

Eisner (1979) proposed a broader type of objective, an expressive outcome, to compliment behavioral objectives. Expressive outcomes are "the consequences of curriculum activities that are intentionally planned to provide a fertile field for personal purposing and experience" (p. 103). The expressive activity is evocative as opposed to prescriptive.

The debate over behavioral objectives continues. In professional education, the stringent use of objectives is the driving force behind the competency based approach. The shortcomings of this method, in part, underlies the purpose of this study. In professional education, there is a need for more flexibility in directing curriculum outcomes. Objectives need to be stated with sufficient clarity to illustrate the types of behavior expected of the graduate, yet allow opportunities for on-going intrinsically derived outcomes. The guiding principle in the formulation of objectives should be their representation as the foundation of professional practice in which the practitioner emerges as competent and having a strong sense of professional identity.

Curriculum Design

Curriculum designing is an art and science involving the shaping of reality through creative thought for the purpose of processing information and making decisions. Taba (1962) stated:
Curriculum design is a statement which identifies the elements of the curriculum, states what their relationships are to each other, and indicates the principles of organization and the requirements of that organization for the administrative conditions under which it is to operate. A design, of course, needs to be supported with and to make explicit a curriculum theory which establishes the sources to consider and the principles to apply. (p. 421)

A design provides structure and organization for the curriculum. Lewis and Meil (1972) proposed several criteria for curriculum design. First, the design must have integrity with respect to intent. A curriculum has integrity "if a strong, clear, consistent message is conveyed or diverse parts are integrated into a unified whole" (p. 143). Second, a design reflects craftsmanship by the way curriculum elements are structured and organized. The "craft of curriculum designing" has the qualities of emphasis, continuity, and balance. The third criterion, eloquence, projects the "aesthetic principles of simplicity, elegance or beauty, and completeness" (p. 145) of the design. Finally, the design has functionality in that it can be adapted to the uniqueness of the participants and on-going changes in the system.

Several organizing themes for curriculum design are evident in the literature. Saylor, Alexander, and Lewis (1981) proposed five basic types: (1) the subject/discipline design is organized around subjects derived from the major disciplines of knowledge; (2) the specific competencies/technology design is characterized by a series of specific competencies derived from an analysis of knowledge and skills needed to perform in specific roles; (3) the human traits/processes design focuses on specific traits, such as creativity or self-confidence, to be developed; (4) the social functions/activities design emphasizes society and social problems; and (5) the individual needs and
interests/activities design views the needs and interests of the learners to be of central importance.

As stated, professional education traditionally has relied on the subject/discipline design and more recently on the specific competencies/technology design. These designs by themselves lack integrity and completeness in realizing the goals and purposes of professional development. To better design professional curriculum, aspects of each of the five traditional designs may be used that represent organizing principles from the practice paradigm. For example, for the achievement of professional competence, two appropriate organizing principles are simple to complex tasks and concrete to abstract reasoning. Many organizing principles may be chosen that represent the major concepts that will appear and reappear at each level of the curriculum, which in turn serve to insure continuity, sequence, and integration. McGlothin (1964) suggested:

1. The curriculum should be organized in such a way that it moves from elementary to advanced subject matter, that it interests the student by exposing him quickly to the practice of his intended profession, and that it aids him to integrate its various parts into procedures which are useful in solving problems assigned to the profession.

2. The curriculum should be organized so that some experience with the practice of the profession appears early in the course, but it must also make sure that the student masters prerequisites before attempting advanced work.

3. The curriculum should be organized so that closely related courses parallel each other, with each contributing to the understanding of the other.

4. A student in a professional curriculum must integrate the knowledge and skills which he has acquired into a body of effective procedures in solving problems assigned to the profession.

5. Integration is attained through use of knowledge and skill to solve problems for which the student is responsible.
These recommendations will be incorporated into a curriculum design in Chapter V.

**Instructional Modes**

Instruction brings the curriculum design to life by providing methods, strategies, and activities for the learners. Therefore, learning experiences must be provided to articulate with the purposes and aims of the curriculum. In addition, the assumptions underlying the curriculum that address the learner and the teaching-learning process significantly impact on the methods chosen and the roles ascribed to both the student and teacher.

There are several models of classroom teaching methods such as lecture, role-playing, discussion, inquiry training and synectics. Each has varying applicability to specific curriculum designs. For example, the lecture method, which is widely used in college classrooms, is most useful for transmitting knowledge but is inadequate in addressing students' individual learning styles or developing human traits or processes. The method chosen is dependent not only upon the curriculum design, but the skill of the teacher, the number of students involved, and the materials and resources available.

In addition to classroom instruction, professional education involves clinical experiences, where students get the opportunity to perform in the professional role. Chapter II of this study reviewed the socialization research and the effects of modeling via a social learning process on the student. The student-teacher relationship in this
setting is therefore critically important. Gordon (1974) characterized the ideal student-teacher relationship as having

1. Openness or transparency, so each is able to risk directness and honesty with the other.

2. Caring, when each person knows that he is valued by the other.

3. Independence, (as opposed to dependence) of one on the other.

4. Separateness, to allow each to grow and to develop his uniqueness, creativity, and individuality.

5. Mutual needs meeting, so that neither's needs are met at the expense of the other's needs.

Unfortunately, research on clinical instruction is not very extensive nor particularly revealing. Daggett et al. (1979), in a review of this research, reported several important components in clinical teaching (1) attitude of the faculty towards students and clients; (2) knowledge of subject matter and clinical competence; (3) teaching skills (giving feedback, modeling, demonstration, and structure); (4) interpersonal skills; (5) availability; and (6) allowing experiential autonomy. The authors note that despite these findings there are few well-thought out approaches to clinical teaching, as well as appropriate training programs for clinical instructors.

**Evaluative Processes**

Within the curriculum system evaluation contributes to on-going development and improvement by providing the primary feedback mechanism. Evaluation according to Saylor, Alexander, and Lewis (1981) "is implied in the very process of [curriculum] planning for it is the act of placing a value on something, of determining its merits" (p. 316).
Deriving a clear definition of evaluation, however, is not an easy task. Numerous examples are found in the literature, each with unique advantages and disadvantages, many formulating the conceptual bases for various approaches or models. The Phi Delta Kappa National Study Committee on Evaluation (1971) identified three prevalent definitions, evaluation as (1) measurement; (2) the congruence between objectives and performance; and (3) judgment.

When measurement is the accepted definition, evaluation is the measurement of results, effects, or performance using some type of formalized instrument which produces data that can be compared to a standardized scale. The underlying assumption is the phenomena to be evaluated have significant measurable attributes, and instruments can be designed which are capable of measuring them.

The definition of evaluation as congruence between objectives and performance was developed by Tyler in his work with the Eight Year Study. Tyler stated:

An appraisal of an educational institution is fundamentally only the process by which we find out how far the objectives of the institution are being realized (Smith and Tyler, 1942, p. 5).

Provus (1971), adhering to the same orientation, suggested:

Evaluation is the process of (1) defining program standards; (2) determining whether a discrepancy exists between some aspects of program performance and the standards governing that aspect of the program; and (3) using discrepancy information either to change performance or to change program standards, (p. 183).

Evaluation following this orientation is therefore based on predetermined goals and objectives which can be measured.
The third definitional orientation, judgment, is the most varied. Scriven (1967) emphasized that without merit, no evaluation has taken place. Stake (1967) described judgment as an essential act in the evaluation process. For these authors, judgment is determining the overall value or worth of a program or curriculum. Another school of thought views judgment as delineating, obtaining, and providing useful information for judging decision alternatives (Guba and Stufflebeam, 1970). The emphasis is on the continuous assessment of a program's decision making needs and the provision of information to meet those needs.

Prior to 1960, evaluation was virtually synonymous with the measurement of individual student differences by testing and comparison. The launching of Sputnik in 1957 by the Russians precipitated a demand for better, more comprehensive program evaluations and thus led the evaluation community to re-examine existing methods and openly discuss their concerns. Lee J. Cronbach's paper, "Course Improvement Through Evaluation" (1963), was the hallmark of that period. Cronbach rejected the use of comparison methods (arguing that group equivalency was not assured) as the prime function of evaluation. Instead, he advocated evaluation be used for three distinct purposes:

1. Course improvement: deciding what instructional materials and methods are satisfactory and where change is needed.

2. Decisions about individuals: identifying the needs of the pupil for the sake of planning his instruction, judging pupil merit for the purposes of selection and grouping, acquainting the pupil with his own progress and deficiencies.

3. Administrative regulation: judging how good the school system is, how good individual teachers are, etc. (p. 673)
Following Cronbach, Michael Scriven published "The Methodology of Evaluation" (1967) which addressed several issues in evaluation. Scriven differentiated the roles evaluation assumes, describing them as both formative and summative. Formative evaluation techniques provide feedback during the development or implementation of a curriculum or program. Summative evaluation addresses the outcomes of a curriculum for the purpose of determining its overall worth or effectiveness.

Scriven also identified the weaknesses of both the comparative group method and Tyler's approach of measuring the degree to which objectives are achieved. He recommended evaluation procedures be improved by elaborating comparison group designs to include more than one experimental group, validating specified objectives with experts in the field, and assigning weights to stated criteria and then combining them to form a single criterion measure (Scriven, 1967).

Numerous models, conceptually derived from the different definitions of evaluation and varied application of formative and summative approaches, appear in the literature. Many attempts to classify the models based on certain specified characteristics have been made (Guba and Lincoln, 1981; House, 1978; Popham, 1975; Rose and Nyre, 1977; and Worthen and Sanders, 1973). Table 3 presents one schematic approach to describing a representative sample of the diversity of ideas concerning evaluation.

Selection of any one evaluation model must be based on criteria which best addresses the specific circumstances for study. For example, in situations where high objectivity and reliability/comparability are required, mathematically manipulated results are desired and attributes
Table 3. Classification Schema for Evaluation Approaches

<table>
<thead>
<tr>
<th>Definitional Approach</th>
<th>Models</th>
<th>Proponents</th>
<th>Purpose of Evaluation</th>
<th>Advantages and Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td>Standardized Testing</td>
<td>Thorndike (1904)</td>
<td>To measure the outcomes of education</td>
<td>Provides precise data but may lead to narrow conception of ability. Impersonal, inflexible, mechanistic process of evaluation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Research oriented. Must guard against threats to internal and external validity. Difficult to control for the multiple effects of the curriculum or program.</td>
</tr>
<tr>
<td>Experimental Design</td>
<td>Campbell &amp; Stanley (1966)</td>
<td></td>
<td>To compare 2 or more programs on established criteria</td>
<td>Evaluation directly linked to specific program goals. No provision is made for evaluating the objectives themselves. Evaluation limited to pre-specified objectives. Emergent behaviors cannot be accounted for.</td>
</tr>
<tr>
<td>Congruence Between</td>
<td>Tyler Model</td>
<td>Tyler (1942)</td>
<td>To determine the extent to which stated curricular purposes are realized</td>
<td></td>
</tr>
<tr>
<td>Definitional Approach</td>
<td>Models</td>
<td>Proponents</td>
<td>Purpose of Evaluation</td>
<td>Advantages and Disadvantages</td>
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<tr>
<td>Countenance Evaluation</td>
<td>Stake (1967)</td>
<td>To describe and judge a program</td>
<td>Evaluates process as well as outcomes of a program. Judgment is incorporated in reference to absolute and relative standards. Lack of explanation provided on how to derive standards and manage competing values.</td>
<td></td>
</tr>
<tr>
<td>Judgment</td>
<td>Accreditation</td>
<td>To identify deficiencies by professional peer group</td>
<td>Maintains minimum standards as well as encourages institutional self-improvement. Provides acceptance within professional community, helps determine the applicability of transfer credits, recruits faculty and students, and provides support for private and federal funding.</td>
<td></td>
</tr>
<tr>
<td>A. Professional Judgment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 - continued
<table>
<thead>
<tr>
<th>Definitional Approach</th>
<th>Models</th>
<th>Proponents</th>
<th>Purpose of Evaluation</th>
<th>Advantages and Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Judgment of Outcomes</td>
<td>Goal-free Evaluation</td>
<td>Scriven (1973)</td>
<td>To evaluate actual effects against a profile of demonstrated needs</td>
<td>Focuses on intended as well as unanticipated outcomes. It is flexible, has a broad perspective, and all outcomes are potentially broad relevant for program improvement. It is highly unstructured, difficult to manage, very subjective and cannot be replicated or compared. Validity is dependent upon the evaluator.</td>
</tr>
<tr>
<td></td>
<td>Responsive Evaluation</td>
<td>Stake (1975)</td>
<td>To address program concerns and activities rather than intents</td>
<td>Directly addresses relevant information desired by the program and is flexible to allow a variety of evaluation techniques. Can be difficult to manage and has the potential for being highly subjective.</td>
</tr>
<tr>
<td>C. Decision-oriented</td>
<td>CIPP</td>
<td>Stufflebeam (1968)</td>
<td>To provide relevant information for decision making</td>
<td>Provides four dimensions for information relevant to decision making; context, input, process, and product. Is both formative and summative in approach. Allows for a variety of evaluation techniques.</td>
</tr>
</tbody>
</table>
can be identified and measured, the measurement approach is probably indicated. However, if human concerns are important, all observable effects potentially relevant, and a high degree of objectivity is not required, a goal-free or responsive approach may be beneficial. Some programs may choose an eclectic approach, taking certain aspects of each model. Important considerations are finances, time, personnel and expert assistance available. Regardless of the approach, evaluation must be considered as an integral part of the curriculum planning process and a priori commitment made to it. Therefore, the design chosen must provide the curriculum system with enough relevant information to allow a determination of merit and assessment of accomplishment.

Stufflebeam's CIPP model provides a framework that incorporates the various elements of the professional curriculum system. Evaluation, according to Stufflebeam "is the process of delineating, obtaining, and providing useful information for judging decision alternatives" (Worthen and Sanders, 1973, p. 219). Evaluation information, therefore, must be valid, reliable, timely, credible and pervasive to be useful for decision making purposes.

As a decision oriented approach, Stufflebeam described the settings in which decisions occur and the types of decisions that can be made. Decision types occurring in each setting are classified as (1) planning decisions -- to determine objectives or goals; (2) structuring decisions -- to design the means or procedures to be used to attain the objectives; (3) implementing decisions -- to utilize, control, and refine procedures; and (4) recycling decisions -- to judge and react to the outcomes or attainments of the objectives. Corresponding to the
four decision types are four types of evaluation, context (planning decisions), input (structuring decisions), process (implementing decisions), and product (recycling decisions).

Context evaluation defines the environment where change is to occur, including the environment's unmet needs and the problems underlying these needs. It provides information for deciding upon the setting to be served, the goals associated with meeting the needs, and the objectives associated with solving problems. Input evaluation provides information for determining how to utilize resources to achieve program goals and objectives. Process evaluation provides feedback which identifies or predicts defects in the procedural design or its implementation. Finally, product evaluation determines the effectiveness of the program. This information assists program planners on deciding whether to continue, modify, or refocus an activity (Stufflebeam, 1968).

Stufflebeam's underlying assumptions of the model are:

1. The quality of programs depends upon the quality of decisions;
2. The quality of decisions depends upon decision-makers's abilities to identify the alternatives which comprise decision situations and to make sound judgments of these alternatives;
3. Making sound judgments requires timely access to valid and reliable information pertaining to the alternatives;
4. The availability of such information requires systematic means to provide it; and
5. The processes necessary for providing this information for decision making collectively comprise the concept of evaluation (Stufflebeam, 1968, p. 6).

Various methods are used to assess the progressive socialization of the individual into the profession. For example, measurement techniques
are frequently used to determine the congruency between objectives and outcomes. The impact these methods have on students must be addressed. Combs (1972) stated:

Assessment techniques do not only measure learning; they also affect it. How students perceive assessment devices and what they learn from the employment of such devices must be a matter of vital concern in the selection of evaluation instruments. . . . Students learn from all their experiences, including the experience of being evaluated; and those too, must be taken into account in determining accountability. (p. 3-4)

If assessment techniques influence student learning, then the direct or indirect effect they have on professional performance must also be questioned. Inherent in the purpose of professional education is the development of individuals who achieve the autonomy to judge their own performance. The concept of "self as instrument" is appropriate for the purpose.

Guba and Lincoln (1981) identified several distinct advantages using the self as instrument approach. The human being as instrument (1) is responsive, both to the environment and to the person who create that environment; (2) is adaptable to differing contexts and informational needs; (3) is holistic in approach; (4) has an extended awareness leading to a broader knowledge base; (5) can process data immediately upon acquisition; and (6) can seek clarification when needed. Therefore, in the evaluation plan, the student and faculty themselves are the major evaluation instruments.

**Summary**

Formal education is a deliberate, purposeful activity and should exert the most significant influence on the individual during the
professional socialization process. Curriculum, as the core technology of education, is the medium through which this goal is accomplished. As such, the curriculum was described as that set of intended experiences, carefully designed to represent the structure through which a theory of professional practice is realized and the continuation and growth of the profession is insured.

Based on this definition, a curriculum system (Figure 5) was proposed that described interactive elements that contribute to formulating the curriculum. The proposed paradigm for professional practice, integrated with the unique discipline knowledge of the profession provides the overarching philosophical and theoretical umbrella in the system. Social forces, learning, and the governing coalition are elements of the system that directly and indirectly influence its synergetic functioning by providing materials, resources, and interaction with other organized systems (e.g., the profession). Together, these elements provide input into the basic structure and design of the curriculum; a method for classifying knowledge, skills and values; a method for demonstrating relationships among content; identifying goals and objectives; and developing instructional materials and a schema for evaluation. It is within the context of this system that a curriculum design for professional education is generated.
CHAPTER V
A DESIGN FOR A PROFESSIONAL EDUCATION CURRICULUM

This chapter presents a design for professional education curriculum. Design, as an artistic endeavor, is an expressed form or structure given interrelated elements that conveys meaning and purpose. As such, this design illustrates one way critical concepts in the paradigm of professional practice (i.e. professional competence and identity; see Chapter III) can be achieved. It is intended as a guide or tool to be used for curriculum development.

The design is created within the context of the curriculum system presented in Chapter IV. Therefore, assumptions underlying the curriculum are derived from principles of professional practice; characteristics of the beginning professional are set forth; and the design, relevant instructional strategies, and an evaluation system for the curriculum is proposed. In addition, for clarity, one aspect of the design is illustrated.

Assumptions Underlying Professional Curriculum

Assumptions made about a professional curriculum direct its development. As the medium through which professional practice is realized, assumptions underlying professional curriculum should be derived from curriculum theory and directly related to principles
underlying professional practice (see page 199). Each assumption is listed in Table 4 and the interrelationship to principles of professional practice is illustrated.

**Characteristics of the Beginning Professional**

Upon completion of the professional program, the graduate will:

1. Use critical thinking skills to recognize problems, gather and interpret data, and render accurate judgments.

2. Synthesize knowledge from the arts, sciences, and humanities and the professional discipline to accurately analyze environmental cues and utilize appropriate problem solving strategies.

3. Autonomously make judgments and assume responsibility for the consequences of actions taken.

4. Discriminate the ethical and value issues inherent in the professional role.

5. Recognize clients' stated and unstated feelings and effectively communicate understanding to client.

6. Accurately judge own capabilities when performing in the professional role and recognize potential to extend role performance.

7. Develop new perspectives on established routines to creatively adapt to changing environments.

These terminal competencies are derived directly from each concept in the paradigm of professional practice.

**Curriculum Design**

The curriculum design is multidimensional, drawing on principles from each of the five designs proposed by Saylor, Alexander, and Lewis (1981). For example, the assumption (see Table 4) that the learner is active, self-directed, and brings to the learning situation multivarious experiences, thus the curriculum is relevant to the learner's needs,
<table>
<thead>
<tr>
<th>Principles Underlying Professional Practice</th>
<th>Assumptions Underlying Professional Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional practice is a sequence of actions undertaken by a person to serve others, who are considered clients.</td>
<td>The product of the curriculum &quot;the professional person&quot; is able to function effectively in society and meet its changing needs.</td>
</tr>
<tr>
<td>Each professional action is unique, purposeful and deliberate, manifested by observable behavior.</td>
<td>The curriculum reflects the philosophy and mission of the professional school; prepares individuals capable of integrating perception, thought, and action for effective professional practice.</td>
</tr>
<tr>
<td>The effectiveness of professional practice is governed by the degree to which the individual achieves professional competence and sense of identity.</td>
<td>The purpose of the curriculum is to realize a theory of professional practice.</td>
</tr>
<tr>
<td></td>
<td>The curriculum provides for individual differences among learners.</td>
</tr>
<tr>
<td></td>
<td>The curriculum enables the students to acquire the discipline knowledge of the profession as well as the inherent values of the professional role.</td>
</tr>
<tr>
<td>Professional competence is the tacit integration of cognitive and behavioral skills necessary for practice.</td>
<td>The curriculum is organized to reflect the integrity of the profession as well as provide for balance, continuity, and integration of the liberal arts and sciences, professional sciences, and experiences that facilitate socialization into the profession (i.e. the integration of theory and practice).</td>
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<tr>
<td>Professional identity is the integration of the individual's self-image with the aims, purposes, and ideals of the profession.</td>
<td>The curriculum reflects the scientific, humanistic, and ethical values of the profession.</td>
</tr>
<tr>
<td>A professional role is the expectations mobilized by the identity across situations.</td>
<td>The curriculum provides specific, frequent opportunities to enact the professional role.</td>
</tr>
<tr>
<td>An achieved sense of professional identity provides the confidence, motivation, values, and behavioral norms to effectively apply the acquired knowledge and skills in professional practice.</td>
<td>The curriculum focuses on the individual as a unique process-oriented being.</td>
</tr>
<tr>
<td>Professional identity is built upon an achieved sense of personal identity.</td>
<td>The learner is active, self-directed, and brings to the learning situation multivarious experiences; thus the curriculum is relevant to the learners' needs.</td>
</tr>
<tr>
<td>Table 4 - continued</td>
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</tr>
<tr>
<td><strong>Unsuccessful identity formation results in the inability of the professional to commit to any single view of self or to integrate the various assumed roles arousing anxiety, apathy, and hostility toward the professional role.</strong></td>
<td><strong>The curriculum recognizes that not all students entering the professional school have resolved their &quot;identity crisis&quot; of adolescence and therefore strategies are planned for assisting them in resolving their conflict.</strong></td>
</tr>
<tr>
<td>Developing professional competence and identity leading to effective enactment of the professional role is a multistage process.</td>
<td>The curriculum is sequenced to provide both students and faculty cumulative goals to be achieved within specified time periods.</td>
</tr>
<tr>
<td>Professional development is significantly influenced by interaction with the educational setting, faculty, and the student peer group.</td>
<td>The curriculum recognizes the impact of the environment and experience on the learner and the importance of socializing agents in the development of the professional role.</td>
</tr>
<tr>
<td><strong>The student-faculty relationship in a professional school is a collegial one which fosters openness, caring, independence, individuality and growth.</strong></td>
<td>The curriculum recognizes the existence of a &quot;hidden curriculum&quot; and opportunities are provided for it to emerge and be incorporated into the system.</td>
</tr>
<tr>
<td>Faculty and students are active participants in the curriculum planning process.</td>
<td></td>
</tr>
<tr>
<td>Table 4 - continued</td>
<td></td>
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<tr>
<td>----------------------</td>
<td></td>
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<tr>
<td>Modeling stimuli in the environment directly impacts on the professional neophyte.</td>
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</tr>
<tr>
<td>Faculty in professional schools are experts in their fields, are clinically competent, have good interpersonal skills, are excellent role models, and can use a variety of teaching skills, such as probing, structuring, demonstrating and giving feedback.</td>
<td></td>
</tr>
<tr>
<td>Professional competence is achieved through the development of critical thinking, problem solving and creative skills; and professional identity is achieved through the development of empathy, efficacy, integrity and autonomy.</td>
<td></td>
</tr>
<tr>
<td>The curriculum has identified vertical and horizontal strands that provide structure. The curriculum directs the selection of multivarious instructional modes appropriate to the specific objectives of the program. The curriculum uses a multitude of material and human resources including students, faculty, administrative personnel, hardware, software, community agencies and social support systems.</td>
<td></td>
</tr>
<tr>
<td>Inherent in effective professional practice is the recognition by the professional of the impact of his/her actions on the environment; the ability to autonomously judge personal performance.</td>
<td></td>
</tr>
<tr>
<td>The curriculum incorporates into its overall evaluation plan a mechanism for students' self-evaluation in collaboration with faculty. The curriculum is influenced by a governing coalition which maintains standards of performance and encourages professional growth and development.</td>
<td></td>
</tr>
<tr>
<td>The professional is accountable for his/her actions.</td>
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</tbody>
</table>
Effectively professional practice requires the individual to continue to learn throughout his/her career, adapting to and impacting on changing environments.

The curriculum recognizes the uncertainty of the future and the short half-life of professional knowledge, therefore opportunities are provided for students to "learn how to learn."
implies an individual needs and interests/activities design. The assumption that the individual is a unique process-oriented being implies a human traits/processes design. Support for each of the designs is derived from the stated assumptions.

Each profession has a unique, specialized body of knowledge. This discipline knowledge permeates the curriculum, becoming more complex as the student progresses. The underlying structure of the discipline or the major organizing principles are determined by the profession. For example, in nursing education, knowledge could be organized in relation to the health-illness continuum or by levels of health care delivery (i.e. primary, secondary, tertiary). In teacher education, the knowledge continuum may flow from remedial to developmental.

Congruent with the advancement of knowledge are the constructs supportive to professional practice, that is, the achievement of professional competence and identity. The concepts of critical thinking, problem-solving, judgment, creativity, empathy, self-efficacy, integrity and autonomy, together with professional knowledge are vertical, spiraling threads that provide sequence and continuity in the curriculum.

The integrating threads which relate each of the concepts to one another are the planned opportunities given the student to interact with the environment (e.g., perform in the professional role, with faculty, and/or the student peer group), the behavioral skills needed for performance in the professional role, the focus of the profession (e.g., the clients to be served), and the application of knowledge from the arts, sciences, and humanities. This integration is achieved by three segments that represent different learning opportunities:
1. Coursework from the arts, sciences, and/or humanities
2. Professional science courses that include a clinical component
3. Professional role seminars

Rationale for and the focus of each of these segments is derived from the underlying assumptions of the curriculum, as illustrated in Table 5.

Coursework from the arts, sciences, and/or humanities should be carefully selected to fulfill the purposes of professional education. Within undergraduate professional programs these courses comprise the general, liberal education requirements of the University as well as provide knowledge supportive to the professional discipline. In post-baccalaureate professional programs, these courses are the basic science components upon which the discipline is developed.

The professional science courses are the courses offered by the professional school. These courses are designed in relation to the organizing principle or structure identified within the discipline knowledge and are congruent with the aims and purposes of the professional school. Each course should include a clinical component that allows students the opportunity to perform in the professional role. The critical need for environmental interaction throughout the entire curriculum was demonstrated in Chapter II in the review of the socialization research. In addition, environmental interaction was shown as the mediating variable between professional competence and identity in the paradigm for professional practice (see Figure 5).

Professional role seminars provide students planned opportunities to meet together with faculty to discuss application of the material learned to the professional role. In addition, the seminars serve as an
<table>
<thead>
<tr>
<th>Curriculum Segment</th>
<th>Assumptions that Provide Direction and Rationale for Each Curriculum Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coursework from the arts, sciences and/or humanities</td>
<td>The product of the curriculum &quot;the professional person&quot; is able to function effectively in society and meet its changing needs.</td>
</tr>
<tr>
<td></td>
<td>The curriculum reflects the scientific, humanistic, and ethical values of the profession.</td>
</tr>
<tr>
<td></td>
<td>The curriculum is organized to reflect the integrity of the profession as well as provide for balance, continuity, and integration of the liberal arts and sciences, and experiences that facilitate socialization into the profession: i.e. integration of theory and practice.</td>
</tr>
<tr>
<td>Professional science courses that have a clinical component</td>
<td>The curriculum reflects the philosophy and mission of the professional school; to prepare individuals capable of integrating perception, thought, and action for effective professional practice.</td>
</tr>
<tr>
<td></td>
<td>The purpose of the curriculum is to realize a theory of professional practice.</td>
</tr>
<tr>
<td></td>
<td>The curriculum enables the student to acquire the discipline knowledge of the profession as well as the inherent values of the professional role.</td>
</tr>
<tr>
<td></td>
<td>The curriculum provides specific, frequent opportunities to enact the professional role.</td>
</tr>
</tbody>
</table>
Table 5 - continued

The curriculum recognizes the impact of the environment and experience on the learner and the importance of socializing agents in the development of the professional role.

Faculty in professional schools are experts in their fields, are clinically competent, have good interpersonal skills, are excellent role models, and can use a variety of teaching skills such as probing, structuring, demonstrating and giving feedback.

The curriculum incorporates into its overall evaluation plan a mechanism for students' self-evaluation in collaboration with faculty.

---

**Professional role seminars**

The curriculum provides for individual differences among learners.

The curriculum focuses on the individual as a unique process-oriented being.

The learner is active, self-directed, and brings to the learning situation multivarious experiences, thus the curriculum is relevant to the learners' needs.

The curriculum recognizes that not all students entering the professional school have resolved their "identity crisis" of adolescence and therefore strategies are planned for assisting them in resolving their conflict.
Table 5 - continued

The curriculum recognizes the existence of a "hidden curriculum" and opportunities are provided for it to emerge and be incorporated into the system.

The curriculum recognizes the uncertainty of the future and the short half-life of professional knowledge, therefore opportunities are provided for students to "learn how to learn."
open forum to discuss student concerns as socialization into the profession progresses. In other words, they serve as the medium through which the hidden curriculum is allowed to surface and professional socialization is purposefully directed.

The ratio of time devoted to each of these three segments changes in relation to the other as the student progresses through the curriculum. Coursework from the arts, sciences, and/or humanities is concentrated early in the curriculum while the professional science courses dominate later. It is important to note the professional role seminars remain constant throughout, indicating their importance to the entire socialization process.

As demonstrated in Chapter II, socialization is a multistage process. From this principle, the assumption was made (see Table 4) that the curriculum is leveled. Levels provide additional structure to the curriculum by serving as formative evaluation points. Levels are determined by the amount and complexity of the material to be learned. A level may be one semester or several semesters, depending upon the profession.

In summary, the curriculum design defines the relationship of each element of the curriculum to the other and guides selection and organization of learning experiences. It is a dynamic, multidimensional design that reflects the aims and purposes of professional education, that is the confluent achievement of professional competence and identity.

**Instructional Modes**

There are a variety of instructional modes available to professional education. In Chapter III of this study, the empirical
literature on the educational strategies found to be effective for the development of each concept supporting the paradigm of professional practice was extensively reviewed. Table 6 summarizes these strategies. The reader, however, is referred back to each of these sections (listed in the Table of Contents) for specific information and reference sources.

Several guidelines for selecting instructional strategies emerge from the literature (1) students need a strong knowledge base in the professional discipline; (2) faculty serving as role models and "mentors" are critically important; (3) students need to be actively involved in learning; (4) student-peer interactions facilitate professional development; and (5) consistent clinical opportunities to assume the "quasi" professional role are imperative. These findings support the proposed curriculum design in that discipline knowledge serves as an organizing structure and the concepts of professional competence and identity are integrated and developed via opportunities for environmental interaction which includes clients, faculty, and the student peer group.

**Evaluative Processes**

Figure 7 illustrates application of Stufflebeam's CIPP model to the overall evaluation of the professional curriculum. The curriculum is evaluated within the context of the University, the paradigm of professional practice (i.e. the achievement of professional competence and identity), the profession (as part of the governing coalition), and society. Input evaluation assesses the attributes of the incoming students as potential products of the curriculum. This may include standardized measurements (e.g., Scholastic Achievement Tests or
Table 6. Summary of Educational Strategies Empirically Demonstrated to be Effective in Developing Supportive Concepts of Professional Practice

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Problem Solving Judgment</th>
<th>Creativity</th>
<th>Empathy</th>
<th>Self-Efficacy</th>
<th>Integrity</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical analysis of subject matter</td>
<td>Case-study</td>
<td>Brainstorming</td>
<td>Role playing</td>
<td>Performance accomplish-</td>
<td>Values Clarify-</td>
<td>Active Participation in teaching-learning activities</td>
</tr>
<tr>
<td>Role Modeling by faculty</td>
<td>Problem-solving activities</td>
<td>Non-threatening atmosphere</td>
<td>Modeling</td>
<td>Modeling</td>
<td>Values Inquiry</td>
<td>Active participation in evaluation</td>
</tr>
<tr>
<td>Formal course work in logic</td>
<td>Clinical experience</td>
<td>Exposure to different types of experiences</td>
<td>Participant observation</td>
<td>Verbal persuasion</td>
<td>Moral dilemmas</td>
<td>Clinical experience</td>
</tr>
<tr>
<td>Student participation in classroom discussions</td>
<td>Simulation</td>
<td>Formal courses in creative problem solving</td>
<td>Self and other evaluation</td>
<td>Participant modeling</td>
<td>Just community approach</td>
<td>Faculty assuming &quot;mentorship&quot; type roles</td>
</tr>
<tr>
<td>Student peer interaction</td>
<td>Cognitive feedback</td>
<td>Synectics</td>
<td>Clinical experience</td>
<td>Proximal goal setting</td>
<td>Humanities coursework</td>
<td></td>
</tr>
<tr>
<td>Teacher encouragement</td>
<td>Computer assisted instruction</td>
<td>Morphological synthesis</td>
<td>Feedback</td>
<td>Group Support</td>
<td>Positive faculty-student relationships</td>
<td></td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Problem Solving Judgment</td>
<td>Creativity</td>
<td>Empathy</td>
<td>Self-Efficacy</td>
<td>Integrity</td>
<td>Autonomy</td>
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</tr>
<tr>
<td>Computer assisted instruction</td>
<td>Decision making trees</td>
<td></td>
<td>Small group instruction</td>
<td></td>
<td>Applied Ethics courses</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 - continued
Figure 7. Model for Overall Curriculum Evaluation
Critical Thinking Analysis), personal interviews, solicited recommendations, and/or prior academic records. Input evaluation should be holistic in order to assess the perceptual, cognitive, affective, and psychomotor characteristics of the individual, as well as provide baseline data on each of the concepts in the paradigm, since successful professional socialization mandates growth in all these areas. In addition, faculty attributes should be assessed since they are implementers and facilitators of the curriculum. As stated, in the curriculum system the most important maintenance source is human effort and motivation.

Process evaluation uses multiple methods to assess progressive socialization into the profession. Teacher-made tests, written assignments and performance evaluations are frequently used. In addition, as noted in Chapter IV, student self-evaluation and the "self as instrument" concept is important to the development of professional autonomy.

To apply the self as instrument concept to professional education, the student and faculty in collaboration define the criteria for evaluation as they define the student's involvement in learning experiences. Gradually, as students become more self-directed, the collaborative process is one where the faculty only refines, where necessary, the criteria defined by the student. Thus, the student develops the ability to judge the merits of his or her own performance given differing situational contexts. In essence, the student learns to become an astute observer of the environment and his/her impact as a professional on it. The faculty serves in a collaborative, eventually collegial, role using self as a well-trained observer and critic of events. Evaluation is therefore concerned with the student, in
collaboration with others, determining which of his/her own objectives have been achieved and which have yet to be achieved.

Finally, product evaluation assesses the impact of the curriculum on students' development by immediate and long-term follow-up of graduates. This may be achieved through measures obtained from professional licensure or certification and/or questionnaires and interviews with graduates and their employers. A true measure of the effectiveness of the curriculum, however, would be an evaluation of actual professional practice, as defined by the paradigm, that is achievement of professional competence and identity. In order to accomplish this, a qualitative approach using participant-observation techniques involving the professional, employer, and clients would be necessary.

Application of the Curriculum Design

To demonstrate how the curriculum design can be applied in an undergraduate, preservice professional program, a hypothetical first level is illustrated (Table 7). The illustration is intended to show how the practice paradigm is achieved through specific coursework, instructional modes, and evaluative processes. It is not prescriptive, only suggestive of one way the curriculum design can be actualized. The important criterion for choosing coursework and teaching and evaluation strategies is the vivification of each and every concept of every level of the curriculum as a dynamic design. Concepts receive different emphasis at different levels, and their interaction with other concepts varies, depending on the nature of the profession. For example, autonomy would be strongly stressed in the later levels when students
<table>
<thead>
<tr>
<th>Curriculum Component</th>
<th>Supportive Concept</th>
<th>Instructional Modes</th>
<th>Evaluative Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coursework from Arts, Sciences and Humanities</strong></td>
<td></td>
<td></td>
<td>Various evaluation processes could be used in the different courses. Examples include: Teacher-made tests, written assignments, and field investigations. The emphasis, however, should be on evaluating the applicable concept(s) of the paradigm. Therefore, evaluative processes within these courses should also include methods that simulate real-life situations, allow for peer and faculty feedback, and student self-evaluation.</td>
</tr>
<tr>
<td>Philosophy - (Logic) - An introduction to ways of analyzing arguments</td>
<td>Critical Thinking Judgment</td>
<td>Role Modeling by faculty Student participation</td>
<td></td>
</tr>
<tr>
<td>Psychology - (creative problem-solving) A systematic approach to problem-solving. Emphasis on creative thinking. Focus on sound procedures of inquiry and effect of subjective factors (e.g. bias, emotions, attitudes, and values)</td>
<td>Creativity Problem Solving Integrity</td>
<td>Problem-solving Activities Brainstorming Cognitive Feedback</td>
<td></td>
</tr>
<tr>
<td><strong>Coursework supportive of the professional discipline (e.g. Biology, Science, Math, Art)</strong></td>
<td>Knowledge</td>
<td>Didactic Instruction</td>
<td></td>
</tr>
<tr>
<td>Sociology - (occupations and professions) Examination of work and professions as mediators between individuals and society.</td>
<td>Integrity Self-efficacy</td>
<td>Attitude Exploration Sociological Analysis</td>
<td></td>
</tr>
<tr>
<td>Professional Role Seminar I</td>
<td>Professional Science Course I</td>
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<td>Emphasis on values clarification, attitude exploration and personal motivation for choosing the profession</td>
<td>Emphasis on modes of communication between client and professional and purposes of information exchange; Clinical experience in practice setting participating and observing</td>
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<td>Integrity</td>
<td>Didactic instruction</td>
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<td>Self-efficacy</td>
<td>Role playing</td>
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<td>Performance accomplishments</td>
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<td>Active participation</td>
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<td>Clarifying Responses</td>
<td>Self-evaluation</td>
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<td>Active listening</td>
<td>Criteria developed in collaboration with faculty</td>
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<td>Role playing</td>
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<td>Proximal goal setting</td>
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<td>Group support</td>
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Table 7 - continued
have the requisite knowledge and problem-solving skills upon which to render accurate judgments. The continuity of each concept, however, is maintained throughout.

To further illustrate the design, Figure 8 demonstrates how one concept, integrity, is developed vertically throughout the entire curriculum. This schema combines the approaches to moral education discussed in Chapter III which encompasses the individual's personal values, societal norms, and professional standards as a framework for moral-ethical reasoning, decision making, and behavior. The hierachial strategies would be incorporated at different levels of the curriculum appearing in various curriculum components. For example, values clarification should be introduced early in the curriculum to assist students in sorting out their personal values within societal norms. Students then would enroll in coursework in moral philosophy, which provides the basis for ethical decision making. Throughout the professional science courses, professional ethics, moral judgment in the professional role and value inquiry analyses are stressed. Values reclarification is then necessary for students to assimilate their personal and professional value systems.

**Summary and Recommendations**

This study proposed a paradigm for professional practice which integrated the technical-theoretical and intrapersonal domains of the professional role; that is the confluent achievement of professional competence and identity. The stated purpose of the paradigm was to direct professional curriculum development.
Figure 8. Framework for the development of Professional Integrity (adapted from Sternberg, M.J. Ethics as a component of nursing education. Advances in Nursing Science, 1979, 1 (3), p. 59.)
The strength of the paradigm is seen in its extensive theoretical and empirical support. Principles and propositions derived from the paradigm provide a means for its own interpretation and verification. It is a synthesis of theoretical thought in cognate fields related to professional practice and education.

The vivification of the paradigm is achieved through creative curriculum development within professional schools. Curriculum designing, however, is both an art and science with its own distinct body of knowledge. It is through the integration of theoretical formulations underlying both professional practice and curriculum that a congruous socialization process into the profession will emerge. Within this context, several generalizations are made:

1. Effective professional practice will result when professionals achieve both competence and identity within their professional role.

2. There are at least eight interrelated human processes, traits, and skills that contribute to achieving professional competence and identity: critical thinking, problem solving, judgment, creativity, empathy, self-efficacy, integrity, and autonomy.

3. The professional school can purposefully direct the professional socialization process to insure the achievement of both professional competence and identity.

4. The curriculum is the medium through which the professional school will accomplish its goal.

5. Curriculum is a system of interactive elements that includes professional knowledge and practice, society, the learner, the profession, and a distinct planning process.

6. Professional curricula can be designed within the context of this system and reconceptualized within the practice paradigm.

7. Curriculum design in professional education is dynamic and multidimensional.
This study was an initial effort in synthesizing the relevant theoretical and empirical literature in relation to professional practice. As such, it provides many questions for further research. Therefore, it is recommended that empirical studies be conducted to test the practice paradigm; specifically, translate the stated propositions into workable hypothesis for research.

No one curriculum design can satisfy the needs of all professions. The design generated in this study was intended to serve as a guide as well as a criterion. It proposed one way professional schools can better prepare graduates to meet society's changing needs, increase professional accountability, and fulfill self-actualizing personal and professional goals. The need for professional schools to formally address themselves to students' complete professional development cannot be overemphasized. Therefore, the following recommendations are made:

1. Self-evaluation of existing professional curricula be conducted to
   a) identify underlying assumptions upon which the curriculum is built.
   b) determine the extent to which professional competence and identity are addressed.
   c) identify the prominent curriculum design(s) used.
   d) identify various instructional modes used.
   e) identify on-going evaluation methods for the curriculum.

2. Curricula be designed or re-designed using the practice paradigm and illustrative design generated in this study as a guide.

3. Action-research be conducted to assess on-going development and implementation of the curriculum design.
4. Staff development programs for all faculty be conducted to increase awareness of curricular aims, purposes and design with the goal of increasing active participation in the curriculum development process and maintaining integration of the curriculum design.

5. Communication networks both intraprofessionally and interprofessionally be developed for the purpose of facilitating curriculum development.

6. A commitment of time and resources be made by faculty and administration to the development of a curriculum that fosters complete professional growth.
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Geraldine E. Long was born in Long Island, New York, on July 9, 1951, to Geraldine A. Talcott and William S. Kerridge. She moved to Miami, Florida, in 1956, where she attended elementary and secondary public schools.

Geraldine graduated from the University of Miami School of Nursing in 1973. After graduation, she worked as a registered nurse in an intensive care unit in Miami, Florida. She became interested in the field of education shortly before the birth of her son, John, in 1975 and began teaching prepared childbirth classes to expectant parents. In 1977, she accepted a position at the University of Miami as a Clinical Instructor of Nursing. She completed a Master of Science in Nursing degree from the University of Miami in 1980 with a major in adult health and primary care. She is certified as an Adult Nurse Practitioner by the American Nurses' Association.

Geraldine became an Assistant Professor of Nursing at the University of Miami in 1981. Since that time, she has assumed responsibility for coordinating clinical courses in the undergraduate program and contributing to the development and implementation of a fully integrated curriculum. In 1983, she assumed the position of Undergraduate Curriculum Coordinator. Other experiences include teaching nursing research and most recently, teaching a clinical nursing course in Jamaica.
Geraldine is a member of Phi Kappa Phi, Kappa Delta Pi, Sigma Itheta Tau, Phi Delta Kappa, and the American Nurses' Association. She is listed in Who's Who of American Women, Worlds Who's Who of Women and Outstanding Young Women in America.
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Arthur J. Lewis, Chairman
Professor of Instructional Leadership and Support

William D. Hedges
Professor of Instructional Leadership and Support

Stephen M. Fain
Professor of Instructional Leadership and Support
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Pauline H. Barton
Professor of Nursing

This dissertation was submitted to the Graduate Faculty of the Division of Curriculum and Instruction in the College of Education and to the Graduate School, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Dean for Graduate Studies and Research