The relationship between counselor education and moral development, conceptual development and self-actualization

Jered Benjamin Kolbert
William & Mary - School of Education

Follow this and additional works at: https://scholarworks.wm.edu/etd
Part of the Cognitive Psychology Commons, Educational Psychology Commons, and the Student Counseling and Personnel Services Commons

Recommended Citation
https://dx.doi.org/10.25774/w4-zczg-zw67
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6” x 9” black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
THE RELATIONSHIP BETWEEN COUNSELOR EDUCATION AND MORAL DEVELOPMENT, CONCEPTUAL DEVELOPMENT AND SELF-ACTUALIZATION

A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Philosophy

by
Jered Benjamin Kolbert
May 1998
THE RELATIONSHIP BETWEEN COUNSELOR EDUCATION AND MORAL DEVELOPMENT, CONCEPTUAL DEVELOPMENT AND SELF-ACTUALIZATION

by

Jered Benjamin Kolbert

Approved April 1998 by

Victoria A. Foster, Ed.D.
Chairperson of Doctoral Committee

Charles F. Gressard, Ph.D.

Thomas J. Ward, Ph.D.
DEDICATION

The last several years of my life have been particularly growth enhancing as I was engaged in a novel type of personal risk: that of confronting my fear of failing to meet academic challenges. I am grateful to those who inspired and supported me:

Victoria Foster, who helped me to believe in myself. She has been my teacher, mentor, and advocate.

Rick Gressard, whose comforting persona eased my anxieties and whose like-minded love for baseball offered an often necessary diversion. Also, I do not believe I can repay him and Laurie Rokutani for helping me to meet my basic needs like shelter, food, etc.

Tom Ward, who, in modeling self-assuredness, enabled me to believe that it was possible to learn research and statistics.

My family, mother, father, step-father, Rachel, and grandparents, who provided support in reassurance in many forms. For their kinds words, patient listening, excitement, money, and love.

My trusted friends, John, "the leader", Linda, the research consultant, Barbara and Sandee, the fellow doctoral students under torture, Nicole, "the audiovisual gal", and my girlfriend Tina, who gave me space and basic needs assistance.
TABLE OF CONTENTS

LIST OF TABLES ................................................................. vii

ABSTRACT ........................................................................ viii

Chapter

I. INTRODUCTION
   Statement of the problem........................................ 2
   Need for the Study..................................................... 2
   Theoretical Rationale............................................... 4
   Definition of Terms.................................................. 5
   Research Hypotheses................................................. 8
   Sample description & Data Gathering Procedure ....... 9
   Limitations of the Study.......................................... 10
   Plan for the Study..................................................... 10

II. A SELECTED REVIEW OF THE LITERATURE
   Introduction ............................................................. 11
   Counselor Education................................................ 11
   Overview................................................................. 11
   Current Status........................................................ 13
   Validation............................................................... 15
   Cognitive Developmental Theory.............................. 20
   Overview................................................................. 20
   "Is higher better?"..................................................... 24
   Deliberate Psychological Education Model............... 29
   Adult Development.................................................. 31
   Relationship to Education....................................... 32
   Conclusion.............................................................. 33
   Relationship Between Cognitive Development
      and Counseling Behaviors.................................... 35
   Moral Development.................................................. 36
   Overview................................................................. 36
   Validation of Stage Model...................................... 38
   Cross-cultural Validity............................................. 41
   Gender Issues........................................................ 42
   Alternatives to Justice Reasoning............................ 45
   Moral Behavior......................................................... 48
   Rest's Four Component Model............................... 50
   Utilizer Statistic....................................................... 51
   Moral Sensitivity....................................................... 55
   Conclusion.............................................................. 57

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Systems Theory</td>
<td>58</td>
</tr>
<tr>
<td>Overview</td>
<td>58</td>
</tr>
<tr>
<td>Stage Model</td>
<td>59</td>
</tr>
<tr>
<td>Conceptual Level Matching Model</td>
<td>60</td>
</tr>
<tr>
<td>Adaptation of Model to Counselor Characteristics</td>
<td>61</td>
</tr>
<tr>
<td>Validation of Theory</td>
<td>63</td>
</tr>
<tr>
<td>Conclusion</td>
<td>66</td>
</tr>
<tr>
<td>Critiques of Cognitive Developmental Theory</td>
<td>66</td>
</tr>
<tr>
<td>Empirical Critiques of Piaget's Theory</td>
<td>67</td>
</tr>
<tr>
<td>Ideology Critique</td>
<td>86</td>
</tr>
<tr>
<td>Conclusion</td>
<td>91</td>
</tr>
<tr>
<td>Self-Actualization Theory</td>
<td>92</td>
</tr>
<tr>
<td>Overview</td>
<td>92</td>
</tr>
<tr>
<td>Four Major Accomplishments</td>
<td>94</td>
</tr>
<tr>
<td>Relationship to Counseling Related Behaviors</td>
<td>94</td>
</tr>
<tr>
<td>Conclusion</td>
<td>101</td>
</tr>
<tr>
<td>Critiques of Self-Actualization Theory</td>
<td>101</td>
</tr>
<tr>
<td>Summary</td>
<td>104</td>
</tr>
</tbody>
</table>

### III. DESIGN AND METHODOLOGY

- Population and Sample                                                  | 106  |
- Data Gathering                                                          | 110  |
- Instrumentation                                                         | 111  |
  - Defining Issues Test (DIT)                                            | 111  |
  - Paragraph Completion Method (PCM)                                     | 113  |
  - Personal Orientation Inventory (POI)                                   | 114  |
- Research Design                                                         | 118  |
- Specific Null Hypotheses                                                | 119  |
- Statistical Analyses                                                    | 120  |
- Ethical Considerations                                                  | 120  |
- Summary                                                                | 121  |

### IV. RESULTS

- Descriptive Statistics                                                 | 122  |
  - Demographic Data                                                      | 122  |
  - Mean Scores for the DIT                                               | 125  |
  - Mean Scores for the PCM                                               | 127  |
  - Mean Scores for the POI for Counselor Education Students              | 131  |
  - Mean Scores for the POI for Comparison Group Students                 | 134  |
  - Mean POI Scores of Samples Nominated as “Self-Actualizing, “Normal” and “Non-Self-Actualizing” | 137  |
LIST OF TABLES

Table                              page

2-1. Selected Research on the Relation Between Level of Cognitive Development and Counseling Behaviors ......................... 35

4-1. Means and Standard Deviations by Condition for the DIT ............. 125

4-2. Means and Standard Deviations by Condition for the PCM ............ 127

4-3. Mean POI Scores of Counselor Education Students ..................... 131

4-4. Mean POI Scores of Educational Leadership/Special Ed. Students .... 134

4-5. Mean POI Scores of Samples Nominated as “Self-Actualizing,” “Normal” and “Non-Self-Actualizing” ............................. 137

4-6. Intercorrelations Between Measurements for Counselor Education Students and Comparison Group Students .................. 140

4-7. Repeated Measures MANOVA - Multivariate Tests ....................... 143

4-8. Doubly Multivariate Repeated Measures MANOVA - Multivariate Tests 146

4-9. Doubly Multivariate Repeated Measures MANOVA - Follow-up Univariate ANOVAs ..................................................... 149
THE RELATIONSHIP BETWEEN COUNSELOR EDUCATION AND MORAL DEVELOPMENT, CONCEPTUAL DEVELOPMENT AND SELF-ACTUALIZATION

ABSTRACT

There is limited research investigating the effectiveness of counselor education programs. This causal comparative study examined the growth and development in master’s level graduate students, specifically in the domains of moral development, conceptual development, and self-actualization. Research on cognitive developmental theory and self-actualization provided the theoretical and empirical foundation for the design of this study.

As counselor education students progressed through a master’s program they were assessed three different times on the following instruments: Defining Issues Test, Paragraph Completion Method, and Personal Orientation Inventory. In addition, students in master’s programs in educational leadership and special education were combined to form a comparison group, and were measured on the same instruments for the last two testing periods.

The results were mixed. The counselor education students did not increase on the combined dependent variables over time. However, the counselor education students and the comparison group students did increase in conceptual level and self-actualization between the last two testing periods but did not increase in principled reasoning. The time by condition interaction was not significant. The failure to find significant differences for the counselor education over the three levels of time and for the time by condition interaction may have been due to low statistical power.

JERED BENJAMIN KOLBERT

PROGRAM OF COUNSELING, SCHOOL OF EDUCATION

THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA
THE RELATIONSHIP BETWEEN COUNSELOR EDUCATION AND MORAL DEVELOPMENT, CONCEPTUAL DEVELOPMENT AND SELF-ACTUALIZATION
CHAPTER ONE

Introduction

Statement of the Problem

The purpose of this study is to investigate the relationship between participation in a master's counselor education program and student development employing measures of cognitive development and self-actualization.

Need for the Study

Counseling was only first recognized as a distinct profession in the field of mental health in the early 1980's (Heppner, 1990) and faces continued challenges to its professional status. One of the main characteristics of a profession is specialized training. The field of counseling has certainly met this demand. There are currently over 500 counselor preparation programs and many of these programs have received accreditation from state governments and national organizations (Feit & Lloyd, 1990). However, while certain components of counselor training have received empirical support, research on the overall effectiveness of counselor education programs to train students to counsel is scarce (Osborne & House, 1995). The public increasingly demands accountability from the mental health professions (Cormier & Bernard, 1982). Empirical validation of counselor training is necessary to solidify the professional identification of counseling with the public (Osborne & House, 1995).

Counseling is distinct from other mental health professions in that it is primarily concerned with facilitating client development (Ivey & Goncalves, 1987). The counselor's role is seen as "enhancing other persons' competencies to facilitate greater satisfaction and success in their adaptation to
a complex, rapidly changing technological society" (D'Andrea, 1988, p. 22). This conceptualization of the counselor's role is based on several assumptions. First, it assumes that people have an innate drive to mature and develop physically, psychologically, and emotionally. Additionally, extensive environmental stimulation is required to facilitate the development of individuals in all areas (social, emotional, career, moral, cognitive) (D'Andrea, 1988). Research has indicated that people at higher levels of development are better able to process complex information and make finer differentiation and integration of self and others (Blocher, 1980).

Many counselor educators argue that the ability to facilitate client development requires very high levels of cognitive functioning. Blocher (1983) contends that counselors must be able to do the following: (1) take multiple perspectives in order to achieve empathic understanding with people who hold a variety of world views, value systems, and personal constructs, (2) differentiate among and manipulate a wide range and large number of relevant facts and causal factors, and (3) and integrate and synthesize in creative or unusual ways large amounts of such information to arrive at an understanding of the psychological identity and life situations of a wide range of other human beings. Indeed, numerous studies have revealed a correlation between higher levels of cognitive development and essential counseling behaviors, including higher levels of empathy, more complex hypothesis formation, and more complex description of the counselor-client relationship (Peace, 1995). Many studies have found that developmental models of counseling supervision foster counselor development (Gelso, 1990). Despite research evidence relating the counselor's competency with his or her developmental level and empirical support for developmental models of supervision, little research has been
conducted regarding the overall effectiveness of counselor education programs to promote the cognitive development of their students (Sprinthall, 1994).

This study will employ a cognitive developmental framework in researching the training effectiveness of counselor education programs. This investigation contributes to the research literature by examining counselor education as a developmental process and will seek to determine whether counselor education facilitates development in program participants.

**Theoretical Rationale**

John Dewey (1963), one of the founders of cognitive developmental theory, claimed that the aim of education is development. Cognitive developmental theory asserts that development proceeds through stages of cognitive structures, which are thinking patterns employed by persons to organize their experiences. As a consequence of organismic-environment interaction, these psychological structures are reorganized, moving through a sequence of hierarchical, invariant stages. Each stage represents a qualitatively distinct way of interacting with the environment, organizing information, and making meaning of stimuli. Progressive stages are more adequate in the use of problem-solving strategies and more flexible in modes of thought and action (Kohlberg & Mayer, 1972).

Lawrence Kohlberg integrated and redefined Dewey's and Piaget's work on moral development, resulting in a six-stage theory of moral reasoning. The stages represent qualitatively distinct conceptualizations of justice that are utilized to resolve ethical dilemmas. Moral reasoning is relevant to counseling for several reasons. First, counselors are often confronted with complex ethical dilemmas that cannot be readily resolved by following a standard code of ethics (Kitchener, 1986). Additionally, moral reasoning is vital to counselors because
of its positive relationship to empathy (Bowman & Allen, 1988; Bowman & Reeves, 1987), which is considered an essential condition for the client-counselor relationship. Kohlberg claimed that the capacity for role-taking, the ability to understand the perspective of others, is central to and a prerequisite for the process of moral development (Kohlberg, 1975a).

David Hunt's Conceptual Systems Theory describes an individual's level of cognitive complexity referred to as conceptual level. Conceptual level represents the degree to which the individual utilizes abstract thought and is often depicted on a concrete-abstract continuum. Concrete types exhibit less flexibility in problem-solving, tend to organize their experiences in an absolute fashion, and lack tolerance for ambiguity and uncertainty. In contrast, abstract thinkers are portrayed as able to attend to a larger variety of and make finer differentiations among environmental stimuli, identify multiple alternatives, and more independent, responsible, and understanding of self (Hunt, 1975). The qualities of high conceptual levels directly correspond to Blocher's (1983) claims of the essential characteristics of the effective counselor, including the capacities for multiple perspective taking, enhanced differentiation of stimuli, and synthesis of information.

Abraham Maslow's theory of self-actualization will also be used in this study. Although it is not a cognitive developmental theory, the theory of self-actualization emphasizes psychological growth and asserts that people are motivated by a hierarchy of needs. Counselor education programs claim to attend to the personal growth of students and thus the concept of self-actualization is relevant to this investigation.

**Definition of Terms**

*Moral Development.* Moral development is defined in the context of Kohlberg's
moral development theory (1958, 1981) as a developmental stage theory. There are three levels and six stages of moral thinking and value development which involve cognitive processes:

I. PRECONVENTIONAL LEVEL
   1. Heteronomous morality
   2. Individualism, instrumental purpose, and exchange

II. CONVENTIONAL LEVEL
   3. Mutual interpersonal expectations, relationships, and interpersonal conformity
   4. Social system and conscience

III. POSTCONVENTIONAL PRINCIPLED LEVEL
   5. Social contract or utility and individual rights
   6. Universal ethical principles

Kohlberg developed the Moral Judgment Interview, which discerns the individual’s modal stage of moral reasoning. Moral development was assessed using Rest’s (1979) Defining Issues Test (DIT), which indicates the percentage of respondents’ answers that exhibit principled reasoning. Principled reasoning is evident at Kohlberg’s post-conventional level of moral reasoning.

Conceptual Level Development. Conceptual Level development is defined in the context of Conceptual Systems Theory (Harvey, Hunt, & Schroder, 1961), a theory of personality development that describes levels of cognitive complexity. Hunt’s (1971) theory describes three hierarchical stages of personality development:

   Stage A. (Scored by 0-1) Ego-centric, impulsive, irresponsible, immature, unsocialized, may be aggressive or hostile.
Stage B. (Scored by 1-2). Dependent, conforming, simplistic, concrete, dualistic thinker, concerned with the approval of authority and guidelines of social acceptability, abides by rules, interprets life as all good or bad.

Stage C. (Scored by 2-3). Independent, self-reliant, open-minded, relativistic, tolerant, superior at processing information, has developed self-definition.

Conceptual level stages are discerned by the Paragraph Completion Method (PCM) developed by Hunt, Butler, Noy, and Rosser (1977).

**Self-actualization.** Self-actualization is defined as a concept described by Abraham Maslow (1968) to characterize a person who is living a more enriched and fully functioning life than the average person. Maslow contended that people are motivated by needs which are arranged in a hierarchy:

1. **Physiological Needs** - all needs of the body (air, water, and food).
2. **Safety Needs** - security; stability; dependency; protection; freedom from fear, anxiety, and chaos; need for structure, order, law, limits; strength in the protector.
3. **Belongingness and Love Needs** - close, caring relationships with friends, colleagues, a family, or support group.
4. **Esteem Needs** - need for stable, positive evaluation, including (a) desire for strength, for achievement, for adequacy, for mastery and competence, for confidence, for independence and freedom, and (b) desire for reputation or prestige.
5. **Need for Self-Actualization** - desire for self-fulfillment, to realize potentials previously thought impossible. **Intrinsic**
satisfaction arises. Individual differences are greatest. Levels of self-actualization are discerned by the Personal Orientation Inventory (POI) developed by Shostrom (1974).

Counselor Education Program. Counselor education program is defined as a master's degree program in a school of education, designed for students who wish to pursue systematic professional study in education beyond the bachelor's degree. The program in counseling is organized into a series of required foundations courses, basic counseling courses, and a series of courses that enable a student to concentrate in counseling in schools or in agencies. The minimum number of graduate credit hours is from 39 to 45, depending upon a student's area of emphasis.

Subject/Student. An individual enrolled in the master's level counselor education program at a public, southeastern university.

Research Hypotheses

The study will focus on the assessment of moral development, conceptual level development, and self-actualization as demonstrated by master's level counseling students at three testing periods. Analyses will be conducted to determine if the students exhibit changes in their level of moral reasoning, conceptual level, and self-actualization. The following null hypotheses will be provided:

1. Counselor education students' scores on the moral development measure will not increase with each successive testing period.
2. Counselor education students' scores on the conceptual level measure will not increase with each successive testing period.
3. Counselor education students' scores on the self-actualization measure will not increase with each successive testing period.
4. Counselor education students' scores and the comparison students' scores on the moral development measure are not expected not to increase between the last two testing periods.
5. Counselor education students' scores and the comparison students' scores on the conceptual level measure are not expected to increase between the last two testing periods.
6. Counselor education students' scores and the comparison students' scores on the self-actualization measure are not expected to increase between the last two testing periods.

Sample Description and Data Gathering Procedure

The sample for this study consisted of the class of students accepting admission to a master's program in counselor education for one specific admissions cycle, of which there were 32 students.

The study included a comparison sample. The comparison group consisted of the entire class of students accepting admission to a master's program in either special education or educational leadership for one specific admissions cycle. There were 15 educational leadership and 13 special education students, which were combined to form a comparison group of 28 subjects. The special education and educational leadership programs were contained in the same school of education and university in which the counselor education sample population was housed.

Participation was voluntary and subjects were asked to complete a questionnaire gathering demographical data and three research instruments: Defining Issues Test (DIT), Paragraph Completion Method (PCM), and Personal Orientation Inventory (POI).
Limitations of the Study

This research is limited by:

1. Use of subjects from a single institution. Therefore, the results may have limited generalizability to students at other institutions.

2. The lack of a specific model for counselor education and training. Although there is a general format for education and training, the program does not focus on a specific theory of counselor development, education, and training.

3. The inability to include in the results a consideration of the ethnic, social, and religious backgrounds of the students.

4. The comparison group did not receive a pretest and thus comparisons could not be made regarding the initial levels of the dependent variables between the counselor education sample and the comparison sample.

5. The comparison subjects were also enrolled in a program of higher education which research has shown may promote cognitive development. Thus, it complicates the interpretation of the data.

Plan for the Study

Chapter Two of this study will review the literature related to the fields of counselor education, cognitive development, moral development, conceptual systems theory, and self-actualization. Chapter Three will detail the plan for the study and will include population, design, instrumentation, and methods. Chapter Four will summarize the results of the data analysis of the Defining Issues Test, the Paragraph Completion Method, and the Personal Orientation Inventory. Chapter Five will present the conclusions, implications, and recommendations for further research. An Appendix will follow the Bibliography.
CHAPTER TWO
Review of the Literature

Introduction

In the preceding chapter it was established that there is lack of research regarding the effectiveness of counselor education programs in promoting the development of students as counselors. Cognitive developmental theory and self-actualization theory were identified as frameworks for comprehending counselor development and investigating counselor education. This chapter will present and examine research on counselor education, cognitive development, moral development, conceptual development, and self-actualization theory.

Counselor Education

The counseling field is currently challenged with demands of accountability on several fronts. Counseling was only first recognized as a distinct profession in the mental health field in the early 1980's (Heppner, 1990). As a new profession, counseling remains in the process of establishing the characteristics of a profession that confer accountability, such as licensure and certification (VanZandt, 1990). Accountability is increasingly important to the public as increasingly have come to view themselves as consumers and helping professionals as service providers (Cormier & Bernard, 1982).

Counselor education programs play a vital role in establishing accountability. Each of the 41 states that offer counseling licensure require graduation from a graduate level program related to counseling. In Virginia, most licensed professional counselors are graduates of counselor education programs (American Counseling Association, 1994).

Counselor education programs have responded to the demands for
accountability in several ways. There has been increasing utilization of systematic program evaluation to provide a foundation for allocation and reallocation of funds, to provide information to decision makers considering program discontinuation, and to meet the requirements of state and professional accreditation bodies (Osborne & House, 1995). Additionally, there has been a move towards standardized training and certification (Gladding, 1992). Jennings (1989) criticized evaluation efforts and accreditation standards as too focused on faculty qualifications, organizational structure, and curriculum. Jennings argued that evaluation and accreditation must consider the products of the program-the graduates.

The challenge of educating counselors began in late 1950’s following the passage of the National Defense Education Act (Gladding, 1992). The act provided funds for increasing the number of school counselors. Additionally, it established counseling and guidance institutes and allotted funds to train counselors. Counselor education experienced further expansion following passage of the 1963 Community Mental Health Centers Act, which authorized the establishment of community mental health centers. These centers provided opportunities for the employment of counselors outside educational settings. The increasing diversification of counseling during the 1970’s led many counselor education programs to offer specialized training in such areas as community counseling, and business and industry counseling. Whereas the initial focus of counselor education was the preparation of school counselors, counselor education is currently involved in training counselors for a variety of positions and settings (Richardson & Bradley, 1985).

The American Personnel and Guidance Association, the forerunner of the American Counseling Association, established guidelines for educating
counselors in 1965. The guidelines included a master's degree based on two years of graduate work, designed to instill competency in four areas: (1) a broad educational background to enable the counselor to understand his or her clients and their community; (2) basic psychological knowledge, including principles, theories, and research techniques relevant to counseling; (3) mastery of the procedures and skills involved in counseling; and (4) an understanding of employment environments in which counseling is practiced. The guidelines also highlighted the importance of personal growth of the student and required that supervised counseling be provided (Tyler, 1969).

According to Hollis and Wantz (1994), who conducted a 20-year longitudinal study of educational programs in counseling, there are currently 540 graduate level counselor preparation programs. The trend in counselor education is towards growth and diversification. Between 1990 and 1993, there was a significant increase in the number of counselor preparation programs. During this period, programs on the average added two new courses while hardly any dropped courses. Most of the programs coordinators reported that they expected their programs in the near future to increase the number of courses offered, graduation requirements, and the emphasis on experiential components.

The Council for Accreditation of Counseling and Related Educational Programs (CACREP) is an independent council created by the American Counseling Association in 1981 to implement the standards of the counseling profession in preparatory programs. The purpose of this agency is to collaborate with colleges and universities offering counselor preparation programs so that they may obtain accreditation (Stickle & Schnacke, 1981). Hollis and Wantz (1994) identified 235 accredited CACREP programs in 1993.
and found that a staggering 282 additional programs declared an intention to apply for CACREP endorsement by 1996.

Counselor training generally begins with didactic lectures, seminars, and readings. The course content typically includes counseling theories, counseling techniques, psychopathology, human development, occupational and academic guidance, interpersonal relations, and socioenvironmental influences on behavior. Opportunities to apply skills and knowledge initially occurs in role play simulations. The culminating experience for most programs is the practicum or internship in which students conduct counseling with actual clients for the first time (Ford, 1979).

The trend towards diversification in counseling has affected counselor training in several significant ways (Gladding, 1992). Counselor education programs provide more opportunities for specialized training, with many offering concentrations in marriage and family counseling, business and industry counseling, addictions counseling, etc. Furthermore, many programs have expanded their curriculum to incorporate consulting and community development skills and multicultural issues (Van Hestern & Ivey, 1990). Most likely, counselor training shall continue to broaden. Hollis and Wantz (1994) reported that program coordinators of counselor preparation programs expected their programs to add degree majors and courses in the near future.

There has been ongoing debate in counselor education regarding the necessary experiences for the education of counselors. Initially, the debate focused upon skills training. One group of counselor educators argued that counselors are “born” rather than “made”. According to this perspective, students already possess the skills of counseling, and merely need to learn how to differentiate these skills to apply them selectively with clients. The
predominant counter argument was that the skills of counseling are not intrinsic but are acquired through deliberate education (Cormier & Hackney, 1993). A growing view is that skills training is of secondary importance to promoting the cognitive development of students. This theory-based viewpoint suggests that the prerequisites for therapeutic change involves the counselor's use of a highly complicated set of integrated skills. The competent therapist must coordinate theory and techniques with client's issues and developmental level (Shaw & Dobson, 1988). Such a complex task demands higher levels of development (Peace, 1995).

There is a considerable lack of research concerning the effectiveness of counselor education programs in student preparation. One aspect of counselor education that has received extensive theoretical and empirical focus is counselor supervision. Borders (1989a) estimated that there are 25 models of counselor supervision. Borders called for a moratorium on "new and improved" models since current models lack description of practical application and require further empirical investigation using field-based settings.

Another aspect of counselor education that has been extensively researched is the effectiveness of systematic programs for training counselors. Research efforts have primarily focused on three of these programs: Carkhuff's Human Resource Training/Human Resource Development (HRT/HRD), Kagan's Interpersonal Process Recall (IPR) technique, and Ivey's Microcounseling (MC) Procedure. These programs use a didactic approach to teaching human relations/communication skills to the counselor in training (Baker, Daniels, & Greeley, 1990).

Baker et al. (1990) investigated experimental research on the effectiveness of each these three programs with graduate-level counseling
students, employing both a narrative review format and meta-analytic strategy. Eight studies on the HRT/HRD model were selected. The narrative review identified considerable support for the effectiveness of the HRT/HRD model in teaching human relations/communication skills to counselors in training. Furthermore, there was reasonable evidence that skill levels obtained using the model were maintained up to 6 weeks after training and for moderate transfer to actual counseling settings. Meta-analysis revealed a large effect (1.07) for the HRT/HRD model, implying that most trainees improved in their ability to discriminate and communicate the facilitative conditions of the client-counselor relationship.

Ten studies investigating the effectiveness of IPR with graduate-level counselors were selected. The narrative review was inconclusive due to considerable methodological weaknesses contained in most of the reviewed studies of IPR. The overall effect for the IPR model was small (.20). Baker et al. concluded that IPR training has been effective, but the small effect raises concerns about its efficiency.

Baker et al. reviewed twenty-three studies that employed MC with graduate-level counselors. The narrative review found strong support for the general effectiveness of MC. MC appeared to be particularly effective in teaching fundamental communication skills and holds promise for teaching more advanced counseling such as self-disclosure and confrontation. There was a lack of research regarding retention of skills following MC but the little research that had been conducted suggested that retention is positively correlated with the extensiveness of the training. The overall effect was considered moderate (.63).

Durlak (1979) reviewed 42 studies comparing the effectiveness of
professional and paraprofessionals. The studies varied considerably in terms of clinical setting, client populations, and target problems. Professional helpers had postbaccalaureate degrees and received formal clinical training in graduate programs of psychology, psychiatry, social work, or psychiatric nursing. Paraprofessionals included psychiatric aides, parents, volunteers, and college students. The experimental quality of each study was assessed using a 5-point scale for 13 design criteria. The majority of the studies did not identify significant differences in treatment outcome between professional and paraprofessionals. Paraprofessionals were significantly more effective than professionals in 12 studies, whereas only two studies found significant differences favoring professionals. Durlak reported that results favoring paraprofessionals did not appear to be attributable to differences in quality of design. Durlak concluded that "professional mental health education, training, and experience do not appear to be necessary prerequisites for an effective helping person" (p. 89).

Berman and Norton (1985), noting methodological flaws in Durlak’s research, attempted to provide a more appropriate evaluation of the comparative effectiveness of professional and paraprofessionals employing meta-analytic strategy. Ten studies included in Durlak’s review were omitted, due to either problematic classifications of paraprofessional or professional or because treatment was not a form of psychotherapy or did not require psychological skills. Meta-analysis of 32 studies indicated that the groups were equally effective at both the end of treatment and at a follow-up assessment. The effect sizes remained similar when the results were analyzed separately for different types of problems, treatments, and outcome measures. Moreover, subsequent effect sizes were not different when either excluding studies which
possibly confounded therapist status and type of treatment, studies which paraprofessionals received supervision, or studies in which the professional had not completed their training. Berman and Norton concluded "that trained and untrained therapists achieve comparable levels of achievement" (p. 405).

Fong, Borders, Ethington, and Pitts (1997) conducted one of if not the only longitudinal study investigating the relationship between cognitive development and participation in a counselor education program. The sample consisted of 43 student volunteers who entered and completed a 72-semester-hour CACREP accredited program at a large southeastern state university between 1989 and 1994. The participants ranged in age from 21 to 50 (M = 30.80, SD = 8.76). Of the 43 participants, 15 (34.1%) immediately followed the sequence of skills training, to practicum, and on to internships while the rest of the 29 students had less direct paths.

The cognitive developmental measure utilized was the Sentence Completion Test (SCT) of Ego-Development-Form 81. The SCT is a semiprojective measurement of ego development, consisting of 36 sentence stems (e.g. "When I am criticized") with separate forms for gender. The students were administered the SCT at the beginning of the program; at the completion of the first semester, counseling-skills training course; at the end of their practicum; and at the end of their second (final) internship. Two doctoral students trained in rating the SCT scored each item following the original scoring manual (Loevinger, Wessler, Redmore, 1970), and the supplementary manual (Redmore, Loevinger, & Tamashiro, 1978). A specific ego level was assigned following the "automatic rules," and a scale score was assigned for each ego level. Interrater reliability was not reported.

Ten of the 43 participants did not fully complete the SCT and could not be
classified. At the beginning of the counseling program, ego levels ranged from the conformist stage to the conscientious stage, which, according to Loevinger's (1976) theory, are adjacent stages separated by a transitional self-aware level. The median and the modal stages were both the conscientious stages. At the end of the program, ego levels ranged from conformist to individualistic, with the median and mode at the conscientious stage. A Friedman two-way analysis of variance by ranks revealed no significant changes in ego development over time.

Fong et al. (1997) suggest that the lack of change in ego development implies that counselor education training programs are not fostering the growth of students' cognitive structures. However, the researchers speculate that the lack of growth finding may have been due to the inadequacy of the measure utilized. Loevinger (1976) asserted that ego development is unlikely to change in adulthood. However, Lee and Snarey's (1988) review of 9 studies employing the SCT found that adults do seem to exhibit small but significant advances in ego development. The researchers suggest that the construct of ego development may have been too broad a schema or the SCT too general a measure to reflect the structural changes that may occur in counselor training. The researchers recommend that more longitudinal research be conducted.

The study conducted by Fong et al. (1997) also explored how changes in ego development relate to counseling effectiveness. To evaluate the effectiveness of counselors' responses, the Global Rating Scale (Gazda, Asbury, Balzer, Childers, & Walters, 1988) was applied to the students' counseling audiotapes. Each participant audiotaped a counseling session at the start of the program and at the completion of the counseling skills course. Students were instructed to counsel whomever they chose for at least 30
minutes, offering at least 10 counselor responses. The researchers used a modified version of the Global Rating Scale, which formed an 8-point range of response effectiveness. Two doctoral level, trained raters independently rated each response, and computed a mean response effectiveness score. Interrater reliability was good, $r = .88$. The measure of response effectiveness was the average of the two mean effectiveness scores.

Fong et al. (1997) found a moderate, negative relationship between counseling effectiveness and change in ego development, $r = -.205$. The researchers also found a moderate, negative relationship between counseling effectiveness and self-confidence, which was assessed using the Stress Appraisal Scale (Carpenter & Suhr, 1988). In attempting to make sense of these unexpected results, the researchers suggest that "those students who arrived with higher self-confidence and greater cognitive complexity (ego developmental level) would develop better skills in counseling responses but would not show much change in cognitions due to a ceiling effect" (p. 110). They suggested a need for more longitudinal studies to identify the elements of counselor training programs and effective sequencing of curriculum.

This section traced the development of counseling as a profession and the corresponding changes in counselor education. Proposed guidelines for counselor education programs were reviewed. It was noted that there exists a dearth of research on counselor education with the exceptions of counselor supervision and systematic training models. Finally, it was recognized that counseling is a relatively new profession which is still in the process of defining itself.

**Cognitive Developmental Theory**

Cognitive development is not a coherent theory but a set of basic
assumptions advanced by John Dewey and Jean Piaget that are accepted by adherents of varying research backgrounds (Loevinger, 1976). Dewey (1963) was the first to propose that children move through stages of development. Prior to Dewey, the prevailing view was that children were miniature adults who simply grew larger in a quantitative sense. In contrast, Dewey claimed that children develop in a series of qualitatively distinct stages. Each stage represents a different way of organizing thought processes to make meaning of the world. Contrary to Rousseau's tabula rasa, which states that the mind at birth is a blank page, infinitely malleable and open, Dewey characterized children as natural philosophers who are intent on organizing their lives into universal patterns of meaning. People actively construct their perception of the environment, avoiding certain aspects, and interpreting others idiosyncratically, in ways that are consistent with their internal rules, views, and prejudices.

Development is the result of organismic-environment interactions, depending upon the individual's potential and the type and quality of the environment. For Dewey, personal growth is not automatic but requires significant experiences at crucial junctures, necessary to promote one to the next higher stage of development. Loevinger (1976), further elaborating on the relationship between the person and the environment in the context of human growth, claims the environment often determines the nature of the specific change, but its impact is constrained by two aspects of the individual. The selectivity by which people interpret environmental stimuli assures a modicum of continuity between the progressive organizations of developmental sequence. Furthermore, environmental influences are limited by the range of possibilities of the organism's structure.

Jean Piaget applied Dewey's assumptions regarding human development
to cognition. Piaget (1970) asserted that cognition is the regulating mechanism that connects the person to the environment. People actively interpret the environment, in order to construct meaning from their experience, according to specific structures of thought. Structure implies that there are different elements or parts and that these elements are related to each other in a consistent arrangement. The structure is a network of internal relations, which grant each element a meaningful, contributive role to the unity of the system. In addition to possessing wholeness and unity, structures are in equilibrium, meaning that they tend to resist change to maintain their integrity. However, the stability of open systems, such as people, is limited since they require the importation of environmental resources for maintenance. Thus, their internal equilibrium is dynamic, needing to allow for adjustment and accommodation to the environment.

According to Piaget, cognition adapts through two simultaneous and complementary aspects, which he referred to as assimilation and accommodation. Assimilation essentially means interpreting the environment in terms of existing mental structures. Conversely, accommodation involves modifying present structures in order to take account of the characteristics of new persons, objects, or other aspects of the situation. Through repeated assimilation and accommodation of the environment, cognitive structures evolve gradually, further enabling novel and different accommodations and assimilations, and so on. Development is essentially the reorganization of psychological structures due to the change in rules governing the relations among the elements. Development shatters the existing structure and results in a qualitatively different one.

Piaget postulated that people have an intrinsic need to explore and master
the environment. People initially attempt to assimilate their experiences. Confrontation with experiences that their perceptions cannot adequately explain results in disequilibrium. To reduce dissonance and restore equilibrium, people accommodate their perceptions, balancing what they already know with the new information. This dynamic process is referred to as equilibration. The process of equilibration is gradual, as each unfamiliar experience must be balanced with the present structure. The optimal environment for cognitive development is one which provides a slight mismatch between people's views and new information. This principle is alternately referred to as learning by exposure to a moderately discrepant environment or Vygotsky's zone of proximal growth (Sprinthall, Sprinthall, & Oja, 1994).

Piaget (1970) summarized cognitive stages as having the following characteristics: (1) there is an underlying thought-organization, or structured whole, represented at each stage; (2) they are qualitatively different from each other; (3) they form an invariant sequence and are irreversible; (4) they are hierarchical, progressing in complexity.

Through the dialectical process of accommodation and assimilation, the disparate information is integrated. Thus, the individual gradually progresses through stages, representing qualitatively different modes of thinking. Development is progressive and sequential, meaning that stages are not skipped. With each cognitive structural reorganization, or higher stage, an individual makes ever more differentiated and complex adaptations to his/her environment, including the capacity to understand different perspectives, adequately problem-solve, and empathize (Sprinthall & Thies-Sprinthall, 1983).

Cognitive developmental theory incorporates a variety of domains, each of
which focuses on a different aspect of human development, including cognitive
(Piaget, 1970), moral (Kohlberg, 1958, 1981), ego (Loevinger, 1976),
conceptual (Hunt, 1971), interpersonal (Selman, 1980), and faith (Fowler,
1987). The various domains share the fundamental assumptions of cognitive
developmental theory. These assumptions have been theoretically or
empirically validated, and are as follows:

1. Humans have an inborn drive for personal competence.
2. Humans construct their own understanding of the world through a system of
   processing information from the environment.
3. There are qualitative differences in stages.
4. Stages of development follow an ordered, hierarchical sequences, going
   from the less complex to the more complex.
5. There is a relationship between developmental stage and behavior.
6. Developmental growth is interactive.
7. There is a cross-cultural universality of cognitive development.
8. There is a relationship between physical and psychological transformations.
   (Peace, 1992).

Research has corroborated the claim of cognitive developmental theory
that higher stages are related to more adaptive functioning. In the domain of
conceptual complexity, Miller's (1981) review of over 60 studies which
employed Hunt's Conceptual Systems Test as a measure of cognitive
complexity found that persons at higher cognitive levels exhibited behaviors
such as:

1) a reduction in prejudice
2) greater empathic communication
3) more internal locus of control
4) longer decision latencies
5) more flexible teaching methods
6) more autonomy and interdependence
7) enhanced information processing skills

Research has also indicated a positive relationship between conceptual level and counseling-related tasks. Strohmer, Biggs, Haase, and Purcell (1983) examined the relationship of cognitive complexity, counselor anxiety, and client disability condition to accurate empathy in students in a counselor educational program. Subjects were 28 volunteer students enrolled in a counseling theories course who were simultaneously engaged in their first practicum. One month after completing the Paragraph Completion Method, an assessment of cognitive complexity, students observed eight videotaped vignettes of trained actors posing as clients, with half of them exhibiting a physical disability. Following each tape, the students verbally responded to the client's concern.

Two trained, independent raters evaluated the students responses using Carkhuff's (1969) Accurate Empathy Scale, which ranges from 1 (detract significantly) to 5 (adds significantly). The interrater agreement was .89 and interrater reliability for the two sets of ratings was .87. A modified version of Dibner's (1956) cue count was used to assess anxiety. Two trained raters evaluated each student response, yielding an interrater reliability of .94 and an absolute interrater agreement of .70. For the PCM, two trained judges independently rated the responses, achieving an interrater reliability of .83. The median was used to divide students into high and low complexity groups.

Factorial analysis of variance was calculated to identify the relative importance of the three dependent variables, cognitive complexity, anxiety, and
client disability-nondisability, in accounting for differences in empathy ratings. The only significant main effect on empathy ratings was for cognitive complexity. Students with higher cognitive complexity scores had a higher mean empathy rating in comparison to students with low cognitive complexity scores. The main effects for both disability-nondisability and anxiety were not significant. The relationship between empathy and anxiety was also analyzed within both groups of cognitive complexity. Higher conceptual students maintained higher levels of empathy when anxious or when observing a disabled client, but their level of empathy declined when confronted with both conditions. The empathy of the low conceptual student group declined with the presence of either condition. The researchers surmised that higher levels of cognitive complexity allowed for greater tolerance of anxiety.

Holloway and Wolleat (1980) investigated the relationship between clinical hypothesis formation and the conceptual level of counselor education students. Subjects included 37 first-semester students with varying degrees of professional counseling experience.

One month following the PCM administration, each subject viewed a 20 minute videotape consisting of five segments from an initial counseling session. The students were then allotted 45 minutes to complete the Clinical Assessment Questionnaire (CAQ), which is designed to elicit information regarding counselors' hypotheses about a client's problem. The CAQ consists of fives written tasks that direct the counselor in forming hypotheses regarding the client's problems. The CAQ is scored for the presence or absence of six theoretically relevant categories of clinical hypothesis formation. An Overall category, rating the hypothesis and substantiation for general quality of thought and clarity of expression, was added by the investigators.
The PCM was scored by professional raters at the Toronto Institute for Studies in Education. The interrater reliability for the Toronto Institute ranges between .85-.90. The CAQ was scored by experienced counselors trained by the investigators. Interrater reliability for categories 1-6 ranged from .85-.95 and .65 for the Overall category.

Multiple regression statistical analyses were used to test for a linear relationship between the independent variables, conceptual level and professional experience, and each of the dependent variables, the seven categories of the CAQ. There was a positive, significant relationship between subjects' conceptual level and their quality and clarity of expression in forming and substantiating clinical hypotheses and in their posing of divergent questions regarding the clients' behavior. However, conceptual level was not significantly related to elements and time frames used to understand the client, categories of information and number of instances used to support conclusions, nor categories of information sought. Professional experience was not associated with any of the CAQ categories.

Holloway and Wampold (1986) identified similar trends in their meta-analysis of 24 studies investigating the relationship between counselor conceptual/cognitive complexity and counseling-related tasks. Higher stage counselors were more accurate in empathic responding and labeling client affect.

Research indicates that higher levels of moral reasoning correlates with higher levels of functioning, including the ability to empathize (Sprinthall & Thies-Sprinthall, 1983). Bowman and Allen (1988) investigated the relationship between empathy and moral development among counselor education students. Thirty students enrolled in three sections of an introductory
counseling course were administered the Defining Issues Test (DIT). Two groups of 10 were formed, one group consisting of those receiving the highest principled reasoning scores, the other, the lowest. The highest group was composed of 8 women and the average age was 30 years. The lowest group had 9 women and an average age of 27. The students received 10 weeks of facilitative skills training based on the model proposed by Egan (1982). Two faculty members who held doctoral degrees in counselor education rated each student's last audiotaped session using Carkhuff's (1983) Empathic Understanding Scale (EU), with which the raters had extensive previous experience. Interrater reliability for the 20 audiotapes was .91. The high moral development group had significantly higher empathy ratings than the low moral development group (p < .05).

Bowman and Reeves (1987) conducted a similar but more well designed study of the relationship between empathy and moral development. They employed a larger sample and investigated differences in ranges of moral reasoning rather than contrasting high verses low groups. The sample consisted of 35 beginning master's level students in counselor education, educational psychology, and psychology. The students were enrolled in three sections of a counseling practicum in facilitative skills development. The average age was 30, and 83% of the students were female.

The students were administered the DIT at the start of the semester. Upon completion of the 12-week course, two measures were used to evaluate the students' ability to demonstrate empathy. Students' final counseling tapes for the course were rated by the faculty member teaching the course using Carkhuff's EU scale. Additionally, students' written responses to a videotaped session of a client were rated by the experimenters who were ignorant of the
students' DIT scores using the EU scale. Interrater reliabilities for these two raters ranged from .88 to .91 in previous studies.

There was a significant relationship between DIT scores and the supervisor's ratings of final audiotapes (.36, p < .05), and the judges' rating of the written responses to the videotape and the DIT (.61, p < .001). The experimenters suggested that the stronger correlation for the judge's rating may have been the result of varying degrees of anxiety posed by the different situations. Bowman and Reeves concluded that the level of moral reasoning is positively related to the trainee's ability to empathize.

One of the ultimate criteria of validity for a psychological theory is its potential for inducing change (Hunt, 1971). Based on the results of a series of field studies Sprinthall and Thies-Sprinthall (1983) identified the five following elements of educational programming as essential for promoting development:

1. Significant new role taking experience in helping - This condition entails engaging in a new helping experience in a real world context such as mentoring or counseling. Such a new experience challenges the person's preferred style of functioning, referred to in cognitive developmental theory as disequilibration.

2. Careful and continuous guided reflection - The individual must reflect upon and process the new experience. Reflection is guided by the responses of instructors to journals. Based on the work of Flanders (1970), Reiman and Thies-Sprinthall (1993) designed an instructor response guide which initially attempts to match the learner's cognitive level and then gradually mismatches to disequilibrare.

3. Balance between experience and reflection - The new experience is sequenced with reflection and applied analysis activities each week.
4. Programs need to be continuous - The complex goal of modifying cognitive structures requires a continuous interaction between action and reflection. Mosher and Sullivan (1976) report that at least a six-month to one-year period of weekly meetings is generally required for significant cognitive-structural growth to occur.

5. Support and challenge - The leader must adeptly balance the disequilibrium that the participant experiences as a result of assuming a new role, and provide support through high levels of positive regard and accurate empathy in order to facilitate the participant's risk taking (Reiman, 1995).

This cognitive developmental model of educational programming, referred to as the Deliberate Psychological Education (DPE) model, has received empirical support. Sprinthall (1994) conducted a meta-analysis of 11 field studies employing the DPE model with adolescent populations. All but one of the studies employed two different domain measures of cognitive development. The 10 studies assessing moral development used either Kohlberg's Moral Judgment Interview (MJI) or Rest's Defining Issues Test (DIT). Although Loevinger's Sentence Completion Test (SCT) and Hunt's Paragraph Completion Method (PCM), the other two types of cognitive developmental measures used in these studies, claim to represent different domains (e.g. ego vs. conceptual), Sprinthall combined the effect sizes, reasoning that the assessment method is highly similar (e.g., open-ended sentence stems scored according to cognitive complexity). The effect sizes were very significant (moral = +.85, ego/conceptual = +1.10) for both measures of cognitive development.

According to Sprinthall, several characteristics of the studies included in the meta-analysis enhance generalization. The educational programs were independent of the measures in content and process. All but one of the studies
employed two measures of the dependent variable. In order to reduce multiple-treatment interference, the studies used a shortened version of the Loevinger index. In comparison to each other, the studies' samples varied in terms of socioeconomic and minority status, region of country, population density, and types of schools and colleges. Finally, the use of two measures with such contrasting formats as the SCT or PCM versus the MJL or DIT establish cross-validation for the treatment's potency. The most significant weakness of the studies in general was that roughly half were quasi-experimental designs. However, a meta-analysis involving 500 studies conducted by Cohen, Kulik, and Kulik (1982) found no differences in effect size by true versus quasi-experimental designs.

In the past several decades, the topic of adult development has received increasing focus within the field of cognitive development (Mines & Kitchener, 1986). Originally, cognitive developmental theorists assumed that stage growth did not occur after early adulthood (Sprinthall, 1994). Piaget (1972) claimed that most individuals attained the highest stage of cognitive development, formal operations, between the ages of 11 and 15 and that intellectual development ends with adolescence. Kohlberg (Kohlberg & Kramer, 1969) initially concurred with Piaget until longitudinal research studies, such as Colby, Kohlberg, Gibbs, and Lieberman (1983), found that at least some adults continue to advance in moral development in both stage and sequence. Kohlberg subsequently revised his theory to incorporate the possibility of growth in adulthood (Sprinthall, 1994).

There is growing evidence that among adult populations the DPE Model is effective in promoting principled reasoning and conceptual complexity, as well fostering acquisition of different helping skills. Such development has been
been achieved with different helping professions groups, including counselor mentors (Peace, 1992), supervising teachers (Thies-Sprinthall, 1984), mentor teachers (Reiman, 1988; Reiman & Thies-Sprinthall, 1993), and preservice teachers (Reiman & Parramore, 1993; Watson, 1995).

Longitudinal studies have found that years of formal education is one of the strongest and most consistent correlates in moral judgment and that formal education is necessary for adult moral development (Colby et al. 1983; Rest & Deemer, 1986). In Colby et al.'s 20-year longitudinal study using the MJI, the correlation of moral judgment development with formal education was .54, which was higher than the correlations between moral judgment and either social class or intelligence. The correlation between moral judgment and education at age 28 was strong and significant even after controlling for intelligence (.36, p < .05), social class (.45, p < .05), and when removing intelligence and social class together (.26, p < .05). All subjects who attained stage 4 attended at least some college and none of the subjects achieved stage 4/5 without graduating from college. Colby et al. concluded that educational experience itself is positively related to moral judgment.

A 6-year longitudinal study which used the DIT also found that advancement in moral reasoning was strongly related to education and is an important component for moral development in adults. Seventy-four high school seniors, of which 54.5% were female, were in tested in two-year intervals consisting of three follow-up tests. Fifty-six completed the DIT four years after high school graduation, and 36 six years after high school graduation. Two-way analysis of variance was computed on P-scores of subjects grouped by college (college/noncollege) and time of testing. There was a main effect for education $F(1, 34) = 5.41, p = .026$ and a main effect for
time of testing $F(3, 31) = 8.73, p = .001$, and an interaction effect of education with time $F = 3.09, p = .03$. The correlation between education (ultimate number of years in college) with the P-score increased systematically over time; in high school, the correlation was .15; two years later, it was .36; four years later, .37; and six years later, .44. The pattern revealed was that the college students' P-score increased whereas the non-college group did not. There was evidence that the college graduates continued in their moral development after college. The P-scores increased for 19 of the 23 college graduates two years after their college graduation year (Rest, 1975; Rest, 1986a).

McNeel (1994) compared studies that investigated the relationship between DIT scores and college attendance. McNeel selected studies that covered the entire four years at a single college, which yielded 12 studies and 22 samples. Samples were grouped according to method of design (longitudinal versus cross-sectional) and college type (7 liberal arts colleges, 3 universities, and 2 Bible colleges). McNeel calculated the effect size of each sample and averaged the effect sizes of each grouping. The average effect size for liberal arts colleges was large (longitudinal = .79, $n = 6$; cross-sectional = .81, $n = 7$). The average effect size for universities was large to moderate (longitudinal = .80, $n = 2$; cross-sectional = .48, $n = 3$), and minimal to moderate for Bible colleges (longitudinal = .02, $n = 1$; cross-sectional = .48, $n = 2$). McNeel concluded that the college experience is very effective in promoting DIT gains.

**Summary**

This section traced the historical progression of cognitive development expressed in the work of Dewey in Piaget. The fundamental assumptions of cognitive developmental theory were reviewed. The literature regarding
whether “Is higher better?” was reviewed. The essential components of
development were stated and the effectiveness of programs incorporating
these components was reported. It was noted that there is an emerging focus
on adult development which research suggests requires formal education.
### Table 2-1

**Selected Research on the Relation Between Levels of Cognitive Development and Counseling Behaviors**

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Measure</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowman &amp; Reeves</td>
<td>Rest</td>
<td>Higher Stage: Higher Level</td>
</tr>
<tr>
<td>Empathy (1987)</td>
<td>Moral Stage</td>
<td></td>
</tr>
<tr>
<td>Bowman &amp; Allen</td>
<td>Rest</td>
<td>Higher Stage: Higher Level</td>
</tr>
<tr>
<td>Empathy (1988)</td>
<td>Moral Stage</td>
<td></td>
</tr>
<tr>
<td>Strohmer, Biggs, Haas &amp; Purcell</td>
<td>Hunt</td>
<td>Higher Stage: Greater Empathy with Disabled Clients</td>
</tr>
<tr>
<td>(1983)</td>
<td>Conceptual Level</td>
<td></td>
</tr>
<tr>
<td>Holloway &amp; Wolleat</td>
<td>Hunt</td>
<td>Higher Stage: More Hypothesis Formation</td>
</tr>
<tr>
<td>Complex (1980)</td>
<td>Conceptual Level</td>
<td></td>
</tr>
<tr>
<td>Ego Stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ego Stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borders (1989b)</td>
<td>Loevinger</td>
<td>Higher stage: More objective in session thought processing, fewer negative thoughts about self (counselor) and client</td>
</tr>
<tr>
<td>Ego Stage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Moral Development

Dewey and Piaget regarded moral reasoning as a cognitive process and thus subject to the same principles of cognitive development (Kohlberg, 1975a). Dewey (1963) postulated a theoretical conceptualization of moral development which included the following three levels: (1) the pre-moral or preconventional level “of behavior motivated by biological and social impulses,” (2) the conventional level of behavior “in which the individual accepts with little critical reflection the standards of the group,” and (3) the autonomous level in which “conduct is guided by the individual thinking and judging for himself whether a purpose is good, and does not accept the standard of his group without reflection.” These levels generally correspond to Kohlberg's three major levels (Kohlberg, 1975a).

Piaget (1932), using an approach similar to his study of cognitive stages, was the first to systematically investigate moral development, interviewing and observing children playing games with rules. Piaget began his investigation with the assumption that the core of moral reasoning is based on a respect for the rules of the social order and a sense of justice. Piaget identified three stages of moral development, which are as follows: (1) the pre-moral stage, in which there is lack of obligation to rules, (2) the heteronomous stage, where right is literal obedience to rules and an equation of obligation with submission to power and punishment, and (3) the autonomous stage, in which the purpose and consequences of following the rules are considered, and obligation is based on reciprocity and exchange. These three stages are very similar to the first three stages of Kohlberg’s model: Stage 0 (pre-moral), Stage 1 (heteronomous), Stage 2 (instrumental reciprocity).

Kohlberg (1975a), seeking to answer “What is virtue,” approached the
issue of moral reasoning and its development, utilizing cognitive
developmental theory and liberal moral philosophy. Kohlberg concurred with
Piaget that people are moral philosophers, "automatically reflecting upon social
experiences and making meaning structures that organize social experience"
(Rest, 1986b). People actively interpret, or assimilate, situations involving
moral conflict through moral meaning structures, which are conceptions of what
is fair and how to best organize social cooperation. Kohlberg (1975a) posited
that moral stages have the following characteristics in common with Piaget's
cognitive stages: (1) they are "structured wholes" or organized systems of
thought, meaning individuals are consistent in level of moral judgement, (2)
they form an invariant sequence, and (3) they are "hierarchical integrations," in
that higher stage thinking incorporates lower stage thinking and there is a
tendency to prefer the highest stage available. Furthermore, stages imply
qualitatively different modes of thinking or problem-solving. Kohlberg claims
his six stages or moral development are universal and occur in a regular
sequence of stages.

Kohlberg drew on liberal moral philosophy, particularly that of Immanuel
Kant and John Rawls, to define moral reasoning. Liberal moral philosophy
asserts that superior morality is principled in that judgments are based on
universal standards. In contrast to rules which are determined by individual
societies and enforced by social authority, principles are universal guides for
moral decision making. Moral principles are essentially issues of justice, "for
giving each his due." For Kohlberg, the core of justice is "the distribution of
rights and duties regulated by concepts of equality and reciprocity" (Kohlberg,
1976, p. 40). Moral reasoning represents the principles of justice guiding the
individual's judgment when confronted with conflicting claims, defining the
individual's sense of rights and duties towards self, others, and society.

According to Kohlberg, moral development represents the qualitative reorganization of reasoning about justice and the relationship between the self and society's rules and expectations, progressively moving towards more principled ways of thinking. At the first level of moral development, the preconventional level, the individual's thinking is ego-centric, primarily concerned with self-gratification. Rules and social expectations are external to the self. At the conventional level, the individual is increasingly aware of interpersonal relationships and the rights of others. The self identifies with the rules and expectations of others, at first with that of his or her peer group and eventually extending to society as a whole. At the post-conventional level, the self is differentiated from the rules and expectations of others and values are defined in terms of self-chosen principles.

Kohlberg approached the study of moral development in a manner similar to Piaget's investigation of cognitive development, searching for age differences in problem-solving strategies (Rest, 1994). Kohlberg initially tested his theory by presenting a series of moral dilemmas to 98 adolescent males. He probed the justifications of the boys' decisions, categorizing the responses according to his six stage model. Kohlberg (1994), advocating a "bootstrapping" approach to the study of moral development, conducted longitudinal research with his original subjects, resulting in revision and refinement in the scoring and description of the stages.

Colby et. al (1983) reanalyzed the data of Kohlberg's earlier 12-year longitudinal study of his original subjects and extended data collection another 8 years. The primary purpose of the study was to validate the basic assumptions of Kohlberg's theory of moral judgment and it is considered the
most rigorous test of his theory (Gielen, 1994). The original sample of 98 adolescent males were stratified by three levels of age (10, 13, 16) and two levels of sociometric status and social class. The subjects were tested at three to four year intervals for 20 years, representing six testing times. Only those subjects who were tested more than once were included in the analysis, yielding a total sample of 51 (7 were analyzed separately to construct the Standard Issue Scoring Manual). Each of the subjects were individually interviewed on the same nine hypothetical dilemmas which comprise the three forms of the MJJI (forms A, B, and C). A different rater scored blindly each of the forms according to the Standard Issue Scoring Manual.

Reliability data for the Standard Issue Scoring Manual was obtained through a separate analysis of a sample of 84 volunteer students, ranging in age from 8 to 28. One-month test-rest reliability for both Forms A and B were in the high nineties. Roughly three-fourths received identical scores using a 9 point scale and between one-half to two-thirds received identical scores using a 13-point scale. Interrater reliability for forms A, B, and C ranged from .92 to .98. Alternate form reliability was based on this separate sample and the longitudinal study. The correlation between moral maturity for forms A and B in the separate sample was .95 compared to .84 for the longitudinal sample. In the longitudinal sample, the correlation was .82 for forms A and C, and .84 for forms B and C. Internal consistency was calculated using Cronbach’s alpha, with form A .92, form B, .96, and form C .94.

Kohlberg’s theory assumes that the stages form an invariant sequence, thus predicting that variation in stage movement would not occur. The results support this assumption in several ways. Since for all three forms, the frequency of downward stage change in the longitudinal study, ranging from
5% to 7%, was less than half the frequency of downward stage change found in test-retest data, the violations of longitudinal sequence were attributed to measurement error. The invariant sequence assumption also predicts that people do not skip stages, each stage being prerequisite for those that follow it. Despite the four-year interval in testing periods, not one subject on any form skipped a stage.

Another basic assumption of Kohlberg's theory is that the stages represent "structured wholes," which predicts generality across moral issues. Analysis of internal consistency in moral judgment revealed that most interviews received all of their scores at a single stage or at two adjacent stages. The mean percentage of reasoning at the individual's modal stage ranged from 67% to 72% for the three forms. Only 9% showed evidence of a third stage. Multiple regression analyses revealed that the proportion of variance accounted for by stage score far exceeded that of succeeding factors, leading the researchers to conclude that moral judgment is a single, general domain. The assumption of structured wholeness is also supported by high degree of test-rest and alternate form reliability and the high Cronbach alpha.

The study identified a clear relationship between age and moral judgment stage. The correlation between moral maturity score and age was .78. The modal stages for the age ranges were as follows: stage 1/2 for 10 year-olds, stage 2/3 for 13-14 year-olds, stage 3 for 16-18 year-olds, stage 3/4 for 20-22 year-olds and older age ranges. Some of the subjects exhibited substantial development of moral reasoning into young-adulthood-between ages 29 and 33. Multiple regression analysis revealed that age accounted for 60% of the variance in moral maturity scores. There was a positive correlation between socioeconomic status and moral maturity scores. The correlations between
intelligence and moral judgment were modest ($r$ ranged from .37 to .59).

In summary, the study provided considerable support for the construct validity of Kohlberg's theory. The internal consistency of stages suggested the presence of a single, general domain. Moral judgment appeared to have developed through a stepwise sequence.

Cognitive developmental theory asserts that cognitive structures represent the most fundamental aspects of human experience and are thus cross-cultural (Gielen, 1994). Likewise, Kohlberg believed that certain conceptions are so basic to human interaction that they are relevant to every culture (Rest, 1994). Kohlberg claimed that his six-stage theory captured the deep structural conceptions of moral reasoning and thus transcends culture.

Snarey, Reimer, and Kohlberg (1985) conducted a longitudinal study for the purposes of evaluating the validity of Kohlberg's theory from a cross-cultural perspective and to understand the uniqueness of social-moral reasoning among Israeli kibbutzniks. The sample consisted of 92 adolescents, divided into four subsamples, each representing a kibbutz cohort, including both adolescents born in the city and the kibbutz. The subjects were individually interviewed in Hebrew, using a translated version of the MJI, Form A, and a subsample of subjects were reinterviewed one or two years later and again five years later. Tape-records of the sessions were transcribed, randomly distributed to three expert scorers, and scored blindly using the Standard Issue Scoring Manual (Colby, Kohlberg, Gibbs, Candee, Speicher-Dubin, Kauffman, Hewer, & Power, 1982) which provides two indexes of moral development: a continuous moral maturity score and a categorical global stage score. Interrater reliability among the three scorers was estimated to be .91 for the moral maturity scores and .89 for the global stage scores.
The findings supported Kohlberg's claim that development is sequential and progressive. The small regression occurrence (6.3%) was nearly identical to the amount found in the longitudinal study of United States adolescents and was attributed to measurement error. None of the longitudinal subjects completely skipped a stage. Furthermore, the mean moral maturity scores increased consistently with age and regression analysis revealed that age accounted for 40% of the variance in morality scores.

Kohlberg's claim for "structured wholeness" was also corroborated. Reasoning was found to be stage consistent within interviews. The reasoning in 83% of the interviews was at one major stage or in transition between two adjacent stages, and there were not any instances of a subject reasoning at two nonadjacent stages. The correlations among the stage scores for each of the six issues that comprise the global stage scores were all positive, significant, and moderately high (.745 to .442, p < .001). Finally, the proportion of variance was predominantly accounted for by only one general factor.

The researchers also investigated the relationship between moral reasoning and gender and cultural particularities among the kibbutzniks. The association between gender and moral stage was weak (ranging from .16 to .25) and not significant. The data regarding the cultural uniqueness of moral reasoning was generally consistent with previous research with some notable exceptions. Kohlberg's scoring manual did not accurately identify the kibbutz culture's emphasis on communal values and the collective good as post-conventional reasoning. This finding suggested the need for the revision of the scoring manual to include a more pluralistic understanding of postconventional reasoning.

Kohlberg's justice-based definition of morality has received several
challenges. Gilligan (1982) argued that women utilize a different interpretive system for moral reasoning which is based on an ethic of care rather than justice. Consequently, women's moral development is distinct from men's, guided by the orientation towards care which emphasizes, among other things, sensitivity and responsibility to the needs of others. Gilligan claimed that Kohlberg's theoretical focus and research methods unfairly favored men over women.

Walker (1984), investigating Gilligan's claim that Kohlberg's theory is biased towards women, reviewed research studies that both used the MJI and reported the analysis of sex differences. One of Gilligan's primary objections to Kohlberg's theory was that his definition of post-conventional reasoning did not include the ethic of care, implying that sex differences would not appear until adulthood when such reasoning is more prevalent. Thus, Walker employed a developmental analysis, dividing the studies according to the age range of their samples.

For childhood and early adolescence, Walker reviewed 31 studies involving 2,879 subjects who ranged from 5 years to 17 years. Sex differences were found to be infrequent, with only 6 of the 41 samples indicating significant differences. Walker summarized the findings, stating that "sex differences in moral reasoning apparently are rare early in the life span and, when they occur, indicate more mature development for females, although even these infrequent differences are relatively small" (p. 681).

Walker examined 35 studies involving adolescents and young adults, consisting of a total of 3,901 subjects who were mostly high school and university students. Similar to the rarity of sex differences among children, only 10 of the 46 samples revealed significant sex differences. However, most of the
studies which reported significant sex differences found more mature
development for males, although the differences were small, usually consisting
of less than a half stage.

The review of studies on adults included 13 studies, comprising a total of
1,223 subjects who ranged in age from 21 years to over 65 years. Of the 21
samples, only four significant differences were identified, all favoring men.
However, in the studies that reported significant sex differences, sex was either
confounded with educational or occupational differences. Kohlberg and
Kramer's (1969) assumption that among adults women fixate at stage 3
whereas men progress to stage 4 was not corroborated since in most of the
studies the modal moral stage was the same for men and women.
In summary, sex differences were reported infrequently and the differences that
were significant tended to be small.

In addition to the review, Walker performed a meta-analysis of the studies.
Although there was a trend towards supporting the hypothesis that moral
reasoning of males was more advanced, it was not significant (Z = +.73, p = .23,
one-tailed). Thus, the results of the meta-analysis were consistent with the
review.

In response to criticisms regarding the applicability of the meta-analytic
procedure he employed, Walker (1986) both reanalyzed and updated his
original review. Walker reanalyzed the 11 disputed samples, substituting the
Kolmogorov-Smirnov test with the Mann-Whitney test, which is more likely to
detect differences among the type of data in question. Only one of the samples
yielded a significant difference in moral reasoning by sex, and only a minor
change was revealed through recalculation of the meta-analysis (from the
original Z = +.73 to + 1.06, one-tailed p = .14).
Walker expanded his review to include studies conducted in the interim, bringing the total to 80 studies involving 152 samples and a total of 10,637 subjects. The vast majority (85.5%) did not report significant sex differences. The 9 samples in which females had higher scores tended to occur in homogeneous samples of school and university students. In contrast, the 13 samples that favored males tended to be samples of adults who differed in education and occupational status. Once again, meta-analysis supported a trend favoring male reasoning as more advanced, but it was not significant ($z = 1.08$, one tail $p = .14$). The mean effect size was extremely small ($d = .046$), indicating that sex accounted for only one-twentieth of 1% of the variance in moral reasoning development ($r^2 = .0005$). Walker concluded that males and females are more alike than different in their moral reasoning and that there was not support for Gilligan's claim that Kohlberg's theory penalizes women.

The results of Lawrence's (1979) study also challenge Kohlberg's assumption that moral reasoning is solely guided by conceptions of justice. Lawrence compared the moral reasoning of three extreme groups to determine whether subjects differ in their comprehension and judging of stage-typed DIT issue statements and what are the cognitive processes involved in moral judgment making. The sample consisted of 30 philosophy graduate students (19 males, 11 females), 29 ninth graders (14 male, 15 female), and 16 male seminary students at a conservative, fundamentalist Baptist theological college. The subjects were first administered the DIT. Two weeks following completion of the DIT, each subject received an audiotaped interview in which he or she was requested to "think aloud" while considering 15 of 24 issues contained in two dilemmas used in the DIT: six high-staged, six low-staged, two...
meaningless, and one atypical high staged item. The experimenter used
standard probes to assess cognitive processing. Next, the subjects sorted the
same 15 items on a 5-point Likert scale on two separate dimensions: the ease
or difficulty a subject said he or she had in understanding the item, and the
degree to which a subject said he or she would make use of each item for
decision-making about the dilemma. Finally, the subjects re-wrote the same 15
items to convey the meaning as it was clear to them.

The experimenter coded the subjects' audiotapes on a taxonomy of
different component procedures involved in moral judgment making and moral
criterion propositions. The coding manuals for each were designed through
pilot studies. For the coding of the component procedures, a second rater
coded a sub-sample of 50, yielding an interrater reliability of .78. For the
coding of all moral criterion propositions, interrater reliability of a sub-sample of
53 protocols was .85. In the reproducibility test, the experimenter and another
rater coded each subject's paraphrases of the items according to six coding
classifications: (1) reproduced, (2) not reproduced, (3) verbatim, (4) can't tell,
(5) don't understand, and (6) refused to reproduce. Interrater reliability was .83.

As predicted, the philosophy graduate students had higher levels of moral
reasoning than the ninth graders and seminarians. The philosophy graduate
students had significantly higher P scores on the DIT, $F(2, 72) = 55.43, p < .001$,
which indicates the subject's use of high stage (principled items) in ranking
choices. They also had higher D scores on the DIT, $F(2, 72) = 30.67, p < .001$,
which indicates the importance a subject attaches to high-staged items relative
to the importance he or she attached to low-staged items. Planned comparison
of means were significant ($p < .01$).

To determine whether high level and low level moral thinkers differ in their
comprehension and judging of stage-typed issue-statements, a subsample was
created to provide non-overlapping comparison groups. This subsample of 62
subjects was formed by excluding 7 philosophy students with D scores below
26 and 6 ninth grade students with D scores above 24, but included all of the
16 seminarians. The high D philosophy students better understood the high
stage items in that they successfully reproduced higher proportions of high
stages items (.75) than either the low D ninth graders (.23, p < .01), or
seminarians (.44, p < .05). The high D philosophy graduate students rated
high-staged items as more useful in deciding about the dilemma than either of
the other two groups. Analysis of variance yielded a significant interaction for
subject group x item type, F(6, 177) = 8.996, p < .001 and all planned
comparisons were significant (p < .01).

The seminarians, although similar in age (27.4 vs. 28.5) and years of
formal education to the philosophy graduate students, were more like the ninth
graders in terms of their moral reasoning. The seminarians had significantly
higher mean D scores on the DIT than the ninth graders. However, the ninth
graders had significantly higher mean P scores than the seminarians. The
seminarians seemed to better understand the principled items than the low D
ninth graders in that they made less frequent use of the "Don't Understand"
category when rating the items and successfully reproduced a higher
proportion of high stage items in their paraphrases in comparison to the ninth
graders (.44 vs. .23). There was a strong negative correlation (.71, p < .001)
between the seminarians' understanding of high-staged DIT items and their
use of the item in decision making. Furthermore, of the 17 component
procedures used in moral-judgment making, seminarians used religious criteria
in greater proportion than either the philosophers or ninth graders (p < .01).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Lawrence stated that the seminarians tended to rate high-staged items low when they understood them, and rate them high when they gave the items a religious meaning. Seminarians consistently used religious criteria for rating DIT items whereas the other groups rarely referred to religious beliefs. Lawrence claimed “that the tenets of the seminarians' conservative belief-system preempted cognitive processing” (p. 103). She believes that the seminarians did not view the dilemmas as concerns of social justice but rather interpreted them as religious matters which should be resolved on the basis of religious beliefs that offered prepackaged solutions. Her findings suggest the existence of alternative interpretative systems that can impact moral judgment.

Kohlberg (1975a) viewed moral judgment “as a necessary but not sufficient condition for moral action” (p. 672). Kohlberg recognized that the presence of principled reasoning did not necessarily result in moral behavior. He theorized that possible factors contributing to moral behavior included the individual's motives, emotions, and ego strength, and the situation and its pressures. Kohlberg justified the exclusive focus on moral reasoning in the cognitive developmental approach on several grounds. He stated that research had not identified more influential factors on moral behavior than moral judgment. Furthermore, Kohlberg reasoned the most distinctive moral factor in moral behavior was moral reasoning since behavior cannot be considered moral if the individual did not intend the action to be so and intentions necessarily imply reasoning. Finally, deriving from the postulate that moral development is irreversible, Kohlberg stated that moral reasoning is more stable than moral behavior, implying that society would reap greater benefits in promoting moral reasoning than moral behavior.

Blasi (1980) reviewed empirical literature regarding the relationship
between moral judgment and moral action. Blasi concluded that there is substantial support for the hypothesis that moral action and moral reasoning are statistically related, although empirical support varies according to the nature of the predicted relationship. Support is strongest for the hypotheses that there is a positive relationship between moral stage and resistance to conformity, and that delinquent individuals tend to be at lower stages of moral reasoning than non-delinquents. There is also some evidence of a positive relationship both between moral reasoning and honesty, and moral reasoning and altruism.

Blasi cautioned that these conclusions are qualified in light of the considerable methodological problems within studies and the methodological differences between studies. Several types of dependent measures were used, including Piagetian measures, different versions of Kohlberg's scale, and other instruments derived from either Piaget or Kohlberg's theory. Many of the methodological problems were apparently related to conceptual misunderstandings of Kohlberg's cognitive developmental theory, including employment of research designs incompatible with the cognitive developmental paradigm, inadequate measures of moral action, and treating qualitatively different stages as a quantitative dimension. However, despite these limitations, 57 of the 75 studies revealed at least a moderate relationship between moral judgement and action.

Thoma (1985) reviewed over 30 studies that related scores obtained on the DIT to behavioral measures. The measures of behavior were evenly split between studies using naturally occurring phenomena and those using controlled lab simulations. The findings revealed a consistent pattern of significant positive relationships between DIT scores and moral behavior,
although the strength of the relationship was only moderate (approximately .30). Thoma and Rest (1986) state that the findings of Blasi’s and Thoma’s reviews considered together indicate “a pervasive and consistent association between moral judgment and behavior, but only at a moderate level” (p. 135). Thoma and Rest concluded that variables other than moral reasoning must be determinants of moral behavior.

Rest’s (1986b) Four-Component Model has furthered understanding of the relationship between moral reasoning and moral behavior. Based on a wide purview of morality literature that included non-cognitive developmental approaches, Rest concluded that morality is a multifaceted phenomenon which cannot be sufficiently comprehended by a single variable. Rest postulated that four, distinct psychological processes account for moral behavior. Rest’s model consists of the following components:

1. The person must have been able to make some sort of interpretation of the particular situation in terms of what actions were possible, who (including oneself) would be affected by each course of action, and how the interested parties would regard such efforts on their welfare.

2. The person must have been able to make a judgment about what was morally right (or fair or just or morally good), thus labeling one possible line of action as what a person ought (morally ought) to do in that situation.

3. The person must give priority to moral values above personal values such that a decision is made to intend to do what is morally right.

4. The person must have sufficient perseverance, ego strength, and implementation skills to be able to follow through on his/her intention to behave morally, to withstand fatigue and flagging will, and to overcome obstacles (p. 3).

The Four-Component Model is an analytical framework depicting the
necessary elements for moral behavior to occur. The components are processes serving distinctive functions, interacting and influencing each other in a complicated manner which most likely does not occur in a linear sequence of events. Cognitive developmentalists have primarily focused on moral reasoning, Component 2 of Rest's model.

Rest considered the cognitive developmental approach to studying moral reasoning, by directly assessing people's problem strategies regarding moral dilemmas through interviews or questionnaires, as inapplicable to the study of the other components. The presentation of a dilemma in such a manner precodes and interprets the situation, serving the function of Component 1, moral sensitivity. Furthermore, assessing moral reasoning regarding a hypothetical dilemma does not indicate how the subject would prioritize his or her values (Component 3) or what are the subject's personal qualities to achieve his or her goal (Component 4). Rest suggested that research on moral sensitivity, moral motivation, and moral character is more likely to yield pertinent data using real-life situations, and highlighted the need for the development of measures of these components.

Rest believed that research on moral judgment is decreasingly focused on measurement issues and moving towards its relationship with other aspects of human experience. Rest proposed that the Four-Component Model provides a framework both to better understand and predict moral behavior, and to formulate objectives for moral education programs.

The Four Component Model challenges Kohlberg's assumption that moral decision making is exclusively guided by justice reasoning in suggesting that other interpretive systems influence moral judgment (Thoma, 1985). Thoma devised a procedure referred to as the utilizer score, which purports to
objectively assess the degree to which subjects use justice reasoning. The procedure involves comparing the choice of action selected by the individual on the DIT with the decisions implied in the responses the individual chose as important in his or her decision making. On the DIT, subjects are requested to select from forced-choice courses of behavior. For example, they are asked whether they believe the character in a morally ambiguous dilemma should or should not steal. This is referred to as the action choice.

Thoma's (1985) procedure is referred to as the utilizer statistic because it represents the degree to which the subject utilizes justice reasoning in his or her decision making, a low score suggesting that the subject used an interpretive system other than justice reasoning in his or her decision making. In such cases, the subject's DIT score provides little insight into the individual's stage of moral development.

One of the fundamental assumptions of the utilizer score is that embedded within the DIT item ratings are implied action decisions. Thoma performed a study to assess the degree to which individual DIT items are aligned with particular action choices. Using a five-point scale, ten graduate students familiar with moral judgement research rated the degree to which a DIT item implied an action choice available on the DIT. Interrater agreement was high, with only 19 of the 72 items yielding standard deviations of one or more. This finding suggests that much of the variation in action choice implications is due to differences in the raters' confidence that an item favored the same action choice rather than disagreement regarding which action choice is implied by the item. Next, 969 subjects administered the DIT were divided into three groups by their selected action choices. In 79% of the DIT items, the rates significantly differed as a function of action choice groupings. The correlation
between the difference values in subjects’ scores and the students’ logical implication scores was highly significant (.73, p < .001). This finding corroborates the claim that subject responses to DIT items favor particular action choices.

Thoma used these findings to devise the utilizer score statistic. Application of this method to scores of the 969 subjects revealed that this procedure more effectively predicted actual action choices than the prior global approaches, such as the six-story P score. The method’s ability to predict action choices was normally distributed, indicating it can predict action choices for most of the people some of the time. Thoma et al. reasoned that low correspondence between DIT items and action choices indicates that the individual used concepts other than justice in his or her decision making.

The first major study using U scores addressed whether the relationship between DIT scores and action choice would be stronger if the U-score was incorporated. Using the U score, Thoma, Rest, and Davison (1991) reanalyzed five previous studies relating DIT scores to a variety of moral behaviors, including delinquent behaviors, clinical performance of medical interns, laboratory-based assessments of cooperative behavior, political choices, and attitudes towards the law. The study found that the relationship between moral judgments and actions was stronger when utilizer information was considered. The variance accounted by action choice for DIT P scores doubled when U-scores were included (average value at Step 1 = .09 vs. .20 at Step 3). Furthermore, the results suggested that the U scores were generalized across different types of actions. Thoma et al. concluded that U scores identify subjects for whom the action and judgment relationship is stronger.

Lawrence (1979) has also criticized Kohlberg’s view of moral reasoning as
too narrowly focused on the morally prescriptive aspects of moral judgment making. She proposed that moral reasoning is not a single-factor concept simply conveyed through one's orientation towards justice, but is composed of different levels of cognitive processing. Based on a review of over thirty interviews, Lawrence developed a taxonomy of 17 component procedures of moral judgment-making. She grouped the components into five larger sub-processes which she believed to occur in most moral judgment-making responses. She contended that the ideal moral judgment response would include elements of understanding the stimulus, identifying relevant facts and issues, applying moral and other criteria, and weighting and sorting conflicting factors.

Lawrence investigated the validity of this taxonomy by evaluating the cognitive processes of three different groups in response to two dilemmas on the DIT. The sample consisted of 30 moral philosophy students (19 males, 11 females), 29 ninth-graders (14 male, 15 female), and 16 male seminary students at a conservative, fundamentalist, Baptist theological college. These groups were selected to represent groups that would be polarized on the DIT scale scores. Each subject received an audiotaped interview in which he or she was requested to "think aloud" while considering each item, with the experimenter using standard probes to assess cognitive processing.

Each audiotaped session was both coded for the component procedures of moral-judgment making and moral criterion propositions by two trained raters. The taxonomy was applied to a total of 4,121 separate propositions expressed by 75 subjects across 15 items: six high-staged items, six low-staged items, two meaningless items and one atypical high-staged item. For coding the component procedures, interrater reliability of a sub-sample of 50
verbal protocols was .78. For the coding of all moral criterion propositions, interrater reliability of a sub-sample of 53 protocols was .85.

The results indicate that different dimensions of cognitive processing are involved in responding to moral dilemmas. All subject groups showed at least one instance of using each of the 17 components. The five major components accounted for 52% of the propositions verbalized by the subjects while moral criteria accounted for 25% of the propositions. The subject groups differed in their frequency of use of components. Philosophers used more propositions to identify issues and weigh alternatives, ninth graders used more propositions that emphasized practicalities and story information, and seminarians used more religious criteria.

Volker (1984) devised a procedure for assessing moral sensitivity, Component 1 of Rest's Model, among counselors. The procedure entails evaluating counselors' responses to tape recordings of a counselor-client interactions. In the course of the interaction, the client discloses information about potential danger to a third party. After listening to the tape, the subject tape records his or her answer to 6 probe questions, including asking about the next steps that the counselor would take. The subjects' responses are scored on a global rating scale (1 to 5) on each dilemma according to the degree of awareness, concern, and willingness to act on behalf of the third party.

Volker first utilized his Moral Sensitivity Rating Scale in a study comparing the responses of experienced and novice counselors. The novice counselors were 23 counseling psychology student volunteers (65% female) who had no more than two years counseling experience. Experienced counselors were 21 practicing professionals (52% female) employed in university counseling centers and community counseling agencies. The experienced counselors had
obtained an advanced degree in counseling or a related field and had been practicing counseling/therapy with young adults for a minimum of three years. The subjects were blind to the purpose of the study. Subjects listened privately to two ten-minute tape recordings of a counselor-client interaction and then tape recorded their answers to the probe questions. In one tape, the client disclosed information suggesting sexual abuse of a third party; the other tape portrayed a client who revealed that, as a medical intern, she had been endangering her patients in the hospital due to the distraction of extreme stress in her own life. Subjects were given a DIT to take home and complete within two days. Upon completion of the DIT, the experimenter asked the subject a series of follow-up questions and debriefed the subject.

A second trained rater independently scored 44% of the sample for moral sensitivity, and interrater reliability averaged .86. Four clinicians with extensive experience in professional ethics education or with the ethical dilemmas presented in the two cases were each given typed transcripts of the responses of five subjects. They were requested to rank order the 5 protocols in order from least sensitive to most sensitive. They were given a general definition of "moral sensitivity" but were blind to the specific scoring criteria used to assign moral sensitivity scores. Their rank ordering was compared to Volker’s scoring system, yielding a correlation of .95, thus demonstrating convergent validation for Volker’s measure. Additionally, the correlation of the moral sensitivity scores on the two dilemmas was moderate and positive (.25), suggesting that responses to the cases were measurements of a similar dimension.

Several methods were used to limit cuing the subjects to the focus of the study and to assess the degree to which this was accomplished. The order of the presentation of the two tapes was manipulated to determine cuing effects of
one dilemma on the other and the interaction was not significant. Since it was anticipated that many subjects would be familiar with Kohlberg's theory and the DIT, the DIT was administered last. Prior to debriefing, subjects were asked what they thought was the focus of the study and their familiarity with Kohlberg's theory and the DIT. Only 18% of the subjects correctly guessed that the study focused upon professional ethics and moral sensitivity was not effected by familiarity with Kohlberg's theory or the DIT.

The correlation between moral sensitivity and DIT D scores was consistently near zero. This generally coincides with Bebeau's (1994) findings among dental students that moral sensitivity correlates only moderately with DIT scores (ranging from .2 to .5). Volker cited several plausible explanations for this lack of correlation, including the contention in Rest's Four Component Model that a person's ability to formulate the morally ideal response is not equivalent to a person's ability to recognize that a moral dilemma exists. Moral sensitivity and moral judgment may represent distinct processes.

**Summary**

This section reviewed the cognitive developmental approach to morality, culminating in Kohlberg's theory of moral reasoning. Research regarding the validity of Kohlberg's theory was examined. Gilligan's and Rest's challenges to Kohlberg's justice-based definition of moral reasoning were noted. Research regarding the relationship between moral development and moral behavior was explored. Rest's Four Component model was presented along with research on the validity of the utilizer statistic of the DIT.

*Moral development theory is particularly appropriate to counselor education. Counselors constantly confront moral issues. The primary goal of counseling is the promotion of human growth and development (Gladding,
Counselor education programs can most effectively achieve the aim of client development through not only teaching developmental education but by also promoting the development of its students as well (Kohlberg, 1975b).

**Conceptual Systems Theory**

Conceptual Systems Theory (CST), developed by Harvey, Hunt, and Schroder (1961), is a theory of personality organization that utilizes a cognitive developmental framework. CST attempts to account for individual differences in interpersonal behavior in terms of variation and the functioning and structure of conceptual systems. The conceptual system is defined as "a schema that provides the basis by which the individual relates to the environmental events he experiences" (pp. 244-45). The system is the organizational structure through which a person processes information, or "how" one thinks. Systems have an essential interpersonal component in that they characterize how the person conceptualizes his or her self, others, and the relationship between self and others.

According to CST, systems vary in complexity, ranging from a form in which both self and others are undifferentiated parts to a structure in which self is highly differentiated from others while also integrated into a whole (Hunt, 1971). Various conceptual systems comprise the self-system, or personality, but CST is mainly concerned with those conceptual systems which relate to interpersonal stimuli, particularly conceptual level. Hunt (1975) described conceptual level as:

A person characteristic, indexing both cognitive complexity (differentiation, discrimination, and integration) as well as interpersonal maturity (increasing self-responsibility). A person at a higher conceptual level is more structurally complex, more capable of responsible actions, and,
most important, more capable of adapting to a changing environment than a person at a lower conceptual level (p.218).

Conceptual level is characterized as existing on a "concrete-abstract" continuum. High conceptual level is associated with: "lower stereotypy and greater flexibility in the face of complex and changing problem situation, toward greater creativity, exploration behavior, tolerance of stress, etc." (Harvey & Schroder, 1963). Furthermore, higher conceptual levels are associated with greater self-understanding and empathic awareness of others.

CST is as concerned with individual differences in conceptual level as it is with how such differences develop along with strategies for inducing change (Hunt, 1971). Conceptual development is described as a continuous process which evolves through stages occurring in an invariant order given optimal conditions. The stages vary in level of abstractness and integration. Concrete behavior is assumed to result from low levels of differentiation and integration while abstract behaviors stem from high levels of both. Hunt's current model of conceptual development, modified through considerable research, consists of the following four stages:

- **Stage - 0.0:** Unsocialized persons who resist and avoid external imposition. Ambiguity cannot be tolerated and information is processed in a very simple, concrete manner.

- **Stage - 1.0:** Individuals are more concerned with behaving in a socially acceptable way, and information is processed in dichotomous (right-wrong or good-bad) categories.

- **Stage - 2.0:** Absolutes are questioned and challenged. Individuals are more open to others' ideas, are concerned with others' ideas, are concerned with their own thoughts and feelings,
and are striving for independence. Tolerance of ambiguity and uncertainty increases.

Stage - 3.0: Denoted by an interdependence between one’s self and one’s environment and consists of clear understanding of the self, a selective openness to external imposition, and an avoidance of dependency.

CST accepts Lewin's (1935) formula which states that behavior is a function of the interaction between personality and environment. Hunt (1971) has proposed the Conceptual Level Matching Model, which coordinates the learner's level of conceptual complexity with degree of environmental structure. Although Harvey et al. (1961) proposed three dimensions of the environment producing four different types of environments, Holloway and Wampold (1986) report that within the counseling literature, environmental structure is limited to the degree of dependence or independence permitted in the learning environment.

The Conceptual Level Matching Model predicts differential behavioral outcomes in learning situations given certain student-environment matching conditions (Hunt, 1971). Hunt contends that there is an inverse relationship between CL and degree of environmental structure. This relationship is stated as: "Low CL learners profiting more high structure and high CL learners profiting more low structure, or in some cases, being less affected by variations in structure" (Hunt, 1971). Low CL learners are less able adapt to variation in environmental structure, whereas, high CL learners have greater flexibility in adjusting to either low or high structure.

Hunt recognized two kinds of matching procedures, one which stimulates the learner's CL development and a match that satisfies the learner's
environmental needs (Hunt, 1971). The developmental match is based on the developmental principle that providing a slightly challenging environment compels the individual to adapt by developing new concepts and strategies. A satisfaction match is one in which the person can cope with environmental demands using currently available skills, which is considered the optimal environment for task learning. While teacher education has mostly utilized the challenging match (Miller, 1981), counselor education has focused on the satisfaction match.

Hunt (1971) suggested that the Conceptual Level Matching Model is particularly applicable for the training of educators, including mental health professionals. According to Hunt, the effectiveness of educators is defined as the capacity to establish a variety of environments and to appropriately match the environment to the needs of the individual. In terms of Lewin's BPE paradigm, the educator controls only one factor in this relationship, the environment. The effective educator specifies a desired behavior (B) for a person (P) and then establishes the environment (E) which is most likely to achieve the desired result. This complex activity involves various skills, including the ability to use and appropriately select from differential approaches. Hunt implies that because the role of educator involves such complex behaviors, requiring high levels of conceptual development, the goal of educator training programs must be to enhance the development of its students.

Hunt's theory was initially applied to counselor education in 1974 (Oja, 1980). Sprinthall (1989), as cited by Peace (1992), proposed a model of counselor education, based on an adaptation of Hunt's three-stage sequence of conceptual level of teachers, that identifies counselor characteristics in order.
to specify trainee differences and to determine variations for training counselors.

**STAGE A**

Strong evidence of concrete thinking
Exhibits compliance and expects the same from clients
Is low on self-direction and initiative; needs detailed instructions
Non-verbals are often incongruent
Counsels in a robot fashion
Needs immediate reinforcement
Difficulty in tracking clients. Inaccurate on active listening
Enjoys highly structured activities for self and for clients
Is very uncomfortable with ambiguous assignments-prone to anxiety
Follows a counseling model as if it were “carved in stone”-Doesn’t handle emergencies well
Is reluctant to talk about own inadequacies; low on self-reflection, high on anxiety

**STAGE B**

Separates facts, opinions and theories about counseling
Employs some different models in accord with client differences
Shows some resistance to some models
Shows some evidence of systematic “matching and mismatching”; can vary structure
Is open to innovations and can make some appropriate adaptations; evidence of self-reflection
Shows sensitivity to emotional needs-responds to a variety of client feelings
Enjoys some level of autonomy and self-directed learning as a goal for self
Accurate on active listening with most clients
Appropriate ratio of content/feeling responses
Non-verbals are usually congruent

**STAGE C**
Understands counseling as a process of successive approximations
Non-verbals are congruent
Shows evidence of originality in adapting innovations to the client's needs
Is comfortable in applying all appropriate models
Is most articulate in analyzing his or her own counseling in both content and feeling
Has high tolerance of ambiguity and frustration; can stay on task in spite of major distractions
Does not automatically comply with directions-asks supervisor's reasons
Fosters an intensive exploratory approach with clients when appropriate
Responds appropriately to the emotional needs of all clients
Can move "up" and "down" on the active listening scale
Can "match" and "mismatch" with expert flexibility
Appropriate balance of support and challenge

Khalili and Hood (1983) performed a longitudinal study on Hunt's conceptual level among college students, the only longitudinal study to date that did not involve children or young adolescents. A random sample of 169 first-year students at a large mid-western, public university were administered the Paragraph Completion Method (PCM) the summer prior to their entrance. Thirty-eight students were retested at the end of their first-year. Of the 101 students that were still enrolled in the university four years later, 77 were
The results revealed that conceptual level increased significantly after both one year of college and four years of college. The average growth between entering college and four years later was one-half of a conceptual level stage. The amount of change during the first-year of college, 1/4 stage of a conceptual level stage, was equivalent to that gained between the second and fourth years of college. The pretest scores of both the students who were no longer enrolled at the university four years later and those who chose not to participate at the four-year follow up did not differ significantly from those who were administered the PCM four years after entering the university. Changes in conceptual level were not significantly related to extent of extracurricular activities, type of student residence, undergraduate major, or self-reported commitment to career choice, religion, marriage, and life-style. Students who stated they had made a definite political commitment had significantly higher conceptual level scores on the last follow-up test than those students who did not report a political commitment. A weakness of this study was the relatively low interrater reliability scores, which ranged from .63 to .78.

Holloway and Wampold (1986) conducted a meta-analysis reviewing studies which applied conceptual systems theory to counseling related tasks. The researchers analyzed separately the two primary ways in which CST has been investigated in counseling research. One type, which they referred to as “Type A,” examined the effect that an individual’s conceptual level (CL) had on the performance of a task relevant to the counseling process. “Type B” studies investigated the behavioral performance of counselors, clients, or both of different CLs under counseling or training conditions that had varying levels of environmental structure.
The theoretical hypotheses of the meta-analytic study tested predictions derived from CST. For both Type A and Type B studies, it was hypothesized that higher CL individuals performed better than lower CL individuals on counseling related tasks. Two additional hypotheses were formed for Type B studies, including that individuals in more highly structured environments performed better on counseling related tasks than individuals in less structured environments, and individuals in matched CL and environment conditions performed better than individuals in mismatched CL and environment conditions.

Literature between 1967 and 1983 pertaining to counseling process and the construct of conceptual level as delineated in CST was gathered and classified, with the final sample consisting of 8 Type A studies and 16 Type B studies. Effect sizes for each pair of CL groups were calculated and correlated with CL discrepancy in both Type A and Type B studies. Analysis of Type B studies revealed that the performance of higher CL individuals surpassed that of lower CL individuals in less structured conditions. On the other hand, lower CL individuals actually did better than higher CL individuals in more structured conditions. For Type B studies, the hypothesis that higher CL individuals outperform lower CL individuals was not corroborated since performance was dependent upon the interaction between conceptual level and environmental structure. In contrast, analysis of Type A studies indicated that individuals with higher CL outperformed lower CL individuals, raising a dilemma as to which of the results is representative.

The researchers considered the results of the Type B studies to more credible for several reasons. For Type A studies, the effect size for CL was negatively correlated with ecological validity and quality of design.
Additionally, there were twice as many Type B studies.

The results partially support CST. Hunt's matching model was validated with the corroboration of the hypothesis that subjects in matched conditions perform better than subjects in mismatched conditions. On the other hand, the assertion of CST that "higher is better" regardless of the degree of environmental structure was not supported. The researchers urged caution in interpreting the results, noting among other things the general limitations of the meta-analytic procedure and the lack of a normative scale on which to place environmental structure. They concluded that further inquiry is required.

Summary

This section reviewed the stage and matching model of Hunt's conceptual systems theory. Research regarding the validity of Hunt's constructs was examined. A model modified to counselor training was presented. The lack of research on the application of Hunt's theory to counseling represents an opportunity to contribute to the literature.

Critiques of Piaget's Cognitive Developmental Theory

This section explores critiques of Piaget's cognitive developmental theory. Halford (1989) explores the research literature investigating major propositions of Piaget's theory of cognitive development on which there appears to be a lack of consensus. These include the concept of object permanence, specific concrete operational concepts, such as inclusion, conversation, and transitivity, and certain aspects of formal operations, such as logical and causal inference, hypothesis testing, and proportionality. Brainerd (1978) challenges both the claim that the Piagetian stage model has explanatory power, and that the research literature supports the empirical criteria that Piaget himself outlined as necessary for verification of his theory. Responses to Brainerd from various
theorists and researchers are reviewed. Finally, Broughton (1981) reviews the 'ideology-critique,' which is a critique of cognitive developmental theory from a sociopolitical perspective.

Halford (1989) reviewed research conducted on specific issues significant to Piaget's theory of cognitive development. One of Piaget's main assertions was that the sensorimotor stage involves intelligent organization but that it does not include the ability for symbolic representation. According to Piaget, the ability for object permanence, that is that objects are real and independent of the self, develops gradually during the sensorimotor stage. During this stage, the child's prediction of objects' movements and movements and positions in space eventually become integrated into a stable system. Piaget's saw his experiments on retrieval of vanished objects as a valid assessment of whether an infant identified the constraint between movement and position.

In reviewing the literature on object permanence, Halford concludes that Piaget's theory is generally supported in that research has found that representations of space and objects in space develop throughout infancy. The research supports Piaget's assertion that infants gradually develop a more integrated perspective of space which permits them to make increasingly more sophisticated inferences about objects in space.

One of Piaget's most controversial claims is that the concepts of transitivity, seriation, conservation, and class inclusion are not understood before the accession to concrete operational stage at 7-8 years of age. Bryant and Trabasso (1971) found that 3-4 year-olds understood transitivity (i.e., that if A>B and B>C then A>C). These researchers asserted that children might fail to make transitive inferences because they are unable to remember the premises rather than for lack of logical reasoning. Thus, they trained children to
remember the premises and excluded those who failed to learn the premises. They found that 3-4 year-olds performed significantly better than chance on a transitive inference item, suggesting that preschool children did understand transitivity. However, Harford points out that by excluding the participants who failed to learn the premises during training, which in some experiments was as high as 50%, the researches may have eliminated the children who did not understand transitivity. Also, the researches used order cues to facilitate learning of the premise. In studies which did not use order cues and did not exclude children who failed the learn the premises, preschool children failed the Bryan and Trabasso task (Halford and Kelly, 1984; Kallio, 1982). Halford thus concludes that there is little evidence that transitivity is comprehended before age 5, which is only 2 years earlier than Piaget's theory claimed. Halford, however, finds no evidence that children's failure to understand transitivity is due to the lack of Piaget's groupings, but asserts that it is more likely due to processing demands that surpass young children's capacity.

Several studies have cast doubt on Piaget's claim that the capacity for conservation does not occur before the ages of 7-8. Bryant (1972) argued that in the standard conservation task, children believe that the quantity remains the same but are confused by the appearance of changed quantity following the transformation. Thus, he developed a conservation task in which the posttransformation display was neutral. He found that even 3- and 4-year-olds exhibited conservation. However, Halford and Boyle (1985) reasoned that because Bryant's posttransformation display did not provide clues, which the pretransformation display did, it could have produced a false positive in that children repeated the pretransformation display. Halford and Boyle used neutral pre- and posttransformation displays. They found that 3- and 4- year-
olds did not show any evidence of conservation whereas 5-year-olds did.

Although other studies have claimed to demonstrate conservation in very young children, there are questions about what concept these children actually understand. A number of studies have demonstrated that conservation can be taught (Beilin, 1978; Halford, 1982; Field, 1987). However, the basis by which conservation is learned is not clear, as all training procedure seems effective some of the time, but no procedure reliably produces learning in all participants. The data are consistent with the theory that there is an internal constraint to what is learned, such as would occur if structural factors were present. Halford argues that while these studies show that 3-4-year-old children can learn some form of rule that quantity stays constant after a transformation, the child's learning may be limited to a specific context and thus may not represent an integrated conception of quantity. According to Halford, conservation entails several rules and that not one rule is sufficient to enable the capacity for conservation except in limited circumstances. Halford's conclusion regarding the research on conservation is that while a few studies indicate that children below the age of 5 exhibit conservation, these studies do not provide information about what was learned. Thus, Piaget's theory that children below 5 have difficulty in mastering quantitative concepts required for conservation remains a possibility.

A number of studies have yielded evidence that apparently contradict Piaget's assertion that preoperational children do not comprehend class inclusion. A primary example of such a study is one conducted by Siegel, McCabe, Brand, and Matthews (1978). Siegel measured 3- and 4-year-olds' understanding of inclusion by asking them binary choice questions such as 'Are there more smarties or more candy?' when presented with 3 smarties and
2 jelly beans. Halford (1989) points out that while 4-year-olds performed better on some tasks than others, none of the results were clearly above chance. This raises doubt as to whether the 4-year-olds understood class inclusion or whether they resorted to guessing. Although similar findings from other studies have been cited as contradicting Piaget's contentions, Halford concludes that they do not demonstrate that children under 5-year-olds understand class inclusion.

Furthermore, the findings of other studies have supported Piaget's theory. Hodkin (1987) analyzed the proportion of response made by guessing and by inclusion logic in 4-, 5-, 6-, and 8-year-olds. There was no evidence that 4-year-olds used inclusion logic and it was only used first used 50% of the time by 6-year-olds. Halford and Leitch (1988) found that 3-4 year-olds encountered difficulty with an isomorph of the inclusion task, meaning a task with a similar structure but that did not contain the difficulties associated with the form of questioning often used in assessing inclusion. Their findings suggest that the degree of structural complexity required in class inclusion surpasses the capacities of young children. The researchers' explanation of this finding is that superordinate and subordinate sets entail recognizing sets of relations. Since no set is inherently a subset or a superordinate, recognition of a set as a superordinate involves identifying its relation to subordinates. Halford and Leitch suggest that identifying such relations imposes a processing load that is beyond most 3-4 year-olds. In conclusion, Halford (1978) asserts that the neo-Piagetian contention that class inclusion develops at a median age of 5 remains viable.

Halford (1989) reviews the contentions that research on information integration theory contradict Piaget's theory. Research on information
integration theory has revealed that even preschool children can process multiple dimensions in different types of judgment tasks. However, Halford asserts that much of the research on information integration theory involves physically present stimuli and thus is limited in its implications for assessing reasoning. Halford argues that perceptual processing, based on stimuli physically present, and processing of information that is represented internally must be separated, similar to Piaget's insistence on separating perception and thought. Halford cites research suggesting that perceptual processes often have greater power than reasoning processes. On the other hand, reasoning tends to have more general validity and is more transferable.

Halford's (1989) summary of the conclusions regarding preschool thought is that Piaget's hypothesis that children have difficulty with major concepts such as transitivity, conservation and inclusion remains quite viable. Halford suggests that some of the demonstrations of comprehension in some of the major concepts by children under 5 are due to fallibility of diagnostic techniques. He urges that such demonstrations should be viewed skeptically considering that the mass of evidence reveals failure to understand. The data reviewed by Halford reveal a trend for younger children to comprehend in narrower contexts than older children, which poses a considerable hazard in interpreting results. Halford cites the example of studies indicating that young children demonstrated understanding in nonverbal contexts. However, Hodkin (1987) revealed that this may be attributed to a tendency for young children to guess more on nonverbal tasks since it is difficult for experimenters to capture the meaning of a concept by nonverbal means. If young children's prior performance was based on an incorrect hypothesis, their performance may go from being systematically wrong to haphazard, which can actually lead to
improved performance. According to Halford, this indicates the need to understand the underlying cognitive processes before accepting demonstrations of understanding. Rather, researchers are more likely to investigate why young children perform poorly on a task, but are not likely to attempt to determine what concept children actually understand when they do perform adequately on diagnostic tasks. This tendency, along with the trend not to report negative outcomes and accept positive evidence, increases the possibility that "type I error inevitably leads us to conclude that children understand" (Halford, 1989, p. 342-43).

Halford (1989) reviewed selected findings that contradict Piaget's theory that formal operations are not attained until adolescence. Inhelder and Piaget (1958) contended that systematic testing of formal operations necessitated the INRC group and the 16 binary operations of propositional logic, which do not develop until adolescence. Binary operations refer to the logical relationships among the factors involved in experimentation, which are also called functions. The INRC group is a logical model that describes the rules by which individuals manipulate or transform functions. There are four such rules: identity (I), negation (N), reciprocity (R), and correlativity (C). In assessing formal operational operation reasoning, they used domain-specific knowledge tasks which may have underestimated children's reasoning ability (Carey, 1985).

Research using Levine's (1966) blank-trials technique, which is much less dependent upon world knowledge than Piaget and Inhelder's, has shown that preadolescent children are capable of hypothesis testing (Halford, 1982). However, in Levine's task, the subject is trained in the procedure whereas in Inhelder's and Piaget's tasks, children must create their own hypothesis-testing techniques.
Other studies, such as Gholson (1980), have found that children of kindergarten age and even younger use hypothesis testing. However, some hypothesis-testing strategies children use are more related to concrete than formal operations and were found to be empirically related to performance on concrete operational tasks. Little evidence was found for the capacity for formal operations in middle childhood.

There have been several studies conducted on the development of scientific reasoning which have much relevance to the theory of formal operations. For example, Klhar and Dunbar (1988) investigated undergraduates' ability to identify the nature of hidden process (function) of an automator. The study explored two main aspects of scientific reasoning, the ability to generate hypotheses and design experiments. While the study was based on artificial intelligence models of rule induction rather than formal operations, the methodology was similar to Inhelder and Piaget's (1958) approach in that it permitted exploration of an unknown phenomenon and analysis of participant's protocols. The findings suggest that this type of hypothesis testing is late to develop.

Whereas Piaget's theory of reasoning were based on logical structures of thought, recent research indicates that reasoning may be based on schemas that have a more practical quality. Studies have shown that children have the ability to make simple inferences many years before the development of formal operations, which Piaget considered necessary for logical reasoning. For example, Kuhn, Langer, Kohlberb, and Haan (1977) found that first-to-fourth grade children (6-10-years-old) were successful in forming deductive inferences. The general consensus is that the ability to analyze the logical validity of an argument develops late. Moshman and Franks (1986) used
several types of techniques to assess children's comprehension of validity and consistently found children that did not demonstrate this ability until 11-12 years of age. The conclusion that comprehension of logical validity develops late in childhood is consistent with Piaget's theory that formal operations develops in adolescence.

According to Halford (1989), what is not clear is what actually develops in regards to inference. One ability to that seems to develop is that of evaluating inference validity. Research has shown that 5-7 year-olds can make both inductive and deductive inferences. However, Kuhn and Phelps (1982) found that young children are generally unable to distinguish a valid from an invalid inductive inference, and Moshman and Franks found similar results with deductive inference. Kuhn (1989), in reviewing the evidence on children's scientific reasoning, concluded that they do not comprehend the difference between theory and data. Halford (1989) suggests that young children can make inferences about concrete phenomena because they posses mental models of real-world phenomena, which may be acquired through basic learning mechanisms. What young children seem to lack is a "mental model of the relation between their real-world mental models and the data to which those models relate" (Halford, 1989, p 345). In other words, they do not have models of their mental models. This distinction is similar to the difference between concrete and formal operations. Piaget (1950) claimed that the structures of concrete operations, which are roughly equivalent to real-world phenomena, are incorporated in the formal operations stage into higher-order structures.

Inhelder and Piaget (1958) considered proportional reasoning as a component of formal operations. The balance scale task, which consists of
judging whether a beam will balance with combinations of weights from the fulcrum of each side, is the most widely used technique to assess proportional reasoning. The task requires simultaneously taking into account both weight and distance. Siegler (1976) and Surber and Gzesh (1984) found that 5 year-olds typically consider only one factor while older children and adults used different rules that considered the compensating effects of weight and distance. These results broadly parallel those observed by Inhelder and Piaget.

Halford (1989) concludes that the research on advanced reasoning is similar to that on elementary reasoning. Some abilities, such as the hypothesis testing observed in Levine's blank trials technique, have been found that are not predicted by Piaget's theory. However, this finding does not fully discredit Piaget since there is no evidence that formal operational reasoning is involved in such early hypothesis testing. With tasks that are more likely to necessitate formal operations, the ability appears to develop at about 9-11 years, which is generally consistent with Piaget's theory. It appears that the ability to make inferences develops at least by the age of 5, but the ability to identify logical validity does not appear to occur until adolescence. Research on tasks assessing proportional reasoning also indicated acquisition in the teen years.

Halford suggests that Piaget's claim that children cannot comprehend concepts before the ages specified in his theory requires reexamination.

Halford (1989) concludes that Piaget's theory remains viable in a number of areas. Most of the basic phenomena he observed were confirmed in two volumes of replication studies (Elkind & Flavell, 1969; Sigel & Hooper, 1968). However, the existing controversy concerns the interpretation of these phenomena. There are two main grounds for disagreement. The first one disputes Piaget's structural account as the mechanism responsible for these
phenomena. The other argument is that Piaget's tests have "produced false-negative conceptual diagnoses, underestimating children's understanding" (Halford, 1989, p. 347).

In regards to the first argument, there is no strong body of evidence for the existence of any specific cognitive structures proposed by Piaget. Furthermore, Piaget's structures are consistent with the research that has since been gained about cognition. While the concept of schemas have been supported, the idea that reasoning is predicated by logic conflicts with the work on natural reasoning by Cheng and Holyoak (1985), Johnson-Laird (1983), and Tversky and Kahneman (1973).

Halford asserts that the claim that Piaget's research has yielded false-negative assessment has not been justified in some cases. With regards to class inclusion, transitivity, and recognition of logical validity the contentions have been based on false positives. In other cases, including the object concept, quantification, and hypothesis testing, remarkable abilities have been revealed for children at young ages. However, Halford asserts that while children demonstrate aspects of these concepts, often it is only a partial understanding that is revealed in restricted contexts.

Neo-Piagetian theories represent an attempt to conceptualize cognitive development in a more consistent way than Piaget's formulation. The theories of Case (1985), Halford (1982), Fischer (1980), and several others, can be regarded as attempts to reconceptualize the development documented by Piaget, but in a way that is consistent with more recent data. These theories have the similar objective of explaining the increase in conceptual complexity that takes place with age. They share the belief that "higher-level concepts are formed by integrating lower-level concepts. Thus, development proceeds from
restricted, fragmented concepts that integrate more information into a coherent structure" (Halford, 1989, p.349). Halford recommends that since it appears Piaget's model of cognitive development is an inadequate conceptualization of the causes of development, research efforts should be devoted to testing alternative theories.

Brainerd (1978) asserts that Piaget's Cognitive Developmental Theory merely describes age-related changes in behavior and thus is descriptive rather than an explanatory construct. According to Brainerd, explanatory uses of stage construct in theories of behavioral development must meet the following three criteria: (1) specify target behaviors that undergo age change, (2) propose antecedent variables held as responsible for such changes, and (3) identify procedures that can independently measure behavioral changes and the antecedent variables. Brainerd asserts that it is the last criteria, identifying procedures that can independently measure behavioral changes and antecedent variables, that is essential for avoiding circularity and the main criteria which Piaget's Cognitive Developmental Theory has failed to meet.

Furthermore, Brainerd proposes objections to the program of criteria that Piaget asserted could verify his stage theory. The criteria composing Piaget's program include invariant sequence, cognitive structure, integration, consolidation, and equilibration. Brainerd argues that three of these criteria, invariant sequence, integration, and consolidation, are measurement sequences, meaning that these criteria do not represent qualitatively different skills but are late-appearing behaviors consisting of some earlier-appearing behavior plus additional things. Cognitive developmentalists commonly believe that a culturally universal sequence in behavioral development suggests an underlying sequence of maturational events. However, Brainerd
points out that such an universal finding that learning how to multiply integers precedes learning how to differentiate polynomials not because such skills are under maturational control but because their acquisition sequence is culturally universal. In essence, this phenomenon is the result of a measurement sequence and implies that the invariant sequence criterion is not prima facie evidence that stages exist. Brainerd criticizes the cognitive structure criterion on the grounds that it is merely a behavioral description and that tasks are often not unique to a stage. He cites evidence in which classes of problems solved at an earlier stage share the structure of a later stage. Finally, Brainerd asserts that the data do not support the empirical consequences of the equilibration criterion. The concept that cognitive development involves achieving and then losing successive equilibrium levels implies that new acquisitions should occur in spurts and that behaviors related to a given Piagetian stage would emerge rapidly at the beginning of the nominal age for the stage. However, research on development of Piagetian conceptual skills suggests that such skills do not appear abruptly but occur gradually throughout a stage's age range.

Rosenthal (1978) suggests that in several ways the stage concept may obscure rather than inform. The use of descriptive stages has come to mean a sudden or discontinuous threshold in which in the prior stage, a variety of tasks could not be understood, but afterward, a broad group of tasks is comprehended completely. However, the empirical data suggests that behavioral acquisition does not occur in such an all or none, great leap fashion. To illustrate Brainerd's point that a continual sequence in acquiring successive skills does not necessarily support maturational views, Rosenthal cites the example of a composer. The individual intent on becoming a composer first learns to listen to music, then to read music, and then to compose symphonies.
These serially-dependent chains of skills are progressive but do not require maturation or a stage construct to account for their pattern of attainment.

Rosenthal makes the following recommendations to increase the explanatory values of Piaget's theory:

1) better specifying the expected relationships among variables in a form that showed more clear cut tests
2) identifying what empirical evidence would be required to refute which key premises
3) if uncertainties about potential choice-points in the theory were acknowledged.

Berndt (1978) challenged the arguments on which Brainerd based his conclusion that Piaget's stages only describe age-related changes in behavior and that the theory is not an explanatory construct. First, Berndt argues that Brainerd's definition of an explanatory construct, as an effect in terms of its causes, does not recognize the existence of other forms of explanations. Berndt asserts that Piaget's stages represent a different type of explanation, which accounts for a specific example by referring to a general law or principle. Berndt raised questions about Brainerd's claim that the universality of behavioral sequences merely represent measurement sequences since it would be logically impossible to have the later stage precede the earlier stage. Berndt points out that this argument does not account for the possibility that behaviors assigned to earlier and later stages could be acquired at the same time. Also, Berndt claims that it is impossible to delineate a measurement sequence based on the characteristics of the task since it represents a hypothesis about the order of task achievement without empirical substantiation. Berndt refers in particular to Brainerd's example of the universal
finding that learning addition precedes multiplication. While such an order appears completely logical to adults, a child’s way of relating different problems may substantially differ. In terms of Brainerd’s criticism of the cognitive structure criterion, Berndt accepts that the structures may be simply task descriptions but questions the empirical support for Brainerd’s assertion that structures may not be unique to the stages for which they are proposed. Berndt challenges Brainerd’s example that elementary school children can solve logical problems that Piaget claimed required formal operations on the grounds that the stage of concrete operations is adequate for addressing certain problems of logic. However, Berndt raises a major problem of the stage construct not identified by Brainerd, which is that empirical research has demonstrated that various behaviors posited to belong to a particular stage are acquired at very different times.

Epstein (1978) asserts that Brainerd failed to review studies that contradict his conclusion that there is little evidence for the existence of Piagetian stages. Webb (1974), investigated the relationship between formal operations and mental age and chronological age, studying the appearance of children ages six to eleven who had IQs of 160, with mental ages ranging from ten to eighteen. He found that no child exhibited formal operations until close to the age of eleven, which suggests a strong relationship between age and onset of formal operations. Isaac & O’Connor (1975) found multimodal distributions of performance on tests of problem-solving and intelligence which correspond to the major Piagetian stages. Epstein (1974) identified brain growth stages which occur in spurts. Finally, Epstein asserted that behaviors that appear earlier or later than the standard age for reasons that do not contradict Piaget’s stage theory. Behaviors may be elicited at an age earlier than normal since it is
the development of a regulation system which is mostly responsible for behavior. Dasen's (1972) findings that in many countries less than half the adult population exhibits formal operations and some adults even fail to show concrete operations indicates that behaviors can appear later than normal.

Fischer (1978) suggests Brainerd refutes Piaget's stage theory for the wrong reasons. Fischer asserts that there are several types of causal theories and that Piaget's Cognitive Developmental Theory is a structural theory, which "...aims to specify a set of behavioral structures for analyzing cognitive performance, together with a set of transformation rules for specifying how one type of structure develops or transforms into another" (p. 186). According to Fischer, the causal theory criterion which Brainerd applied, the identification of antecedent variables, is inappropriate, since a more valid test of a structural theory is if it predicts developmental sequences and synchronies. Fischer cites many research studies that indicate Piaget's predictions of sequences are often wrong (Kofsky, 1966; Fischer, 1977), and his predictions of synchronies are usually wrong (Brainerd, 1978; Fischer, 1977).

Fischer argues that the data on cognitive development do no support the traditional view of stage as an abrupt, discontinuous change in performance at a particular age but there that is evidence to suggest the presence of some type of stage concept. First, development seems to lead to qualitative changes in behavior and the acquisition of new types of skills (Bertenthal & Fischer, 1978; Watson & Fischer, 1977). Second, children seem to exhibit a ceiling effect to their performance at certain ages. Finally, evidence indicates that infants seem to exhibit periods of transition and periods of consolidation in populations of skills (Uzgiris, 1976; Fischer, 1977).

Gibson (1978) indicates that research on brain development supports
aspects of both Piaget's theory and Brainerd's criticisms. Gibson suggests that the most probable biological antecedent of Piaget's cognitive stages would be the level of maturation of the brain, particularly of the neocortex. The maturation patterns of the cortex are gradual and development proceeds gradually from infancy until culmination at puberty or later. To the degree that cognitive abilities are influenced by cortical function, cognitive development should occur in gradual increases of abilities present in basic form in infancy. The data of cortical development thus supports both Piaget's view that each stage develops from and integrates behaviors of preceding stages through a process of intermediary points, and Brainerd's assertion of development as a continuous, gradual process. The data do not support Piaget's concept of stages as distinctly divided in terms of cortically determined cognitive capacities nor Bernard's contention that behaviors which develop in spurts are more likely to be influenced by maturation than behaviors that show a gradual development pattern.

According to Karmiloff-Smith (1978), Brainerd failed to realize that Piaget's primary aim was to identify the equilibration mechanisms that generate new behavioral patterns and that the stage concept was "used by Piaget as a heuristic for seeking far from obvious developmental links across widely differing conceptual domains" (p.189). Thus, Piaget' stage distinctions were intended to identify intermediate, oscillatory levels and are secondary to his theory.

Karmiloff-Smith (1978) offers a counter argument to Brainerd's claim that the presence of behaviors at stages earlier than posited is evidence against Piaget's theory. Karmiloff-Smith argues that underlying apparently analogous behavior are often deep qualitative differences. For example, while many
seven year-olds can cope with propositional logic, such as "if X then Y," closer analysis reveals that the seven-year old is dealing with a concretizable statement, such as 'each time X, then most likely Y," generating a correct but only "plausible" conclusion. On the other hand, the twelve-year old, is dealing with a proposition concerning a hypothetical world leading to a "valid" conclusion.

Karmiloff-Smith (1978) suggests an alternative utilization of the stage concept. She claims that for the stage concept to have heuristic value, stages must be shown to be psychologically functional for the child. In other words, researchers must shift the focus from conservation-attainment to the purpose of conversation-seeking. She suggests that the psychological function of nonconservation behavior can be viewed as resulting from the child's attempt to acquire predictive control of the environment. Consolidating the procedures of a stage may allow the child to simplify and unify an overwhelming amount of stimuli.

Kurtines (1978) believes that Brainerd's criteria for evaluating the explanatory power of Piaget's stage theory are restrictive. Kurtines suggests that Brainerd's requirement that measurement procedures be specified is a methodological rather than a theoretical problem, and that there appears to be no conceptual or historical justification for making it mandatory. Kurtines asserts that a more powerful criticism of Piaget's stage model is that it lacks explanatory power because it does not identify possible explanatory variables. According to Kurtines, the only plausible explanatory variable contained in Piaget's theory are the successive stages of equilibrium and the research literature on the existence of such successive stages is inconclusive. Kurtines also believes that Brainerd's emphasis on the distinction between explanatory
and descriptive stages ignores their interaction in the process of theory
development. Rather than exclusively explanatory or descriptive, theories are
both. Kurtines asserts that Piaget's theory has immense value in that in the
process of hypothesizing about possible explanatory variables, it has
generated much descriptive data. This data can "provide a strong empirical
foundation for further theoretical speculation regarding the mechanisms or
variables responsible for developmental changes" (p.193).

Olson (1978) argues that Brainerd's criticisms of Piaget's cognitive
developmental theory are limited because Brainerd employs a view of scientific
explanation based on the physical sciences, that of the empiricist-positivist
view, which is inadequate for understanding complex, behavioral phenomena.
Brainerd seems to accept the classical distinction between description and
explanation which is that "all explanation...consist of causal relations between
antecedent and consequent-events between independent and dependent
variables" (p.197). Olson suggests that the empiricist perspective is inadequate
for evaluation of Piaget's theory since it based on a different paradigm, that of
structuralism. Piaget saw structuralism as a "mode of inquiry, and the theory
construction is characterized by the idea of wholeness (the whole gives
meaning to the parts), transformations (adding is the inverse of subtracting),
and self-regulation (an autonomous system)" (p.198). The point of structuralism
is to expand our conceptualizations to incorporate the functional systems
through which we operate rather than developing explanations only in terms of
causal relations. The assumption is that carefully sampled observations are
adequate to build and validate a comprehensive model of a set of processes.
"The elaboration of the elements and their transformation rules, organized into
a coherent system, would serve as an explanation of the whole range of
performances generated or managed by that system" (p.198). For Olson, Brainerd's requirement that an explanatory construct have predictive validity can only be applied to minute aspects of human behavior and thus does not promote understanding.

Parker (1978) concurs with Brainerd that the universal sequence of acquisition or behaviors does not infer the development of novel abilities. However, Parker argues that universal acquisition of behaviors and universal age similarities in acquisition does imply such maturation and thus satisfies Brainerd's criterion of an explanatory criterion. Parker cites studies conducted with North American children of several different cultures and Tanzanian children (Nyiti, 1976) which revealed universal acquisitions, age norms, and sequences of acquisition through the onset of formal operations. If behavioral acquisitions were mere measurement sequences, they would be expected to occur in children of all ages with appropriate training.

Parker (1978) also questions the basis of Brainerd's conclusion concerning the lack of evidence of existence of equilibration on two grounds. First, Parker suggests that the data Brainerd cites revealing a pattern of gradual appearance of new acquisitions are inadequate because they are mostly cross-sectional and thus conceal the rate of individual development by averaging the rate of all subjects. Furthermore, there remains questions as to whether the equilibration model would suggest sudden acquisitions, since maturation rate would be influenced by different neurological factors and their interrelations.

Scandura (1978) criticizes Brainerd's main argument that Piaget's stages do not have explanatory value since they are operationally circular. Scandura asserts that Brainerd's measurement sequences are based on the faulty assumption that any particular class of tasks are solved on an unique basis.
Rather, there are numerous ways by which a class of tasks may be solved. Scandura asserts that Brainerd does not understand the concept of cognitive structure and that this misunderstanding is reflected in his claim that cognitive structures are "problem classes with the representations of later stages are solved during earlier stages" (p.176). Once again, Scandura argues that "problem classes associated with later stages do have unique bases for solution" (p.202). A child may learn to apply a rule to solve a problem but has not necessarily acquired a new structure. This reveals a general characteristic of Piagetian structures, which is that they are more related to the "construction and the choice of solution rules than to solution rules themselves (or their application)" (p.202). However, Piaget has not operationalized structure and thus it cannot be validated.

Siegler (1978) concurs with Brainerd on several points; that a consistent developmental sequence may indicate a measurement rather than an invariant sequence, that structures often have little direct association to the behaviors they are claimed to explain, and that Piaget lacks independent assessment procedures for his explanatory constructs. However, Siegler argues that Piaget's approach continues to be the dominant approach for several reasons. First, Piaget's empirical descriptions reveal strong reliability. Siegler attributes this strong reliability to Piaget's discovery of a very basic aspect of children, which is supported by the fact that children's problem-solving approaches appear approximately at the same ages. Furthermore, Siegler asserts that, contrary to Brainerd's claim, there have been several studies that have revealed that it is possible to independently assess explanatory standards for constructs similar to Piaget's.

The previously reviewed critiques and defenses of cognitive
developmental theory have been based on psychological theory. Cognitive developmental theory has also been criticized from a sociopolitical perspective. According to Broughton (1981), the most comprehensive critical position to Piaget outside the field of psychology is based on Marxist theory, and is commonly referred to as the ideology-critique.

The primary argument of the ideology-critique is that due to its "emphasis on suprahistorical totalities, structuralism in developmental psychology has failed to acknowledge the sociohistorical nature of cognition" (p.382). Structuralism examines the systems of representations that organize the different levels of social life. According to the ideology-critique, structuralism does not recognize existence extrinsic to the structure itself which has the effect of eliminating the historical and subjective dimensions in psychology. Broughton cites the example of the field of social cognition, which, heavily influenced by Piagetian cognitive development, construes concrete social realities as concepts. These concepts are seen as lacking form and they are only considered "as 'content' with the forms of the subject's cognitive structures" (p.383). Such a position denies the realist claim that cognitive structures correspond to structures of reality and disregards the interaction between development and history.

Broughton argues that since cognitive developmental theories do not engage in a theoretical analysis of society, they are thus organized by implicit criteria. The claim of the ideology-critique is that, lacking such explicit criteria, the major assumptions of cognitive developmental theory are guided by an implicit ideology of common sense. Such ideology is credited for contributing the assumption that stages are natural givens.

Proponents of the ideology-critique argue that developmental
psychologies, including Piaget's and Kohlberg's, in denying the influence of history and society's structure, are unduly guided by liberal ideology, and represent a 'false consciousness.' Broughton claims that these proponents of the ideology-critique are heavily influenced by Marx's theory of ideology. In Marx's theory, what defines ideology is a 'false consciousness,' which develops from the process of capitalist production while simultaneously misrepresenting the social reality. Ideology is perceived "as part of a social 'superstructure', an epiphenomenal reflection of the underlying material 'base' of existence" (p.385). The ruling class defines superstructural ideology through its control of education, religion, and the media, due to its hegemony of production and material wealth. This ideology obscures exploitation of the working class, prevents consciousness of such exploitation, creates justified illusions about the ruling class, represents its interests as common to all individuals, and denies the possibility of alternatives to the established power structure.

Broughton cites the work of Buck-Morss (1979) as being the most comprehensive of the ideology-critiques. Buck-Morss asserts that the concept of abstract cognition is particular to the worldview of Western industrial capitalism. "With the advent of wage labor, production as well as exchange acquired abstract value, and the purely formal language of mathematics became the expression of the social relations of production as well as those of the market-place" (pp. 2-3). Moreover, "Kantian dualism, the separation of mental operations from the perceptual objects which provided the content of thought, was the cognitive counterpart to the alienation of workers from the object of their production" (Buck-Morss, 1975, p. 39). She asserts that the process of abstract exchange appears in the idea of 'reciprocity,' also found in Piaget's theory. She sees the emergence of the formal stage not as due to
inadequacies of concrete operations, but as the result of "long-term transformations of western modes and relations of production" (Broughton, 1981, p. 386), in which people are indoctrinated as they progress through the socializing institutions of society and ideologies incorporated into those social structures.

In summary, the ideology-critique sees Piagetian developmental theory as "a form of ideological legitimization which supports the current organization and political stratification of society, and rationalizes the extant socialization processes reproducing the present social order, by showing them to be accurate reflections of 'natural', quasi-biological sequences of individual growth" (Broughton, 1981, p. 387). Accordingly, both the sequences and structures of theory lack objectivity and are merely conventional meaning systems. Even the concept of 'development' is seen as rooted in the nineteenth century ideology of progress.

Broughton (1981) believes that the ideology critics of the 1970s' have succeeded in emphasizing the importance of both the sociological framework of psychological knowledge and relationship between developmental theory and history. However, he identifies a number of problems with the ideology-critique. For instance, the critique has not demonstrated evidence for the existence of such homologies, or evidence that they do not merely represent superficial similarities between the theory of ideology of the theory of cognition.

According to Broughton, some ideology critics seem to suggest that the ideology-critique is itself a type of structuralism, consisting of a deeper metastructural level of analysis. Thus, in this conceptualization, cognitive stage theories became a part of the ideology-critique, representing "content within the dynamic totality of liberal ideology" (p. 390). However, Broughton argues that
such an approach would mean that the ideology-critique would be reduced to a superstructure, which like developmental theory, would not be able to perceive its object, the liberal psychology code, as a moment of historical transformation.

Broughton states that in questioning the structure of consciousness, the ideology-critique denies the possibility that developmental theories contain any truths. The ideology-critique asserts that the ideology of the developmental psychologist is a form of rational philosophy which is confined to a particular sociopolitical history and time. Thus, the total structure of their consciousness is seen as false, derived from the fact that self-consciousness is suppressed, preventing awareness of their misguidance. The problem with this critique of ideology is that it suggests an intrinsic notion of truth which is divorced from history, which "eliminates from it man's active participation in it and transformation of it" (p.393). This position implies the existence of objectivity since to suggest that consciousness is false requires that one can establish criteria for true consciousness.

Broughton (1981) asserts that understanding of 'truth' must incorporate the concept that it should reflect the social reality of the particular period. Also, a theory must explicate how to obtain valid knowledge. Broughton cites Kohlberg as a developmental psychologist who has made such a commitment, having evaluated and revised his theory based on applied research in working to restructuring prison and school communities.

Broughton argues that the challenge to psychologists is to identify the truthful aspects of structural stage theories. He sees the primary strength of cognitive developmental psychology as being a normative model of rationality, which espouses a 'true consciousness' and indicates how to validate knowledge. Because it is normative, developmental structuralism can identify
cross-cultural and cross-universals. While the ideology-critique identifies numerous problems with developmental theory, it does not render it completely false. Broughton fears that a failure among proponents and critics of developmental psychology could possibly lead a disastrous return to behaviorism and positivism. According to Broughton, the primary weakness of Piaget's theory is its inability to deal with phenomena that are necessary for a theory of knowledge and its development, including perception, cognition, action, consciousness, subjectivity, sociality, and historicity. Broughton asserts that the difficulty Piaget has in addressing such phenomena stems from "dependence upon both biologistic and scientific understandings of knowledge, and his increasingly cybernetic approach to structure, function, and their changes" (p.405).

Summary

This section explored critiques of Piaget's cognitive developmental theory. Halford (1989), based on his review of 25 years of research investigating Piagetian assertions, concluded that some of Piaget's claims have been refuted while many remain viable. Halford suggests that neo-Piagetian theories hold promise as more adequate conceptualizations for causes of development. Brainerd (1978) asserts that Piaget's theory simply describes age-related changes and thus cannot be considered an explanatory construct. Various responses were cited opposing and supporting Brainerd's assertions, which suggests that there is a lack of consensus regarding Piaget's theory. Finally, in summarizing the arguments of the sociopolitical ideology-critique of Piaget's theory, Broughton (1981) suggests that the theory fails to consider that notions of thought reflect the social reality of the particular period and thus may serve to legitimate the status quo. Although these arguments have not been specifically
leveled against Hunt's conceptual complexity theory and Kohlberg's theory of moral reasoning, these theories utilize the cognitive developmental framework and thus share similar assumptions with Piaget's theory.

**Self-Actualization Theory**

Abraham Maslow (1968) theory of self-actualization derives from his view of human needs and motivation. Maslow claimed that people are motivated by varying needs which differ in the degree they permit the expression of their inner cores. The needs form a sequential hierarchy in which each lower need must be satisfied before addressing the next. The higher level needs are dominated by the quest for self-actualization. Self-actualized persons recognize their intrinsic conscience and permit it to guide them to fulfillment of their unique potentials. As Maslow (1968) stated, "authentic selfhood can be defined in part as being able to hear these impulse voices within oneself, i.e., to know what one really wants or doesn't want, what one is fit for and what one is not fit for, etc." (p. 191). Maslow's conception of self-actualization is best captured by his following description:

We have, all of us, an impulse toward actualizing more of our potentialities, toward self-actualization, or full humanness of human fulfillment. This is a push toward the establishment of the fully evolved and authentic self...to be the best, the very best your are capable of becoming (p. 8).

Maslow portrayed the hierarchy of needs as a pyramid. At the base of the pyramid, Maslow placed basic physiological and survival needs. Once these are satisfied, the individual next focuses upon needs for love and belongingness, then self-esteem and recognition. Finally, the highest need is for the "freedom for the full development of one's talents and capacities,
actualization of the self” (p. 200). The higher level needs and the individual’s attempts to satisfy them only occur once all the lower needs in the hierarchy have been reasonably fulfilled. Failure to meet the basic needs results in physical or mental illness, while neurosis is perceived as lack of growth.

Growth persists throughout life and involves both advantages and disadvantages. It often coincides with brief moments of ecstasy, termed peak experiences, in which the individual obtains a glimpse of self-actualization. However, growth is painful and anxiety provoking as the individual must relinquish a comfortable way of being for an unfamiliar one which requires more effort and responsibility. Growth demands courage and commitment on the part of the individual and encouragement from the environment. The family and the community foster growth by respecting individuals’ inherent capacity for growth. The optimal environment is one in which individuals are free to decide their course in life and they are given the capacity to directly gratify their own needs rather than having them provided for by others.

Maslow (1968) criticized the definition of human health as adjustment or lack of symptoms, proposed by behaviorism and psychoanalysis, as too limiting. He believed their definition stemmed from their narrow focus on clinical populations. In contrast, Maslow arrived at his conception of healthy functioning by studying historical and contemporary figures he considered to have reached high levels of achievement. Maslow concluded that the distinguishing features of higher-functioning individuals included the following: (1) They are realistically oriented; (2) They accept themselves, others, and the natural world; (3) They are spontaneous; (4) They are effective problem solvers, focusing on those amenable to solution; (5) They are detached, separating themselves from immediate situations and casual relationships; (6) They are
autonomous and independent; (7) Their appreciation of people and things is not stereotyped but authentic; (8) Most report deep mystical or spiritual experiences in which they feel wonder and awe at the universe; (9) They have a basic feeling of caring and belonging to humanity; (10) They have intimate relationships with select people; (11) They are tolerant of diverse groups; (12) They do not confuse means with ends; (13) Their sense of humor is existential rather than hostile; (14) They are creative, original, and divergent in their thinking; (15) They do not blindly follow conventional norms.

Although the study of self-actualization has not received widespread acceptance in modern psychology, the introduction of the concept has been responsible for a number of accomplishments. The concept of self-actualization postulates a universal standard of health which challenges the definition of health as adjustment to society's conventions. It represents a holistic framework for understanding humanity, asserting that people are more than driven by conflict between inner drives or solely determined by their environment. Finally, it established the foundation for the rise of a third force in psychology: humanistic psychology (Welch, Tate, & Medeiros, 1987).

Foulds (1969a) investigated the relationship between self-actualization and the ability of counselors in training to demonstrate empathic understanding, positive regard, and genuineness within a counseling session. The sample consisted of 30 counselor education students enrolled in a beginning supervised practicum course. The subjects completed the Personal Orientation Inventory (POI), a leading measure of self-actualization developed by Shostrom (1974), five weeks prior to the end of the course, and submitted a tape-recorded session conducted towards the end of the practicum which they felt represented one of their more effective sessions. Six experienced
counselors were trained in the use of three instruments developed by Carkhuff: Empathic Understanding in Interpersonal Processes, Respect or Positive Regard in Interpersonal Processes, and Facilitative Genuineness in Interpersonal Processes. Three 3 minute samples of each taped session were randomly selected and rated by two judges. Interrater reliability for the Empathic scale was .57, .48 for Positive Regard scale, and .72 for the Genuineness scale.

The findings suggest that ability to communicate empathy and genuineness is related to the counselor's degree of self-actualization. The ability to communicate empathy was significantly related to 6 of the 12 scales (p < .05) and the ability to communicate genuineness was significantly related to 10 of the 12 of the POI scales (p < .05). However, the ability to communicate positive regard was not significantly related to any of the POI scales. Foulds (1969b), partially as a consequence of this study's findings, suggested that the POI should be used as a "...method of assessing progress in personal development of students of the helping professions and/or to identify those who may need special individual attention and/or 'Growth Group' experiences" (p.91).

However, there are several major weaknesses of the study conducted by Foulds (1969a). For one, interrater reliability was low, particularly in comparison to the much higher interrater reliability found immediately following the training of the judges. Also, it is not clear whether the judges were naive to the experimental procedure, raising the possibility that their ratings may have been prejudiced in terms of their sense of the counselors' self-actualization level. Additionally, the correlations was generally small. The mean correlation of the 16 significant differences found between the POI scales and the three
facilitate conditions was 0.37, which accounted for only 13.7% of the variance.

Winborn and Rowe (1972) conducted an investigation for the purposes of replicating Fould's (1969a) study. The researchers closely followed Fould's methodology, the only major methodological difference being that whereas Fould's study involved 30 subjects, their investigation had 50 subjects. The subjects included 50 of the 53 candidates for the master's program in counselor education who were enrolled in a beginning counseling practicum during the summer term of 1970. The subjects ranged in age from 22 to 65 with a mean age of 29 years, and half of the subjects were male.

The interrater reliabilities were: .63 (Empathy); .48 (Regard); and .55 (Genuineness). These reliabilities scores were similar to those found in Fould's study, which were: .57; .48.; and .72.

Whereas Foulds found a total of 24 significant relationships among POI scales and empathic understanding, facilitative genuineness, and total facilitative conditions, Winborn and Rowe (1972) only found one significant relationships despite having a larger sample. Winborn and Rowe summed scores of Time Competence and Inner-Direction based on Fould's claim that these scales, which utilize all 150 questions of the POI, provide the most adequate assessment of self-actualization. A 0.00 correlation was found between the summed scores of Time Competence and Inner-Direction and total facilitative conditions. Winborn and Rowe conclude that the results indicate that "POI scores will not predict facilitative conditions nor will ratings on the scales predict self-actualization" (p. 28). They assert that the findings raise doubts about Fould’s assertion that there is a direct relationship between counselor self-actualization and ability to establish facilitative conditions.

Selfridge and Vander Kolk (1976) investigated the relationship between
self-actualization and a counselor's ability to communicate empathy, positive regard, genuineness, and trust. The sample consisted of 33 secondary school counselors enrolled in an inservice workshop. The subjects' counseling experience ranged from 1 to 13 years with a mean of 6 years. The subjects were administered both the POI and a modified version of Carkhuff's (1969) Tape Excerpt Response Procedure. This procedure involved having participants respond in writing to eight audiotaped excerpts of client statements. Using Carkhuff's scale of measurement, trained judges rated the responses for communication and discrimination of empathy. Interrater reliability was .70. Each participant designated six students they had developed a long-term counseling relationship during the previous quarter. These 198 students were administered anonymously the Relationship Inventory (Barrett-Lennard, 1962), which measures client perception of counseling functioning, within a week of the participants' completion of the POI.

The results indicated that the ability of counselors to communicate the core facilitative conditions as perceived by both clients and trained raters was positively related to self-actualization. The correlation coefficients between the POI scales and the Relationship Inventory, and the POI and ratings yielded by the Tape Excerpt Response Procedure were positive, ranging from .46 to .92. Moreover, most of the relationships appeared to be substantial, with 82% of the correlations above .70. The sampling method used for the Relationship Inventory, participant designation of clients, represents a considerable threat to generalizability.

Ritter (1984) conducted a study investigating what training methods most contribute to personality change, and the relationship between trainee personality and counseling effectiveness. The participants consisted of 89
master's degree students in counseling at a small western state college. The students were enrolled in 4 sections of a systematic skills training class and 3 sections of a group counseling class. The skills-training classes met for 2.5 hours once a week for 10 weeks, for a total of 25 hours. Two of the sections used the skills-training model. The other two sections spent half the class using the skills-training model and spent the other half of the time in an unstructured encounter group. Three randomly selected section sections of a group counseling course, comprised of students who had not yet taken the skills-training course, formed a comparison group. The course used an unstructured encounter group format and met twice a week for 10 weeks, for a total of 40 hours. The same trainer facilitated each of the skills-training and group counseling classes.

The students were administered the POI at the start and conclusion of the experiment. The measurement of counseling effectiveness used was Carkhuff's (1969) 5-point rating scale on the global stages for the Facilitative and Initiative dimensions. During the mid-term and final examinations, the students were paired randomly; one serving as counselor and the other as client. Two raters observed each session. Interrater reliability between raters for the mid-term examination was .81 for the Facilitative dimension and .83 for the Initiative dimension.

Two-way mixed-design repeated measures ANOVAs were conducted. There were no significant main effects for Condition on any of the POI scales. Significant main effects for Time were found on 6 of the POI scales. There was significant interactions for the Condition by Time variable for 4 of the POI scales. The skills-training only condition and the group only condition gained significantly on 2 scales each, while the combination skills-training/group
condition did not increase on any these scales. Ritter (1984) concluded that "Both the group and skills-training experiences seemed to affect positively those personality variables that the POI measures" (p. 83). Ritter found no correlation between the POI scales and Carkhuff's (1969) ratings.

Whitson and Olczak (1991a) reviewed the research literature regarding the POI's efficacy for screening and evaluating counselors, social workers, and teachers. They concluded that the use of the POI for such purposes lacks empirical basis.

Deming (1980) investigated the relationship between self-actualization and supervision effectiveness. Forty-five master's counseling students and 17 doctoral students at a large eastern university were administered the POI. To maximize differences between groups at low and high levels of self-actualization, the experimental samples were comprised of the top and bottom quarters of the POI, or 20 counselors, 5 in each of four treatments groups, 8 supervisors and a control group of 5 students. Counselors ranged in age from 21 to 50 with a mean of 26, while supervisors ranged in age from 27 to 41 with a mean of 31. The supervisors had similar levels of experience in conducting supervision; all had completed or were enrolled in a supervision seminar and had at least one practicum in supervision.

The practicum consisted of one day per week of individual counseling during a semester in a college, school, or rehabilitation agency. Each treatment group received weekly supervision sessions during which the focus was on counseling skills and problems experienced by the counselors. The theoretical approaches to counseling and supervision varied.

Multivariate repeated-measures ANOVAs revealed that there was a significant increase in the self-actualization of the counselors, but that
significant differences in change scores were not found to be attributed to treatment. Not only was the increase in self-actualization of the counselors found to be unrelated to the self-actualization of their supervisor, but the control group, which did not participate in the practicum, also showed a significant increase in self-actualization. Deming (1980) asserts that the findings do not “support the premise that the practicum experience or the supervisor were catalysts for such growth” (p. 215).

Deming (1980) identifies several hypotheses that might explain the inconclusive results. Regression effects were likely to have occurred due to the selection of the top and bottom scorers on the POI. The small number in the final sample limited power. Possible confounds include informal peer supervision among the counseling students and the fact the supervisors were themselves supervised by departmental faculty which could have affected their own levels of self-actualization and their supervision.

Olczak and Goldman (1975) investigated the relationship between self-actualization and psychosocial maturity, using the POI and the Inventory of Psychosocial Development (IPD). The IPD, developed by Constantinople (1969), purportedly measures an individual’s level of psychosocial maturity based upon Ericksonian principles. The subjects, 155 lower-level undergraduate students enrolled in an introductory psychology course, were administered the POI on the first day of class and the IPD six weeks later. The global score for psychosocial maturity was positively and significantly related to both major scales of the POI: Time-Competence and Inner-Directedness (ps < .001), and with 8 of the 10 complementary scales of the POI. The study’s findings support the claim that self-actualization and psychosocial maturity are positively related.
Summary

This section reviewed Maslow’s theory of self-actualization and the distinguishing features of the self-actualized person. Many of these features are contained within theoretical descriptions of the personal characteristics of effective counselors. Studies using self-actualization theory were reviewed. Included in this review were studies that investigated the relationship between the level of self-actualization among counselors and the ability to establish Roger’s facilitative conditions of client change; empathy, genuineness, and positive regard. The findings concerning the existence of such a relationship appear to be inconclusive.

Critiques of Self-Actualization Theory

One major criticism of the theory of self-actualization is that self-actualization does not permit individuality. Patterson (1974), a primary proponent of this argument, perceives the self-actualizing person as having various traits which are similar to all self-actualizers, resulting in standard behaviors. Whitson and Olczak (1991b) contend that Patterson fails to comprehend the nature of self-actualization. Maslow (1962) asserted that self-actualization involves actualizing of a self, and since all selves differ, people actualize themselves in various ways. Maslow (1968) and Rogers (1963) both suggested that the behavior of highly actualizing individuals is less predictable than the less actualized.

Several writers assert that self-actualization implies an asocial and even antisocial orientation to life and that it represents selfishness and egocentricism (Patterson, 1974). For example, Maddi (1973) interprets Roger’s self-actualization theory as suggesting that actualization occurs independently from society. Williamson (1965) goes further by suggesting that the theory of self-
actualization is asocial, but that actualization may lead to development of evil potentials. May (1982) disavows the proposition that self-actualization is always constructive, stating that we are "bundles of both evil and good potentialities." A related argument is that self-actualization is self-centered and leads to self-indulgence and ignorance of social context (White, 1973).

Whitson and Olczak (1991b) contend that the critics cited misunderstand the construct of self-actualization. They argue that these critics make the faulty assumption that there is a direct conflict between the individual and society in that the actualization of one person hinders the self-development of others. However, Rogers (1961) was clear in stating that highly actualizing individuals are concerned with providing the conditions necessary for self-actualization in others. Furthermore, Maslow (1971) asserted that, based on his observations, self-actualizing people are the most compassionate and the most effective reformers of injustice. Maslow viewed people who exclusively sought peak experience as selfish. Rogers and Maslow do not portray self-actualizers as obsessed with the self but rather as having healthy self-respect which frees them to deal genuinely with matters outside themselves.

A criticism related to the objection that self-actualization is asocial is that the theory poses an ahistorical view of human nature which devalues the role of the environment. The essence of this argument, made by Buss (1979) and Nord (1977), is that Maslow's theory of self-actualization is based on liberal values and ethics of a capitalistic ideology, which Maslow proclaimed were universal. Buss (1979) suggests that such a theory is at odds with a truly humanistic approach which values "choice, dialogue, and criticism within the context of a changing socio-historical reality" (p.49). Geller (1982) objects to Maslow's claim that the higher order growth needs are independent of
experience which implies that they are both transhistorical and transcultural in nature.

Maslow agreed that he had overemphasized the individual in his earlier writings on self-actualization and took steps to redress this imbalance. Maslow (1971) developed the concept that community belongingness is a basic need which is fulfilled through social concerns. Maslow also incorporated Ruth Benedict’s concept of synergy as an integral aspect of self-actualization. In low-synergy societies, the social system promotes competition that leads to insecurity in people. In high-synergy societies, the basic needs of all members are met. However, Buss (1979) feared that the concept of self-actualization has been manipulated by the government and business organizations into an ideology that maintains the status quo. Whitson and Olczak (1991b) assert that such applications of self-actualization are based on the earlier overemphasis on the individual. Such applications ignore the subsequent incorporation of the importance of societal growth as an essential part of individual development by Maslow and contemporary self-actualization theorists.

Another criticism of the theory of self-actualization is that exposure to the concept of fulfillment of one’s potentials may heighten people’s dissatisfaction, which has been labeled by Thorne (1975) as ‘actualization neurosis.’ Schur (1976) similarly argues that awareness-makers foster the unrealistic expectation that people should not settle for anything less than ecstasy. Schur fears that people who are already dissatisfied might feel even more deficient in recognizing their unfulfilled potential, and may possibly lead to heightened insecurity rather than a path to satisfaction.

Whitson and Olczak (1991b) argue that Schur and Thorne overemphasize the harmful effects of growth and awareness. While they admit that many
people seem to be suffering from actualization neuroses, they perceive such anxieties and insecurities as a natural outgrowth of changes in society rather than being a consequence of fulfillment conceptualizing. Such changes as the feminist and civil rights movement and the decline of organized religion have led many to reflect upon their role in society and their personal satisfaction as they have become aware of new possibilities. Rather than label such anxiety as actualization neuroses, Whitson and Olczak prefer to view it as "...as a reasonable dissatisfaction with the way things are and a healthy motivation to develop autonomy and fulfill one's potential" (1991b, p. 81).

Daniels (1988) asserts that the theory of self-actualization lacks cohesion and its practice by different groups has become so unrelated that it is not certain whether these groups are referring to the same phenomena. To illustrate the discordant views of self-actualization, Daniels cites the belief of Das (1989) that the western concept of self-actualization is very similar to the aspiration in the Hindu religion of self-realization of the spiritual self, contrasting it with Shaw and Colimore's (1988) assertion that Maslow's theory incorporates the main tenets of capitalism. Weiss (1991) asserts that the lack of an unified theory of self-actualization prevents validity testing of a measurement since the basic meaning of construct validity is that it means the same thing to users.

**Summary**

In summary, the preceding review of the literature has attempted to demonstrate the capacity of moral development (as theorized by Kohlberg), conceptual development (as defined by Hunt), and self-actualization theory (as conceived by Maslow) to investigate the impact of counselor education on student growth and development. Kohlberg's theory of moral development and Hunt's conceptual systems theory were identified as domains of cognitive
development. The fundamental assumptions of cognitive development were reviewed in conjunction with validation that higher stages of development are associated with more adequate functioning.

Counselor education programs function to prepare students to facilitate client development. The empirical literature indicates that counselor effectiveness is related to the counselor's level of development. Therefore, counselor education programs should intentionally promote student development. This research will attempt to determine if counselor education programs foster the development of the person of the student.
CHAPTER THREE
Design and Methodology

Chapter III describes the design and methodology of the study. The chapter is divided into the following sections:

1. Population and Sample
2. Data Gathering
3. Instrumentation
4. Research Design
5. Specific Null Hypotheses
6. Data Analysis
7. Ethical Considerations.

Population and Sample

The target population for this study is master's level counselor education students in the United States. The subjects were abstracted from an accessible population of master's level counselor education students from The College of William and Mary, a public university, located in Williamsburg, Virginia. The sample consists of the 32 students who accepted admission to the master's program in counselor education for the Fall 1995 admissions cycle. Students were assessed during the Fall 1995 semester, at the beginning of the Fall 1996 semester, and at the end of the Spring 1997 semester, which generally coincides with practicum enrollment and graduation for the full-time students.

The study also employed a comparison sample. The comparison subjects were also abstracted from an accessible population of master's level educational leadership and special education students who accepted admission to the master's program for the Fall 1996 admissions cycle. The special education and educational leadership programs are housed in the
same school of education and university as that of the counselor education program. There were 15 educational leadership and 13 special education students, which were combined to form a comparison group of 28 subjects. The comparison subjects were assessed at the beginning of the Fall 1996 semester and at the end of the Spring 1997 semester.

The master's of education program in counselor education is divided into a series of required foundation courses, basic counseling courses, and a series of courses which allow a student to concentrate in counseling in agencies or in schools (elementary, middle, or secondary). The minimum number of semester hours required ranges from 39 to 48 depending upon the student's concentration. The 9 hours of foundation courses consist of (1) research methods, (2) psychological and educational measurement, and (3) one of the following three: child psychology, psychology of adolescence, or human growth and development. The 18 hours of the required basic counseling courses are comprised of (1) career development, (2) theories of counseling and psychotherapy, (3) techniques of counseling, (4) group theory and techniques, (5) ethical and legal issues, and (6) theory and practice of multicultural counseling. The remaining hours are generally expended in the student's concentration.

Students in the school counseling concentration are required to complete a supervised practicum. The school counseling practicum has a minimum of 200 hours of counseling experience in a school setting, with students receiving supervision from a college professor and a guidance counselor in the school setting. Also, school counseling students attend a weekly group supervision session. Community counseling students must complete 2 internships totaling at least 600 hours of counseling experience in community settings. The
community counseling student undergoes both college and field supervision, and is required to attend a weekly group supervision session (College of William & Mary, 1995).

The master's program in counseling was modified in 1995 to meet CACREP standards (V. Foster, personal communication, March 15, 1998). CACREP (1994) standards state, within the section on program objectives and curriculum, that "Students have the opportunity and are encouraged to participate in workshops, seminars, or other activities that contribute to personal and professional development" (p.48). In the very next provision, counselor preparation programs are mandated to provide students with direct experiences as a member in a small group during the course of an academic term (CACREP, 1994).

The master's program in counselor education satisfies CACREP's requirement for providing personal growth experiences in several ways. The group theory and techniques course, required for all program participants, offers not only learning of group theory and techniques, but includes participation in a human relations training group. The course outline states that students will participate in a growth group in which they learn about (1) their interpersonal style and the efficacy of those styles for their role as counselors, (2) to appropriately self-disclose, and (3) to demonstrate empathy for fellow group members. The course outline for the multi-cultural counseling course, also required, states that students will be expected to develop awareness of their own culture and beliefs and values about other cultures. In the program catalog, it states that the human sexuality course provides students with the opportunity to "explore their own sexual attitudes, feelings, and values" (College of William & Mary, 1995, p. 56). The course outline for the theories of
counseling and psychotherapy course, required of all program participants, indicates that students are expected to develop a personal philosophy and model of the counseling process. The course outlines for both the school counseling and community counseling internships state that students will be expected to develop a "self-knowledge" approach. Throughout the practicum/internship, students are asked to identify aspects for their own personal growth that are relevant to their work. To accomplish these objectives, students have weekly group sessions and maintain a weekly journal for the purposes of reflecting on how their counseling experiences relate to their own personal and professional growth. Many of the instructors for courses other than the practicum and internship also encourage student's self-reflection and disclosure through the requirement of weekly journals.

The education leadership program offer master's degrees in educational leadership and educational leadership with an emphasis in higher education administration. The educational leadership degree prepares students for entry-level leadership positions in k-12 school settings, while the degree emphasizing higher education administration trains students for post-secondary educational settings. Both programs in educational leadership are organized into the following components: (1) foundations, (2) organizational leadership, (3) instructional leadership, and (4) clinical leadership. The minimum numbers of hours required for the educational leadership degree is 36, and 33 hours are required for the degree emphasizing higher education administration. Students in the educational leadership degree program have the option of doing an internship while it is required for the degree emphasizing higher education administration. The internship lasts 90 days and includes orientation and debriefing sessions with a college and field supervisor (College
The master's of education program in special education offers two different degrees: one has an emphasis on learning disabilities, mental retardation, and/or emotional disturbances, and the other is a resource collaborating teacher program. The minimum number of hours for the former degree ranges from 33 to 42 while the resource collaborating degree is 40 hours. Both are organized into the following components: foundations, special education core, and culminating course. The resource collaborating teacher degree has the following additional components: curriculum and instruction, and resource collaborating teacher emphasis. The master's program offering an emphasis on learning disabilities, mental retardation, and/or emotional disturbances is designed to prepare teachers for students with disabilities. It has an extensive field-based component. There is a practicum consisting of 8 weeks of supervised experiences followed by concurrent enrollment in two sections of student teaching lasting 14 weeks. The resource collaborating teacher program is designed to train experienced teachers to work with students with disabilities and their teachers in a collaborative mode. Since this program is comprised of experienced teachers, the field-based component is not as extensive, consisting of a semester of full-time teaching with reception of field and college supervision (College of William & Mary, 1996).

Data Gathering

The Defining Issues Test (DIT), the Paragraph Completion Method (PCM), and the Personal Orientation Inventory (POI) were administered to the counselor education students at three different periods. The counselor education students were first administered the research instruments over the course of the month prior to the Fall 1995 semester. Most of the counselor
education students were assessed at the time of their orientation session to the master's program, while those who did not attend were followed up individually. During the first several weeks of the Fall 1996 semester, the counselor education students were given the research instruments for a second time in their practicum classes and those students not enrolled in practicum were tested at an arranged session. The comparison students were first administered the research instruments during the first several weeks of the Fall 1996 semester through individually arranged sessions. Both the counselor education and the comparison students were assessed over the course of the last month of the Spring 1997 semester through individually arranged sessions.

Participation was voluntary and subjects were informed of the purpose and procedures involved in the study. Subjects were offered the opportunity to receive the result of their assessments and interpretive information, as well as the results of the study. Subjects retained the right to decline participation and withdraw from the study at any time. All responses and data were maintained in a confidential manner.

**Instrumentation**

The Defining Issues Test (DIT) was used to measure moral judgment level and the Paragraph Completion Method (PCM) was used to measure conceptual level. The Personal Orientation Inventory (POI) was used to measure intrapersonal actualization. All three instruments appeared to provide valid and reliable empirical measures within their respective domains.

**Defining Issues Test (DIT)**

The DIT was designed by James Rest to assess the level of moral judgment based on Kohlberg's theory of moral development. The DIT consists of a series moral dilemmas, with each dilemma followed by 12 items which are
considerations in deciding the issue. The subject rates each item on a 5-item Likert scale ranging from "no" to "great" importance. For each of the dilemmas, the subjects select their final "action choice" decision and the top 4 items, in order of importance to them, for consideration for problem resolution. There is an individual subscale score for each of the moral stages of development 2 through 6. The individual stage scores are determined by aggregating scores across the moral dilemmas. The sum of the scores of the stages 5a, 5b, and 6 provides the P-index, which represents the individual's use of principled reasoning in his or her decision making. The score is typically presented in terms of a percentage, and can range from 0 to 95.

The DIT includes several subscales. Two subscales, the M-score, which indicates the extent to which subjects endorse high-sounding but meaningless statements, and a Consistency Check, that compares ratings and rankings to identify random responding, guard against invalid responding. The A-score provides evidence of antiestablishment attitude. The U-score, presented in depth in Chapter 2, indicates the degree to which "the person's concept of justice (exemplified in DIT items) is driving the advocacy of a particular course of action" (Rest, 1986b, p. 7). The U-score was not utilized in this study.

There is considerable support for the construct validity of the DIT. Longitudinal studies have found that subjects attribute increasing importance to "higher" moral issues over time (Rest, 1986b; Davison, 1979; Rest, 1979; Rest, Davison, & Robbins, 1978). One of the strongest and most consistent correlates of the DIT has been years of formal education (Rest, 1986b). Several studies have found that the DIT stage scores interrelate in the theoretically predicted manner (Davison, Robbins, & Swanson, 1978; Davison, 1979). Finally, Rest (1986a) reported that moral philosophy/political science
graduates have the highest scores of any group studied to date.

There is evidence of concurrent validity for the DIT. Correlations with Kohlberg's Moral Judgment Interview and the Comprehension of Moral Concepts Test extend as high as the .70's in age-heterogenous samples and average about .50 (Davison, 1979; Rest, 1979). The DIT is related to but distinct from general cognitive capacity. Correlations between the DIT and measures of non-moral cognitive development, including IQ and achievement tests, only reach as high as the .50s and average .36 (Davison, 1979; Rest, 1979). There is support for the DIT's divergent validity (lack of correlation with theoretically dissimilar measures). The DIT is not consistently related to attitudes, values, social desirability, or most personality measures. The DIT is a measure of moral judgment rather than morality. As predicted, the correlation between the DIT and moral behavior is significant but not strong, with most correlations ranging between .30 and .40 (Rest, 1994).

The DIT has sufficient reliability. The P-index has demonstrated test-retest reliabilities are generally in the .70s and .80s over periods ranging from a few weeks to a few months. The internal consistency of the DIT averages in the .80's (Cronbach's Alpha).

The test manual's guidelines were used to score the short form of the DIT, which contains three rather than six dilemmas. Rest (1986b) reported correlations of .91 (n=1080) and .93 (n=160) for P scores between the two versions. Rest claimed that the short form has basically the same attributes as the longer version.

**Paragraph Completion Method (PCM)**

The PCM, developed by Hunt, Butler, Noy, and Rosser (1977), is a semi-projective method to assess Conceptual Level (CL). Respondents are
encouraged to write at least three sentences on each of six open ended questions, which are subsequently scored according to how a person thinks. The topics reveal what respondents think about rule structure and authority relations and how they handle conflict or uncertainty. The PCM is scored by trained raters who assign a score from 0-3 (corresponding to Hunt's levels of conceptual development) to each subject's responses. The total CL score is determined by averaging the three highest responses.

Two longitudinal studies of adolescents have found that PCM scores increase with age, providing evidence of construct validity (Hunt et al. 1977; Hunt, 1968). Support for concurrent validity was provided through findings of significant correlations between CL and Kohlberg's Moral Judgment Interview (.34) and CL and Loevinger's Scale of Ego Development (.23) (Sullivan, McCullough, & Stager, 1970). Studies in which the sample was similar in intelligence yielded significant but small correlations (less than .10) between CL and intelligence (Hunt, 1971). Pohl & Pervin (1968) found that the correlation between academic achievement and CL was .16 among college students of similar levels of academic achievement.

There is support for the reliability of the PCM. A review of 26 studies indicated a median interrater reliability of .86. Test-retest reliability range from .45 to .56 for a one year period, and .67 for three month intervals.

Personal Orientation Inventory (POI)

The POI, developed by Shostrom in consultation with Maslow in 1963, primarily measures intrapersonal actualizing, which is defined as the expression of fulfillment within the individual. The POI consists of 150 two-choice comparative value judgment items concerning what participants believe are most true of themselves. Items are logically grouped into two major ratio
scales and ten profile scales that are used to compare responses with normative samples. Statements reflect both value and behavior judgments that are considered to be vital in the development of self-actualization.

The two ratio scores are Time Ratio and Support Ratio. The Time Ratio score assesses the extent to which one is reality oriented in the present and is able to integrate past experiences and future expectations into meaningful continuity. The Ti (Time Incompetent) person lives mostly in the past, with considerable resentment and guilt, and/or in the future, with idealistic aspirations, expectations, and fears. In contrast, the Tc (Time Competent) person lives mostly in the present with awareness and feeling reactivity. Since self-actualization is perceived as existing on a continuum, the ratio of Ti to Tc reflects the degree to which the person exists in the present. The Ti-Tc ratio for the self-actualized person approaches 1 to 8. A ratio of 1 to 10 is considered to represent an unhealthy desire of the individual to seem more self-actualized (Shostrom, 1974).

The other ratio score, Support Ratio, evaluates Other-Directedness (O) versus Inner-Directedness (I). Self-actualized persons are more "inner-directed" in that they are more independent and self-supportive, whereas "other-directedness" is characterized as dependency on other persons' views. The self-actualized person's O-I ration is expected to be 1 to 3, which indicates that the person relies mostly on his or her feelings rather than others' in making life decisions. Once again, a score above the average score of the self-actualized person, in this case a ratio of 1 to 4, is considered to represent a desire of the subject to appear more "self-actualized." A ratio score of lower than 1 to 3 supposedly indicates difficulty in trusting either one's own or others' feeling in decision making (Shostrom, 1974).
For the statistical analyses, instead of using the full Ratio scores, only the Time-Competence (Tc) and Inner-Directed (I) scales will be utilized. This is recommended in the test manual due to the statistical complexities of ratio scores. The Inner-Directed and Time-Competence scales are the only scales that do not have overlapping items (Shostrom, 1974).

The profile scales were designed to assess particular personality characteristics considered to be related with self-actualization. The Self-Actualizing Value (SAV) scale assesses the degree to which one's values are like self-actualizing people. The Existentiality (Ex) scale indicates the degree of flexibility in the application of values to living. The Feeling Reactivity (Fr) scale measures sensitivity to one's own feelings and needs. The Spontaneity (S) scale measures the capacity to express feelings behaviorally. The Self-Regard (Sr) scale measures the ability to like one's self because of one's strength as a person. A low score indicates low self-worth. The Self-Acceptance (Sa) scale measures acceptance of one's self despite limitations. The Nature of Man (Nc) scale reveals that one perceives man as essentially good. The Synergy (Sy) scale indicates one's ability to see opposites of life as meaningfully related. The Acceptance of Aggression (A) scale measures the ability to accept anger within one's self as natural. Finally, the Capacity for Intimate Contact (C)'s scale assesses the person's capacity to develop meaningful relationships with others (Shostrom, 1974).

Based on a sample of 48 college students, test-retest reliability for a week interval was .71 for Time-Competence and .77 for Inner-Direction. The coefficients for the subscales ranged from .52 to .82. Klavetter and Mogar (1967) concluded that with the exception of three subscales, "Stability coefficients are generally high, ranging from .71 to .85" (p. 423). Test-retest
reliability for a year interval with a sample of 46 student nurses ranged from .34 to .72 for the different scales (Ilardi & May, 1968).

There is evidence of construct validity for the POI. Samples of self-actualizing and nonactualizing persons nominated by psychologists familiar with self-actualization theory yielded significant differences on the two major scales and 9 of the 10 subscales (Shostrom, 1964). Studies have found that the POI differentiated hospitalized psychiatric patients from nonhospitalized persons (Fox, Knapp, & Michael, 1968), and patients hospitalized for medical conditions versus patients hospitalized for alcoholism and schizophrenics (Murphy, DeWolfe, & Mozdzierz, 1984). McClain (1970) found evidence for content validity in that POI scores were highly correlated (.69) with expert’s ratings of self-actualization. The correlation between POI scales and other personality measures, including the Eysenck Personality Inventory and certain scales of the MMPI, are significant but weak. A number of studies have indicated the POI’s ability to measure change in self-actualization following encounter group experience (Shostrom, 1974).

Weiss (1991) challenges the basic validity of the POI and the published claims that it can distinguish between normal and self-actualized adults. Weiss attributes this failure to major logical errors in the original POI validation and lack of consensus on the theory of self-actualization and the definition of the construct variable.

Shostrom used the “known groups” technique to validate the POI. This technique involves an assumption of a priori differences between groups based on interpretation of the construct in question. Validation requires that the test distinguish these differences. Hattie and Cooskey (1984) caution that errors may occur with this validation technique if the groups used are based on
unrepresentative samples or a small number of persons. Weiss (1991) asserts that both of these circumstances may have occurred in validation of the POI. For the POI, three “known groups” were selected by practicing clinical psychologists: SA (n = 29); Normals (n = 158), Non-SA (n = 34). Weiss argues that since there is little consensus regarding the definitional construct of self-actualization, the likelihood for deviation among the clinical psychologists is great but cannot be determined until the theory is more established.

According to Weiss, the validation logic of the POI is problematic. The mean value of each of the “known groups” was used as the criterion for characterizing the group attribute. In the POI Manual is the claim that “the means for the self-actualizing group are above the normal adult means on 11 of the 12 scales and the means of the non-self-actualizing group are below the norm means on all scales” (Shostrom, 1974, p.23). However, Weiss proved this false when, in using Shostrom’s published data, it failed a two-tailed t-test for independent groups with a significance level of .05 for 8 of the 12 scales. Thus, “self-actualizing adults” had POI scores on these 8 scales that did not differ significantly from that of “normal adults.” Furthermore, Weiss revealed that for all 12 POI scales there is an estimated overlap between the “self-actualizing” adults and “non-self-actualizing” adults that, depending on the scale, 62 to 86% of the combined members of both groups are simultaneously defined as “self-actualized” and “non-self-actualized”. Weiss argues that the score range rather than the group mean should have been utilized for the validation paradigm.

**Research Design**

The design of this study is causal comparative. The purpose of the study is to investigate the relationship of counselor education and student growth and
development in the domains of moral judgment and conceptual complexity and self-actualization.

Specific Null Hypotheses

1. There is no significant difference in moral judgment level as assessed by the Defining Issues Test (DIT) for counselor education students before entering the program (Time 1), and at an one-year follow-up (Time 2), and at an one-and-a-half-year follow-up (Time 3).

2. There is no significant difference in conceptual level as assessed by the Paragraph Completion Method (PCM) for counselor education students before entering the program (Time 1), and at an one-year follow-up (Time 2), and at an one-and-a-half-year follow-up (Time 3).

3. There is no significant difference in self-actualization level as assessed by the Personal Orientation Inventory (POI) for counselor education students before entering the program (Time 1), and at an one-year follow-up (Time 2), and at an one-and-a-half-year follow-up (Time 3).

4. There is no significant difference in moral judgment level as assessed by the Defining Issues Test (DIT) for counselor education students and comparison students between Time 2 and Time 3.

5. There is no significant difference in conceptual level as assessed by the Paragraph Completion Method (PCM) for counselor education students and comparison students between Time 2 and Time 3.

6. There is no significant difference in self-actualization as assessed by the Personal Orientation Inventory (POI) for counselor education students and comparison students between Time 2 and Time 3.

* the counselor education students were first measured in the Fall of 1995 (Time 1), but the initial assessment of the comparison group occurred during
the one-year follow-up of the counselor education students (Time 2).

**Statistical Analyses**

Repeated measures multivariate analysis of variance (MANOVA) was used to analyze data for hypotheses 1 through 3. Doubly multivariate repeated measures MANOVA was used to analyze data for hypotheses 4 through 6. For the purposes of this analysis and determining statistical significance, alpha was set at .05.

**Ethical Considerations**

The following precautions were established to maintain ethical standards:

1. Subjects were informed in writing and orally of the purpose of this investigation. A consent form included a statement of purpose and ethical safeguards. Only subjects who signed a consent form were included in the study.
2. Participation was voluntary. Subjects retained the right to decline participation or to discontinue the inventories, in part or in full, at any time.
3. Data collected in the study was kept in confidence. The data from each subject's inventories was coded to prevent personal identification. Only group data was reported in the study. Once the data was recorded from the inventories, the original protocols and identifying information were destroyed.
4. Subjects were given the opportunity to receive their personal results, interpretive material and study results and to discuss these results with the researcher.
5. Subjects were assured that their responses to the inventories would not jeopardize their status in the counselor education program, nor with any regulatory agency.
Summary

The researcher employed a causal comparative design to investigate the relationship between enrollment in a counselor education program and personal growth and development in the domains of moral judgment, conceptual development, and self-actualization. The objective of the study was to compare scores of students as they progress through the program, on instruments assessing three domains. Personal and demographic data was collected from all subjects. Ethical standards were maintained.
CHAPTER FOUR

Results

The purpose of this study was to explore the relationship between counselor education and counselor education students’ development and growth, specifically in the domains of moral judgment, conceptual complexity, and self-actualization. The findings of this heuristic study will be described in this chapter. It is organized into two sections: descriptive statistics and data analyses for the research hypotheses.

Descriptive Statistics

The sample for this study consisted of 32 counselor education student volunteers who were assessed by three research instruments at three different points during their enrollment in a master’s degree program. Five failed to complete all of the research instruments; two withdrew from the program during the study while three yielded unscorable PCM protocols in that they failed to write at least three sentences for more than three topics for one of the administrations. They were excluded from the statistical analyses. The study also employed a comparison sample. The comparison sample consisted of 15 educational leadership and 13 special education student volunteers who were enrolled in a master’s degree program housed in the same school of education and university as was the counselor education program. No counselor education subject declined to participate while one member of the comparison sample declined participation.

Each volunteer signed a form granting consent and completed a descriptive questionnaire about current personal information and information relevant to their participation in their respective masters’ program.

Of the 27 counselor education students, 21 were women (78.8%). A total of 122
24 identified themselves as Caucasian (89%), 2 as African American (7%), and 1 as Hispanic (4%). The counselor education group members' ages ranged from 21 to 56 (M = 28.5; SD = 10.7). Of the participants, 17 were full-time students, defined as 9 or more credits each semester, and 10 were part-time students. Ten of the counselor education students were in the school counseling track (37%), 8 were in the community counseling track (30%), and 9 were in the addictions/community counseling track (33%). At the time of the final testing administration (Time 3), the number of credits earned by counselor education students, including the credits expected to be earned for that semester, ranged from 15 to 56 (M = 41; SD = 13).

Of the 27 comparison group students, 19 were women (70.3%). A total of 22 identified themselves as Caucasian (82%), 3 as African American (11%), 1 as Asian American (4%), and 1 as Native American (4%). The comparison group members' ages ranged from 22 to 42 (M = 28.2; SD = 5.8). Of the participants, 17 were full-time students, defined as 9 or more credits each semester, and 10 were part-time students. At the time of the final testing administration (Time 3), the number of credits earned by the educational leadership/special education students, including the credits expected to be earned for that semester, ranged from 6 to 48 (M = 20.6; SD = 10.1).

The counselor education students were administered the three measurements (DIT, PCM, and POI) at three different points: during the month prior to their first semester in the program, the Fall 1995 semester (Time 1), during the first two weeks of the Fall 1996 semester, and during the last month of the 1997 semester (Time 3). The educational leadership and special education students were assessed twice: during the first two weeks of the Fall 1997 semester (Time 2), and during the last month of the 1997 semester (Time
Defining Issues Test (DIT)

DIT P scores may range from .00 to .90 and reveal the percentage of respondents’ answers that convey principled reasoning (Stages 5A, 5B, and 6). Mean scores obtained on the DIT are presented in Table 4-1.

The mean P scores on the DIT at Time 1 was 0.49, and at Time 3 was 0.53. Graduate students who are not enrolled in programs which emphasize moral thinking tend to average in the 0.50’s and those graduate students who do focus on moral thinking averages in the 0.60’s. The counselor education subjects had P scores above practicing physicians (0.49), college students in general (0.42), and adults in general (0.40), but were lower than moral philosophy and political science graduate students (0.65) (Rest, 1994).
Table 4-1

Means and Standard Deviations by Condition for the DIT

<table>
<thead>
<tr>
<th>Condition</th>
<th>n</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor education students</td>
<td>27</td>
<td>0.4930</td>
<td>0.4963</td>
<td>0.5226</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1723</td>
<td>0.1683</td>
<td>0.1884</td>
</tr>
<tr>
<td>Ed. leadership/Special education</td>
<td>27</td>
<td></td>
<td>0.4378</td>
<td>0.4507</td>
</tr>
<tr>
<td>students</td>
<td></td>
<td></td>
<td>0.1883</td>
<td>0.1603</td>
</tr>
</tbody>
</table>

Note. The higher the score is, the greater the attribution.
Paragraph Completion Method (PCM)

PCM scores may range from 0.0 to 3.0 with each integer indicating a stage of Hunt's (1971) conceptual complexity development model. Whereas the DIT only requires that the subject recognizes more complex reasoning, the PCM necessitates original thinking on the part of the subjects, who provide differentiated responses using their own ideas. Hunt et al. (1977) proposed standard ranges of scores for the designation of groups as low conceptual level (0-1.0), moderate CL (1.1-1.9), and high CL (2.0-3.0). Mean scores obtained on the PCM are presented in Table 4-2.

Mean scores for counselor education students at posttesting indicate high conceptual levels ($M = 2.1$). Characteristics of people at the 2.0 stage include: open to other's ideas, being able to recognize and evaluate alternatives, but still being unable to integrate them into a solution, striving for independence, and possessing increased level of tolerance. Only 4 (14.8%) of the counselor education students at posttesting had moderate CL scores (below 2.0). The mean scores for the counselor education students at pretesting and posttesting were higher than the means for the 3 samples of graduate students used in the PCM Manual (Hunt et al., 1977) to identify adult sample norms ($N = 91, M = 1.85$) ($N = 43, M = 1.93$) ($N = 60, M = 1.82$).
### Table 4-2

**Means and Standard Deviations by Condition for the PCM**

<table>
<thead>
<tr>
<th>Condition</th>
<th>n</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor education students</td>
<td>27</td>
<td>2.0296</td>
<td>1.9519</td>
<td>2.1222</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3593</td>
<td>0.2424</td>
<td>0.2375</td>
</tr>
<tr>
<td>Ed. leadership/Special education</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>students</td>
<td></td>
<td>1.8704</td>
<td>2.0704</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3604</td>
<td>0.3361</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** The higher the score is, the greater the attribution.
The Personal Orientation Inventory (POI) generates 2 ratio scores and 10 profile scores for each subject. For the statistical analyses, instead of using the full ratio scores, only the Time Competence (Tc) and Inner Directed (I) scales were utilized. This is recommended in the test manual due to the statistical complexities of ratio scores. The Inner-Directed and Time-Competence scales are the only scales that do not have overlapping items (Shostrom, 1974).

The mean scores on the POI scales for the counselor education students are presented in Table 4-3. For the comparison students, the mean scores on the POI scales are presented in Table 4-4. For the purpose of providing contextual meaning to the POI scores, Table 4-5 lists mean scores of "relatively self-actualizing persons", "normal adults", and "non-self-actualizing persons". These data are from the initial testing of construct validity for the POI instrument using the "known groups" technique. Persons in the "relatively self-actualizing" and "non-self-actualizing" samples were carefully selected, each being nominated by practicing, certified clinical psychologists (Shostrom, 1974).

The counselor education students' POI score means at pretesting and posttesting generally resemble the score means of persons nominated as "relatively self-actualizing." For the profile scores, which are designed to reflect the respondent's progress in achieving the various qualities of self-actualization, the counselor education students' POI score means at pretesting were higher than the mean scores for the "relatively self-actualizing" sample on 5 of the 10 scales. The counselor education students' mean scores at posttesting were above the mean scores for the "relatively self-actualizing" sample on 7 of the 10 profile scales, and between the mean scores for the "relatively self-actualizing" sample and the "normal adult" sample on the other 3 scales.
The profile scales on which the counselor education students' score mean at posttesting was higher than that of the "relatively self-actualizing" sample include the following: the Capacity for Intimate Contact (C) scale which assesses the person's capacity to develop meaningful relationships with others, the Feeling Reactivity (Fr) scale which measures sensitivity to one's own feelings and needs, the Nature of Man (Nc) scale which reveals that one perceives man as essentially good, the Self-Acceptance (Sa) scale which measures acceptance of one's self despite limitations, the Self-Actualizing Value (SAV) scale which assesses the degree to which one's values are like self-actualizing people, the Self-Regard (Sr) scale which measures the ability to like one's self because of one's strength as a person, and the Spontaneity (S) scale which measures the capacity to express feelings behaviorally (Shostrom, 1974).

The profile scales on which the counselor education students' score mean at posttesting was between that of the "relatively self-actualizing" sample and the "normal adult" sample included the following: the Existentiality (Ex) scale which indicates the degree of flexibility in the application of values to living, the Synergy (Sy) scale which indicates one's ability to see opposites of life as meaningfully related, and the Acceptance of Aggression (A) scale which measures the ability to accept anger within one's self as natural (Shostrom, 1974).

The two major scales of the POI are Time Competence (Tc), which indicates whether a person lives predominantly in the present versus the past or future, and Inner-Directedness (I), which indicates whether the person is self-directed versus being dependent upon others' views. For the Time
Competence (Tc) scale, the counselor education students' mean score at pretesting (16.5) was lower than that of the "relatively self-actualizing" sample (18.9) and the "normal adult" sample (17.7) but higher than that of the "non-actualizing" sample (15.8). By posttesting, the counselor education students' mean score (17.5) was higher than that of the "normal adult" sample but still below that of the "relatively self-actualizing" sample. For the Inner-Directedness (I) scale, the counselor education students' mean score at pretesting (89.4) was higher than that of the "normal adult" sample (87.2) but below the "relatively self-actualizing" sample (92.9). However, at posttesting, the counselor education students' mean score (94) was above that of the "relatively self-actualizing" sample.
### Table 4-3

Mean POI Scores of Counselor Education Students (n = 27)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Directed (I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>89.4074</td>
<td>89.7407</td>
<td>94.0000</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>13.2817</td>
<td>14.1980</td>
<td>13.7029</td>
</tr>
<tr>
<td>Other Directed (O)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>36.5926</td>
<td>36.6667</td>
<td>32.8184</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>13.2004</td>
<td>14.4409</td>
<td>13.7338</td>
</tr>
<tr>
<td>Time Competence (Tc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>16.5556</td>
<td>16.5556</td>
<td>17.5185</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>3.3551</td>
<td>3.5119</td>
<td>2.9269</td>
</tr>
<tr>
<td>Time Incompetent (Ti)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>6.3333</td>
<td>6.3704</td>
<td>5.5556</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>3.4194</td>
<td>3.4989</td>
<td>2.9526</td>
</tr>
<tr>
<td>Acceptance for Aggression (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>16.4815</td>
<td>16.7037</td>
<td>16.8889</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>3.3669</td>
<td>3.9401</td>
<td>3.6725</td>
</tr>
<tr>
<td>Capacity for Intimate Contact (C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>20.0370</td>
<td>19.4815</td>
<td>20.9259</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>4.7675</td>
<td>4.5010</td>
<td>4.6237</td>
</tr>
</tbody>
</table>
Mean POI Scores of Counselor Education Students (n = 27) (Continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existentiality (Ex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>21.3704</td>
<td>21.2222</td>
<td>23.9630</td>
</tr>
<tr>
<td>SD</td>
<td>4.4389</td>
<td>5.2355</td>
<td>4.8634</td>
</tr>
<tr>
<td>Feeling Reactivity (Fr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>16.9259</td>
<td>17.0000</td>
<td>17.6296</td>
</tr>
<tr>
<td>SD</td>
<td>3.2216</td>
<td>2.8420</td>
<td>2.9502</td>
</tr>
<tr>
<td>Nature of Man (Nc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>12.4074</td>
<td>12.5185</td>
<td>12.8889</td>
</tr>
<tr>
<td>SD</td>
<td>1.2172</td>
<td>1.4773</td>
<td>1.2810</td>
</tr>
<tr>
<td>Self-Acceptance (Sa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.5185</td>
<td>15.8519</td>
<td>16.9630</td>
</tr>
<tr>
<td>SD</td>
<td>4.1544</td>
<td>4.3563</td>
<td>4.3720</td>
</tr>
<tr>
<td>Self-Actualizing Value (SAV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>21.7037</td>
<td>21.5556</td>
<td>22.0741</td>
</tr>
<tr>
<td>SD</td>
<td>2.4149</td>
<td>2.2589</td>
<td>2.1659</td>
</tr>
<tr>
<td>Self-Regard (Sr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>13.4074</td>
<td>13.6667</td>
<td>13.4074</td>
</tr>
<tr>
<td>SD</td>
<td>2.7352</td>
<td>2.4019</td>
<td>2.5459</td>
</tr>
<tr>
<td>Spontaneity (S)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>13.2593</td>
<td>13.1481</td>
<td>14.1481</td>
</tr>
<tr>
<td>SD</td>
<td>3.0958</td>
<td>2.9833</td>
<td>2.7555</td>
</tr>
</tbody>
</table>
### Mean POI Scores of Counselor Education Students (n = 27) (Continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synergy (Sy)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>7.2963</td>
<td>7.4815</td>
<td>7.3704</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>1.1373</td>
<td>1.0874</td>
<td>0.9667</td>
</tr>
</tbody>
</table>
Table 4-4

Mean POI Scores of Educational Leadership/Special Ed. Students (n = 27)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Directed (I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>81.3333</td>
<td>84.2593</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>10.4734</td>
<td>12.1357</td>
<td></td>
</tr>
<tr>
<td>Other Directed (O)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>44.2593</td>
<td>41.5556</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>10.4310</td>
<td>12.2296</td>
<td></td>
</tr>
<tr>
<td>Time Competence (Tc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.7407</td>
<td>15.6667</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2.4899</td>
<td>2.4962</td>
<td></td>
</tr>
<tr>
<td>Time Incompetent (Ti)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>7.0370</td>
<td>7.1111</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2.5643</td>
<td>2.5470</td>
<td></td>
</tr>
<tr>
<td>Acceptance for Aggression (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.8889</td>
<td>16.1111</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2.7781</td>
<td>2.8868</td>
<td></td>
</tr>
<tr>
<td>Capacity for Intimate Contact (C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>17.7407</td>
<td>18.1111</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>4.4080</td>
<td>3.8464</td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existentiality (Ex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>18.8889</td>
<td>20.0370</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>4.5348</td>
<td>4.9106</td>
<td></td>
</tr>
<tr>
<td>Feeling Reactivity (Fr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>14.6667</td>
<td>15.7407</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>2.8011</td>
<td>2.9819</td>
<td></td>
</tr>
<tr>
<td>Nature of Man (Nc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>11.6667</td>
<td>11.4815</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>----------</td>
<td>1.6408</td>
<td>2.5925</td>
</tr>
<tr>
<td>Self-Acceptance (Sa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>13.4815</td>
<td>15.1481</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>3.8368</td>
<td>4.3208</td>
<td></td>
</tr>
<tr>
<td>Self-Actualizing Value (SAV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>20.3333</td>
<td>20.7407</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>2.6602</td>
<td>2.9819</td>
<td></td>
</tr>
<tr>
<td>Self-Regard (Sr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>13.1852</td>
<td>13.0370</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>1.4686</td>
<td>1.7205</td>
<td></td>
</tr>
<tr>
<td>Spontaneity (S)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>11.8148</td>
<td>12.8519</td>
<td></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>2.3540</td>
<td>3.0090</td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Mean POI Scores of Ed. Leadership/Special Ed. Students (n = 27) (Continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synergy (Sy)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>--------</td>
<td>7.1111</td>
<td>7.2593</td>
</tr>
<tr>
<td>SD</td>
<td>--------</td>
<td>1.0860</td>
<td>1.4830</td>
</tr>
</tbody>
</table>
Table 4-5

Mean POI Scores of Samples Nominated as "Self-Actualizing," "Normal" and "Non-Self-Actualizing"

<table>
<thead>
<tr>
<th>Scale</th>
<th>Self-Actualizing</th>
<th>Normal Adult</th>
<th>Non-Actualizing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 29</td>
<td>n = 158</td>
<td>n = 34</td>
</tr>
<tr>
<td>Inner Directed (I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>92.9</td>
<td>87.2</td>
<td>75.8</td>
</tr>
<tr>
<td>SD</td>
<td>11.5</td>
<td>13.6</td>
<td>16.2</td>
</tr>
<tr>
<td>Time Competence (Tc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>18.9</td>
<td>17.7</td>
<td>15.8</td>
</tr>
<tr>
<td>SD</td>
<td>2.5</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Acceptance for Aggression (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>17.6</td>
<td>16.6</td>
<td>14.7</td>
</tr>
<tr>
<td>SD</td>
<td>3.1</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Capacity for Intimate Contact (C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>20.2</td>
<td>18.8</td>
<td>16.5</td>
</tr>
<tr>
<td>SD</td>
<td>3.4</td>
<td>4.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Existentiality (Ex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>24.8</td>
<td>21.8</td>
<td>18.9</td>
</tr>
<tr>
<td>SD</td>
<td>3.5</td>
<td>5.1</td>
<td>5.4</td>
</tr>
</tbody>
</table>
Mean POI Scores of Samples Nominated as "Self-Actualizing, "Normal" and "Non-Self-Actualizing" (Continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Self-Actualizing</th>
<th>Normal Adult</th>
<th>Non-Actualizing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 29 )</td>
<td>( n = 158 )</td>
<td>( n = 34 )</td>
</tr>
<tr>
<td>Feeling Reactivity (Fr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>16.3</td>
<td>15.7</td>
<td>14.3</td>
</tr>
<tr>
<td>( SD )</td>
<td>2.8</td>
<td>3.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Nature of Man (Nc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>12.3</td>
<td>12.4</td>
<td>11.3</td>
</tr>
<tr>
<td>( SD )</td>
<td>2.2</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Self-Acceptance (Sa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>18.9</td>
<td>17.1</td>
<td>14.2</td>
</tr>
<tr>
<td>( SD )</td>
<td>3.5</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Self-Actualizing Value (SAV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>20.7</td>
<td>20.2</td>
<td>18.0</td>
</tr>
<tr>
<td>( SD )</td>
<td>3.6</td>
<td>3.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Self-Regard (Sr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>12.9</td>
<td>12.0</td>
<td>10.2</td>
</tr>
<tr>
<td>( SD )</td>
<td>1.9</td>
<td>2.7</td>
<td>3.3</td>
</tr>
<tr>
<td>Spontaneity (S)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( M )</td>
<td>12.7</td>
<td>11.6</td>
<td>9.8</td>
</tr>
<tr>
<td>( SD )</td>
<td>2.9</td>
<td>3.0</td>
<td>3.4</td>
</tr>
</tbody>
</table>
### Mean POI Scores of Samples Nominated as "Self-Actualizing, "Normal" and "Non-Self-Actualizing" (Continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Self-Actualizing</th>
<th>Normal Adult</th>
<th>Non-Actualizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 29</td>
<td></td>
<td>n = 158</td>
<td>n = 34</td>
</tr>
<tr>
<td>Synergy (Sy)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>7.6</td>
<td>7.3</td>
<td>6.2</td>
</tr>
<tr>
<td>SD</td>
<td>1.2</td>
<td>1.2</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 4-6

**Intercorrelations Between Measurements for Counselor Education Students and Comparison Group Students (N = 54)**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. DIT P score</td>
<td>--</td>
<td>.172</td>
<td>.375*</td>
<td>.176</td>
</tr>
<tr>
<td>2. PCM</td>
<td>--</td>
<td>.139</td>
<td>.065</td>
<td></td>
</tr>
<tr>
<td>3. I (POI)</td>
<td>--</td>
<td></td>
<td>.666*</td>
<td></td>
</tr>
<tr>
<td>4. Tc (POI)</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. DIT P score</td>
<td>--</td>
<td>.263</td>
<td>.313*</td>
<td>.054</td>
</tr>
<tr>
<td>2. PCM</td>
<td>--</td>
<td>.457*</td>
<td>.238</td>
<td></td>
</tr>
<tr>
<td>3. I (POI)</td>
<td>--</td>
<td></td>
<td>.652*</td>
<td></td>
</tr>
<tr>
<td>4. Tc (POI)</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.
For hypotheses 1 through 3, a repeated measures multivariate analysis of variance (MANOVA) was performed on the 14 dependent variables; the DIT, PCM, and 12 POI scales. The independent variable was Time (1, 2, and 3).

For hypotheses 4 through 6, a 2 (Group) X 2 (Time) repeated measures MANOVA was performed on the 14 dependent variables. Independent variables were Condition (counselor education vs. comparison group students) and Time (Time 2 vs. Time 3). The Pillai's Trace criterion was used to determine the significance of the MANOVA. The selection of the Pillai's Trace criterion was based on Olson's (1976) conclusion that of the four different test statistics used in multivariate analysis of variance, the Pillai's Trace statistic "is the most robust....and is sufficiently powerful to detect population differences in any noncentrality structure" (p. 583).

For the purposes of these analyses and determining statistical significance, alpha was set at .05.

This section will report the results of the two multivariate hypotheses, and restate and present the results for each univariate hypothesis.

Repeated Measures MANOVA - Hypotheses 1 - 3

With the use of the Pillai's Trace criterion, the combined dependent variables were not significantly affected by time $F(28, 80) = 1.414, \ p > .05$; eta squared = .331; power = .992. $F$ and lambda are reported in Table 4-7.

The analysis may not have produced proper results due to the violation of the assumption of sphericity. The sphericity assumption for repeated measures MANOVA "requires that the variances of the transformed variables will be equal and the transformed variables are not intercorrelated" (Weinfurt, 1997, p. 270). Mauchly's test for sphericity revealed that for 3 of the dependent variables, the
variance-covariance matrix was not equal \((C, \ p = .001; \ PCM, \ p = .010; \ Sy, \ p = .034)\). Stevens (1986), as cited in Weinfurt, asserts that violation of the sphericity condition results in reduced power. The probability values of the four multivariate tests varied considerably which is another indication that were difficulties in the analysis.
Table 4-7

Repeated Measures MANOVA - Multivariate Tests

<table>
<thead>
<tr>
<th>Source</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's Trace</td>
<td>.662</td>
<td>1.414</td>
<td>28.000</td>
<td>80.000</td>
<td>.117</td>
</tr>
<tr>
<td>Wilk's Lambda</td>
<td>.412</td>
<td>1.555</td>
<td>28.000</td>
<td>78.000</td>
<td>.066</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>1.248</td>
<td>1.694</td>
<td>28.000</td>
<td>76.000</td>
<td>.037</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>1.082</td>
<td>3.092</td>
<td>14.000</td>
<td>40.000</td>
<td>.003</td>
</tr>
</tbody>
</table>
Hypothesis 1:
There is no significant difference in moral judgment level as assessed by the Defining Issues Test (DIT) for counselor education students between entering the program (Time 1) and at an one-year (Time 2) and an one-and-half-year follow-up (Time 3).

The repeated measures MANOVA revealed that the combined dependent variables were not significantly affected by time. Thus, there was a failure to reject the null hypothesis.

Hypothesis 2:
There is no significant difference in conceptual level as assessed by the Paragraph Completion Method (PCM) for counselor education students between entering the program (Time 1) and at an one-year follow-up (Time 2) and an one-and-a-half year follow-up (Time 3).

The repeated measures MANOVA revealed that the combined dependent variables were not significantly affected by time. Thus, there was a failure to reject the null hypothesis.

Hypothesis 3:
There is no significant difference in self-actualization level as assessed by the Personal Orientation Inventory (POI) for counselor education students between entering the program (Time 1) and at an one-year (Time 2) and an one-and-a-half year follow-up (Time 3).

The repeated measures MANOVA revealed that the combined dependent variables were not significantly affected by time. Thus, there was a failure to reject the null hypothesis.
Doubly Multivariate Repeated Measures MANOVA - Hypotheses 4 - 6

With the use of the Pillai's Trace criterion, the combined dependent variables were significantly affected by time, $F(14, 39) = 5.453$, $p < .05$; power = 1.00; but not by condition, $F(14, 39) = 1.555$; power = .747; nor by their interaction, $F(14, 39) = 1.288$; power = .643. $F$ and lambda are reported in Table 4-8. Univariate analysis of variance (ANOVA) tests were performed for each of the dependent variables (See Table 4-9).

Weinfurt's (1997) recommended classification scheme for effect sizes measured via $R^2$ in behavioral science research is that 0.01 is small, 0.09 is medium, and 0.25 is large. The majority of behavioral science research yields small to medium effect sizes. For example, Haase, Waechter, and Solomon (1982), as cited in Kiess (1989), determined the effect sizes on 11,044 tests of statistical significance reported in issues of the Journal of Counseling and Psychology published between 1970 and 1979. They found a median eta squared value of 0.083, which provides a notion of the typical strength of association in social research. Based on Weinfurt's (1997) classification scheme, the results reflected a large association between time and the dependent variables, eta squared = .66.
Table 4-8

**Doubly Multivariate Repeated Measures MANOVA - Multivariate Tests**

<table>
<thead>
<tr>
<th>Source</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's</td>
<td>.358</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Trace</td>
<td>.642</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Wilk's</td>
<td>.642</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Lambda</td>
<td>.558</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Hotelling's</td>
<td>.558</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Trace</td>
<td>.558</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Roy's</td>
<td>.558</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td>Largest Root</td>
<td>.558</td>
<td>1.555</td>
<td>14.000</td>
<td>39.000</td>
<td>.137</td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's</td>
<td>.642</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Trace</td>
<td>.338</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Wilk's</td>
<td>.338</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Lambda</td>
<td>1.958</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Hotelling's</td>
<td>1.958</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Trace</td>
<td>1.958</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Roy's</td>
<td>1.958</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td>Largest Root</td>
<td>1.958</td>
<td>5.453</td>
<td>14.000</td>
<td>39.000</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Condition * Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai's</td>
<td>.316</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Trace</td>
<td>.684</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Wilk's</td>
<td>.684</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Lambda</td>
<td>.462</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Hotelling's</td>
<td>.462</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Trace</td>
<td>.462</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Roy's</td>
<td>.462</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
<tr>
<td>Largest Root</td>
<td>.462</td>
<td>1.288</td>
<td>14.000</td>
<td>39.000</td>
<td>.258</td>
</tr>
</tbody>
</table>
Hypothesis 4:
There is no significant difference in moral judgment level as assessed by the Defining Issues Test (DIT) for counselor education students and comparison students between Time 2 and Time 3.

The univariate ANOVA indicated that moral judgment level was not affected by time, $F(1, 52) = .689; power = .129$. Thus, there was a failure to reject the null hypothesis.

Hypothesis 5:
There is no significant difference in conceptual level as assessed by the Paragraph Completion Method for counselor education students and comparison students between Time 2 and Time 3.

The univariate ANOVA indicated that conceptual level significantly increased over time, $F(1, 52) = 17.911, p > .05; power = .986$. The results reflected a large association between conceptual level scores and time, eta squared $= .256$. The small $p$ value suggests that the chance of the results being attributed to Type I error is small and the eta squared value indicates that the effect of time is not explaining nontrivial portions of the variance in the dependent measures. Thus, the null hypothesis was rejected.

Hypothesis 6:
There is no significant difference in self-actualization as assessed by the Personal Orientation Inventory (POI) for counselor education students and comparison students between Time 2 and Time 3.

Univariate ANOVA's revealed that for 6 of the 12 scales of the POI, the measurement of self-actualization, the students scores' significantly increased. Of the two major scales, the scores increased significantly on the Inner-Directed (I) scale but not for the Time Competence (Tc) scale. Also, scores increased
significantly for the Capacity for Intimate Contact (C) scale, Existentiality (E) scale, Feeling Reactivity (Fr) scale, Self-Acceptance (Sa) scale, Spontaneity (S) scale. These are reported in Table 4-9.

The results reflected a large association between the scores on the Inner-Direction (I) scale and time, eta squared = .260. For the subscales of the POI, only on the Existentiality (E) scale was there a large association with time, eta squared = .252. For the other POI subscales for which there was a significant increase over time, the association between the scores and time was in the moderate to large range (Feeling Reactivity, eta squared = .226; Spontaneity, eta squared = .186; Capacity for Intimate Contact, eta squared = .151; Self-Acceptance, eta squared = .135).

The small p values suggest that the chance of the results being attributed to Type I error is small and the eta squared values indicate that the effect of time is not explaining nontrivial portions of the variance in the dependent measures. Thus, the null hypothesis was rejected.
<table>
<thead>
<tr>
<th>Source</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIT</td>
<td></td>
<td>5.736E-02</td>
<td>1</td>
<td>5.736E-02</td>
<td>2.421</td>
<td>.126</td>
</tr>
<tr>
<td>PCM</td>
<td></td>
<td>6.000E-02</td>
<td>1</td>
<td>6.000E-02</td>
<td>.943</td>
<td>.336</td>
</tr>
<tr>
<td>ID (POI)</td>
<td></td>
<td>1111.574</td>
<td>1</td>
<td>1111.574</td>
<td>7.310</td>
<td>.009</td>
</tr>
<tr>
<td>Tc (POI)</td>
<td></td>
<td>24.000</td>
<td>1</td>
<td>24.000</td>
<td>3.232</td>
<td>.078</td>
</tr>
<tr>
<td>A (POI)</td>
<td></td>
<td>8.560</td>
<td>1</td>
<td>8.560</td>
<td>.852</td>
<td>.360</td>
</tr>
<tr>
<td>C (POI)</td>
<td></td>
<td>70.042</td>
<td>1</td>
<td>70.042</td>
<td>3.944</td>
<td>.052</td>
</tr>
<tr>
<td>Ex (POI)</td>
<td></td>
<td>93.352</td>
<td>1</td>
<td>93.352</td>
<td>4.181</td>
<td>.046</td>
</tr>
<tr>
<td>Fr (POI)</td>
<td></td>
<td>60.167</td>
<td>1</td>
<td>60.167</td>
<td>7.779</td>
<td>.007</td>
</tr>
<tr>
<td>Nc (POI)</td>
<td></td>
<td>17.227</td>
<td>1</td>
<td>17.227</td>
<td>7.027</td>
<td>.011</td>
</tr>
<tr>
<td>Sa (POI)</td>
<td></td>
<td>59.116</td>
<td>1</td>
<td>59.116</td>
<td>4.031</td>
<td>.050</td>
</tr>
<tr>
<td>SAV (POI)</td>
<td></td>
<td>22.042</td>
<td>1</td>
<td>22.042</td>
<td>4.042</td>
<td>.050</td>
</tr>
<tr>
<td>Sr (POI)</td>
<td></td>
<td>2.449</td>
<td>1</td>
<td>2.449</td>
<td>.622</td>
<td>.434</td>
</tr>
<tr>
<td>S (POI)</td>
<td></td>
<td>23.338</td>
<td>1</td>
<td>23.338</td>
<td>3.539</td>
<td>.066</td>
</tr>
<tr>
<td>Sy (POI)</td>
<td></td>
<td>.782</td>
<td>1</td>
<td>.782</td>
<td>.702</td>
<td>.406</td>
</tr>
<tr>
<td><strong>Error</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIT</td>
<td></td>
<td>1.232</td>
<td>52</td>
<td>2.369E-02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCM</td>
<td></td>
<td>3.309</td>
<td>52</td>
<td>6.364E-02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID (POI)</td>
<td></td>
<td>7907.426</td>
<td>52</td>
<td>152.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tc (POI)</td>
<td></td>
<td>386.093</td>
<td>52</td>
<td>7.425</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (POI)</td>
<td></td>
<td>522.630</td>
<td>52</td>
<td>10.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C (POI)</td>
<td></td>
<td>923.481</td>
<td>52</td>
<td>17.759</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex (POI)</td>
<td></td>
<td>1160.981</td>
<td>52</td>
<td>22.327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fr (POI)</td>
<td></td>
<td>402.204</td>
<td>52</td>
<td>7.735</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nc (POI)</td>
<td></td>
<td>127.481</td>
<td>52</td>
<td>2.452</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sa (POI)</td>
<td></td>
<td>762.593</td>
<td>52</td>
<td>14.665</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAV (POI)</td>
<td></td>
<td>283.537</td>
<td>52</td>
<td>5.453</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr (POI)</td>
<td></td>
<td>204.630</td>
<td>52</td>
<td>3.935</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S (POI)</td>
<td></td>
<td>342.90</td>
<td>52</td>
<td>6.594</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sy (POI)</td>
<td></td>
<td>57.926</td>
<td>52</td>
<td>1.114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
### Doubly Multivariate Repeated Measures MANOVA - Follow-up Univariate

#### ANOVAs Continued

<table>
<thead>
<tr>
<th>Source</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIT</td>
<td>1.040E-02</td>
<td>1</td>
<td>.689</td>
<td>.410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCM</td>
<td>.926</td>
<td>1</td>
<td>17.911</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID (POI)</td>
<td>348.481</td>
<td>1</td>
<td>18.313</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tc (POI)</td>
<td>5.333</td>
<td>1</td>
<td>2.938</td>
<td>.092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (POI)</td>
<td>1.120</td>
<td>1</td>
<td>.461</td>
<td>.500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C (POI)</td>
<td>22.231</td>
<td>1</td>
<td>9.213</td>
<td>.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex (POI)</td>
<td>56.333</td>
<td>1</td>
<td>17.510</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fr (POI)</td>
<td>19.593</td>
<td>1</td>
<td>15.189</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nc (POI)</td>
<td>.231</td>
<td>1</td>
<td>.135</td>
<td>.715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sa (POI)</td>
<td>52.083</td>
<td>1</td>
<td>8.125</td>
<td>.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAV (POI)</td>
<td>5.787</td>
<td>1</td>
<td>2.932</td>
<td>.093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr (POI)</td>
<td>1.120</td>
<td>1</td>
<td>1.377</td>
<td>.246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S (POI)</td>
<td>28.009</td>
<td>1</td>
<td>11.891</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sy (POI)</td>
<td>9.259E-03</td>
<td>1</td>
<td>9.259E-03</td>
<td>.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time * Condition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIT</td>
<td>1.200E-03</td>
<td>1</td>
<td>.079</td>
<td>.779</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCM</td>
<td>5.926E-03</td>
<td>1</td>
<td>.115</td>
<td>.736</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID (POI)</td>
<td>12.000</td>
<td>1</td>
<td>.631</td>
<td>.431</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tc (POI)</td>
<td>7.259</td>
<td>1</td>
<td>3.998</td>
<td>.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (POI)</td>
<td>9.259E-03</td>
<td>1</td>
<td>3.227</td>
<td>.078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C (POI)</td>
<td>7.787</td>
<td>1</td>
<td>3.227</td>
<td>.078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex (POI)</td>
<td>2.370</td>
<td>1</td>
<td>.737</td>
<td>.395</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fr (POI)</td>
<td>1.333</td>
<td>1</td>
<td>1.034</td>
<td>.314</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nc (POI)</td>
<td>2.083</td>
<td>1</td>
<td>1.215</td>
<td>.275</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sa (POI)</td>
<td>2.083</td>
<td>1</td>
<td>.325</td>
<td>.571</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAV (POI)</td>
<td>8.333E-02</td>
<td>1</td>
<td>.042</td>
<td>.838</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr (POI)</td>
<td>8.333E-02</td>
<td>1</td>
<td>.102</td>
<td>.750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S (POI)</td>
<td>9.259E-03</td>
<td>1</td>
<td>.004</td>
<td>.950</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sy (POI)</td>
<td>.454</td>
<td>1</td>
<td>.873</td>
<td>.355</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
### Doubly Multivariate Repeated Measures MANOVA - Follow-up Univariate

**ANOVA As Continued**

<table>
<thead>
<tr>
<th>Source</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error (Time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIT</td>
<td></td>
<td>.785</td>
<td>52</td>
<td>1.510E-02</td>
</tr>
<tr>
<td>PCM</td>
<td></td>
<td>2.688</td>
<td>52</td>
<td>5.170E-02</td>
</tr>
<tr>
<td>ID (POI)</td>
<td></td>
<td>989.519</td>
<td>52</td>
<td>19.029</td>
</tr>
<tr>
<td>Tc (POI)</td>
<td></td>
<td>94.407</td>
<td>52</td>
<td>1.816</td>
</tr>
<tr>
<td>A (POI)</td>
<td></td>
<td>126.370</td>
<td>52</td>
<td>2.430</td>
</tr>
<tr>
<td>C (POI)</td>
<td></td>
<td>125.481</td>
<td>52</td>
<td>2.413</td>
</tr>
<tr>
<td>Ex (POI)</td>
<td></td>
<td>167.296</td>
<td>52</td>
<td>3.217</td>
</tr>
<tr>
<td>Fr (POI)</td>
<td></td>
<td>67.074</td>
<td>52</td>
<td>1.290</td>
</tr>
<tr>
<td>Nc (POI)</td>
<td></td>
<td>89.185</td>
<td>52</td>
<td>1.715</td>
</tr>
<tr>
<td>Sa (POI)</td>
<td></td>
<td>333.333</td>
<td>52</td>
<td>6.410</td>
</tr>
<tr>
<td>SAV (POI)</td>
<td></td>
<td>120.630</td>
<td>52</td>
<td>1.974</td>
</tr>
<tr>
<td>Sr (POI)</td>
<td></td>
<td>42.296</td>
<td>52</td>
<td>8.13</td>
</tr>
<tr>
<td>S (POI)</td>
<td></td>
<td>122.481</td>
<td>52</td>
<td>2.355</td>
</tr>
<tr>
<td>Sy (POI)</td>
<td></td>
<td>27.037</td>
<td>52</td>
<td>.520</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Summary

The preceding chapter reported the results of this investigation of the relationship between counselor education and moral development, conceptual development, and self-actualization. Descriptive statistics and data analyses of the specific research hypotheses were reported. It was noted that the counselor education students and comparison students exhibited increases on the measures of conceptual level and self-actualization. It was also noted that neither group of students increased on the measure of principled reasoning of moral judgment and that there was no significant interaction for the variable of time by condition. The next chapter will discuss the research findings and their implications.
CHAPTER FIVE
Discussion and Conclusions

This research was designed and implemented in an effort to investigate the psychological process the student experiences as he or she transitions through a counselor education program. Specifically, the study sought to determine whether there was a relationship between counselor training and the student's personal growth and development, particularly in the domains of moral judgment, conceptual complexity, and self-actualization.

This chapter will review the results presented in the preceding chapter and discuss the implications of the findings. Previous research will be referenced for the purposes of conveying the importance of the study's finding within the broader realm of counselor preparation. Research limitations will be identified, as well as recommendations for further research.

Discussion of Major Findings

The data for this longitudinal study was collected over nearly a two-year period in order to assess the effectiveness of the counselor preparation process in promoting students' personal development. The sample population consisted of the 32 students who accepted admission to the master's program in counselor education for the Fall 1995 admissions cycle. Students were assessed at three critical points: during the month prior to their first semester, the Fall of 1995 (Time 1), during the first several weeks of their second year in the program, the Fall 1996 semester (Time 2), and at the end of the Spring 1997 semester (Time 3). For the full-time counseling students (63%), Time 2 coincided with their enrollment in the counseling practicum, while Time 3 marked the month prior to graduation from the program. A comparison sample consisted of 28 students who accepted admission to the master's program in
educational leadership or special education for the 1996 admissions cycle. These students were assessed at the beginning of their entry into the respective master's programs (Time 2), and during the last month of the Spring 1997 semester (Time 3).

Two separate sets of statistical analyses were conducted. The first consisted of an analysis of the effect of time on the counselor education sample, with 3 levels of the independent variable (Times 1, 2, and 3). The results revealed no significant differences for the combined dependent variables, which consisted of the measures of conceptual level, principled reasoning, and self-actualization. In other words, according this analysis set, the counselor education students, as they progressed through the master's program, did not increase in conceptual level, in percentage of principled reasoning used in moral judgment, or self-actualization.

The second set of statistical analyses examined the relationship between the same dependent variables over time (Time 2 and 3) and by condition, comparing the counselor education students to the comparison group students. The results revealed a significant main effect for time. However, the main effect for condition and the time by condition interaction were not significant. Both groups increased in conceptual level and self-actualization (6 of the 12 indices of the POI) but did not show significant increases in percentage of principled reasoning used in moral judgment.

The essential question this research sought to investigate was whether a counselor education program was capable of promoting the personal growth and development of the students who participated in the educational process. The relevancy of this question to counselor training and the field of counselor education was examined in Chapter 2, in which much research was cited.
supporting cognitive developmental theorists' assertion that "higher is better." In theory, higher stages are said to be 'better' in that they offer more advanced "conceptual tools for making sense out of the world and deriving guides' for decision making" (Rest, 1994, p.16). With each higher stage, an individual makes ever more differentiated and complex adaptations to his or her environment, including the capacity to understand different perspectives and adequately problem-solve (Sprinthall & Thies-Sprinthall, 1983). Heath (1977) likened cognitive development to the concept of psychological maturity in that both constructs represent the ability to symbolize experience, to be self-directed, to be empathic, and to act on the basis of democratic values.

There is empirical support for the claim that "higher is better." Miller's (1981) review of over 60 studies which employed Hunt's Conceptual Systems Test as a measure of cognitive complexity found that higher cognitive levels are associated with the following behaviors: reduction in prejudice, more empathic communication, more internal locus of control, longer decision latencies, more flexible teaching methods, more autonomy and interdependence, and enhanced information processing skills. Holloway and Wampold's (1986) meta-analytic investigation of 24 studies that explored the relationship between cognitive complexity and counseling related tasks found that higher stage counselors were more accurate in empathic responding and labeling client affect.

Higher levels of moral judgment have been positively related to theoretically important counseling behaviors, including the ability to demonstrate empathy (Bowman & Allen, 1988; Bowman & Reeves, 1987), and linked to moral behavior. Based on a narrative review of 74 studies, Blasi (1980) concluded that there is substantial support for the hypothesis that moral
action and moral reasoning are positively related, including for such behaviors as resistance to conformity, delinquency, honesty, and altruism. Thoma (1985) concluded from his narrative review of studies using the DIT P-index to explore the relationship between moral reasoning and moral behavior that there is a statistically significant link between P-score and behavior, but that the magnitude of the relationship is not large.

The theory of self-actualization has been regarded by many as particularly relevant to counselor preparation. For many, the characteristics of the self-actualizing person, congruency of thought, feeling and behavior, represents the idealized goal of successful counseling outcome. Many theorists, researchers, and practitioners believe that the capacity of the counselor to facilitate the client's path towards self-actualization may be a function of the counselor's level of self-actualization (Foulds, 1969c).

The research literature concerning the relationship between the counselor's level of self-actualization and counseling behaviors appears to be inconclusive. Based on his findings that counseling students' ability to communicate empathy and genuineness was significantly related to more than half of the POI scales, Foulds (1969a) recommended that the POI be used as a selection device for counselor training programs. Selfridge and Vander Kolk (1976) found that the ability of school counselors to communicate the core facilitative conditions as perceived by both clients and trained raters was positively related to self-actualization. However, Winborn and Rowe (1972) closely followed Fould's research methodology but could not replicate Fould's findings. Likewise, Ritter (1984) found that both skills-training and an experiential group counseling course were effective in promoting the self-actualization of counselor education students as measured by the POI, but
students' level of self-actualization was not related to their ability to demonstrate facilitative conditions or initiative with role-play clients.

In response to the primary question this study sought to investigate, whether counselor education facilitates the development of student in the domains of conceptual complexity, moral judgment, and self-actualization, the results appear to be mixed. The first set of analyses failed to show any significant increases while the second set revealed significant gains in conceptual level and self-actualization, but not for percentage of principled reasoning used in moral judgment.

The contrasting findings between the analyses may possibly have been due to differences in statistical power. The statistical power of the second analyses set to detect a significant effect for time for the combined dependent variables was 1.00. In comparison, the statistical power of the first analysis set to detect a significant effect for time for the combined dependent variables was 0.92.

The first analyses set appeared to have less statistical power to detect an effect for time than the second analyses set for several reasons. The first analyses set had a small sample, consisting of the 27 counselor education students. The sample size is below 30 subjects, which, according to the central limit theorem, is generally the minimum number of subjects necessary to obtain a sampling distribution of the mean which will be approximately normally distributed (Kiess, 1989). In contrast, the sample size of the second analysis set also included the comparison students, making it twice as large and increasing the power to detect an effect for time. The other factor which probably contributed to decreased power for the first set of analyses was that there appeared to be a violation of the assumption of sphericity (see Chapter
Of course it is difficult to make a direct comparison of the results of the two sets of analyses as they involved different subjects, time periods, and effect sizes. For example, there is evidence that for the counselor education students the effect for time may have not been consistent between testing periods. The counselor education students' mean scores increased on 7 of the 14 dependent variables between Time 1 and Time 2, but increased on 12 of the dependent variables between Time 2 and Time 3. Time 1 scores were not included in the second set of analyses, which possibly contributed to its greater statistical power.

The greater power of the second analyses set, which compared the counselor education and comparison group students, would suggest that these findings are more valid. The validity for the finding that the counselor education and comparison students increased in conceptual level and self-actualization is strengthened by the large effect size found for the influence of time on conceptual level and the moderate to large associations identified between time and the POI scales.

The question becomes what was responsible for promoting increases conceptual level in the counselor education and the comparison group students? As a measure of cognitive developmental structure, the PCM is not affected over periods of 6 to 12 months by situational factors (Sprinthall & Scott, 1989). College education has been found effective in promoting conceptual level (Khalili & Hood, 1983), but there has been virtually no research on the impact of graduate education on cognitive complexity using the PCM as the measurement. Hunt et al. (1977) in fact did not believe that the PCM would be sensitive enough to detect developmental changes at higher levels and thus
would not detect developmental change in conceptual level in longitudinal studies of adult samples. Miller's (1981) meta-analytic study revealed that only specially designed and developmentally-oriented interventions have a positive effect on the PCM as an outcome measure. Thus, based on the research literature, it would seem that the graduate education programs studied are developmentally oriented, but how?

Over the past 25 years, cognitive developmentalists have conducted a series of field studies investigating whether cognitive-structural levels of development could be promoted through deliberate intervention and what were the essential components for promotion of growth. These efforts have resulted in the Deliberate Psychological Education (DPE) model, which has been found to be effective in promoting both principled reasoning and conceptual level, in addition to the acquisition of different helping skills, in counselor mentors (Peace, 1992), supervising teachers (Thies-Sprinthall, 1984), mentor teachers (Reiman, 1988; Reiman & Thies-Sprinthall, 1993), and preservice teachers (Reiman & Parramore, 1993; Watson, 1995).

The DPE model is comprised of those elements identified as necessary for cognitive structural change. It was Kohlberg (1976) who suggested that one of the primary factors of structural growth was the opportunity for social role-taking. In attempting to understand the attitude of another, the helper must set aside their ego to put oneself in the other's person place, which Kohlberg referred to as the "iron discipline of listening" (p 78). Assuming a (1) helping experience in a real world context, such as tutoring or counseling, provides the action to challenge the individual's preferred style of making sense of his or her environment, which is referred to in cognitive developmental theory as disequilibration. The helper must have opportunities to make sense of these
new experiences through (2) reflection. In the DPE model, this condition is met through "dialogue" journaling which is differentiated based on the learner's cognitive level. This reflection is guided in that the individual is engaged in meaning-making rather than simply divulging thoughts and feelings. The new experiences are sequenced with reflection and applied analysis activities each week for the purposes of achieving a (3) balance between action and reflection. The complex goal of modifying cognitive structures requires (4) continuous interaction between action and reflection, generally necessitating at least 6 and preferably 12 months of weekly meetings (Mosher & Sullivan, 1976). Finally, the supervisor must adeptly balance the participants' disequilibrium but not minimize the (5) challenge, while simultaneously providing (5) support through high levels of positive regard and accurate empathy in order to encourage participants' risk-taking (Reiman, 1995).

The mission of the school of education in which the educational programs studied were housed was to develop 'reflective practitioners'. The faculty sought to enhanced the reasoning processes and decision making capabilities. This mission to a large degree reflects the aim of the DPE model. In comparing the DPE model to the curriculum of the counselor education program and the special education and educational leadership programs it appears that these programs have many elements of the DPE Model.

In the counselor education program, the students engage in a new, (1) role-taking experience in a real world context, as school counseling students completed a 200 hour practicum, and community counseling students participated in two internships totaling 600 hours. Twenty-three (85%) of the counseling students completed the practicum or internship course between the second and third testing periods. The faculty of the counselor education
program engaged practicum students in (2) reflecting on the role-taking experience, during weekly group supervision sessions and several individual supervision sessions. Also, approximately half of the program faculty and doctoral students providing supervision utilize the "dialogue" journaling technique based on Flanders (1970) work, which is differentiated depending upon the needs of the learner. The weekly group supervision sessions, and the weekly "dialogue" journals, achieve a (3) balance between action and reflection. The counselor education program possibly achieved (4) continuity of action and reflection, in requiring a semester-long practicum for school counseling students and two continuous semesters of internship for community counseling students. Research indicates that the DPE Model can facilitate change for interventions that are one-semester long but that two-semesters are usually required for cognitive-structural growth (Mosher & Sullivan, 1976). Ten (37%) of the students were in the school counseling track which only requires an one-semester practicum. Thus, a sizable portion of the counselor education sample may not have received the necessary continuity to promote cognitive development. The faculty clearly provide (5) support to the program participants in that each utilizes a model of supervision that emphasizes active listening in assisting students to make meaning of their experience. In assuming the full responsibilities required of the complex role of counselor either in a school or agency setting, the students would appear to experience sufficient (5) challenge. Apparently, the one aspect of the counselor education program which may not meet the elements of the DPE model is the one-semester school counseling practicum which may not constitute a sufficient length of time to stimulate change in cognitive structures.

The educational leadership and special education programs also seem to
contain many of the elements of the DPE model. Most of the educational leadership and special education students completed a 3-month long practicum/internship by posttesting. During the practicum, the special education students received regular conferencing with their cooperating teacher and college supervisor, while educational leadership students had orientation and debriefing sessions with their on-site supervisor and university supervisor. The faculty of these programs also use a supervision approach that, in attempting to promote students' decision making through reflection, emphasizes meaning making in a supportive environment. Although the counselor education program appears to be more explicitly similar to the DPE model, the comparison educational programs appear to be more similar to the counselor education program than different.

The finding suggest the counselor education program and the educational programs comprising the comparison groups had similar effects on the dependent variables. Both groups showed a significant increase in conceptual level and self-actualization over time and there was not a significant interaction for time by condition. The findings imply that it is graduate education as a whole, rather than counselor education in particular, which is responsible for promoting personal development in the domains of conceptual level and self-actualization.

The interpretation that graduate education and counselor education have similar strength for positive effects on students' conceptual level and self-actualization should be viewed with caution for several reasons. The statistical power to detect an effect for condition (power = .747) and the time by condition interaction (power = .643) was quite low, particularly in comparison to the perfect power (1.00) for identifying the significant effect for time. Additionally,
the groups were dissimilar in several major aspects. The time of the educational period was different between the groups as the counselor education students' scores for their second year in their master's program were compared to the scores obtained from the special education and educational leadership students over the course of their first year in their respective master's programs. The lack of a true pretest for the comparison group prevented conducting statistical analysis to identify if there were preexisting differences between the groups. Simply looking at the means for the initial testing periods, which was Time 1 for the counselor education students and Time 2 for the comparison group, reveals that the counselor education students had higher mean scores on each of the instruments. This makes direct comparison difficult, raising possibilities such as differential impact for graduate education with students at higher levels of development.

Although the results suggest that the counselor education program facilitated gains in conceptual level and self-actualization, the findings raise several concerns. The conceptual level obtained by counselor education students may not be sufficient to fulfill the complexity of the counseling role. At posttesting the vast majority of counselor education students (85.2%) scored at the high conceptual level (above 2.0). However, the mean score was 2.12, which, according to Hunt's (1971) model, suggests that many of the counselor education students are only marginally capable of high level conceptualizations. According to Sprinthall (1989), who developed a model of counselor characteristics equivalent to Hunt's levels of conceptual development, counselor development comprises a specific domain that requires not only the capacity for high level conceptualizations but also training in skill development. Counselor development is likely to lag behind conceptual
development. Thus, for many of the counselor education students at posttesting who are only marginally capable of high level conceptualizations, they are theoretically unlikely to consistently display the counselor characteristics of the stage of Sprinthall's counselor development equivalent to that of the high conceptual level stage. This argument is highly speculative as research has not been conducted to determine what levels of conceptual level are required of the person of the counselor to facilitate client growth.

The self-actualization level of the counselor education students appears to be substantial. The counselor education students' mean scores were higher than that of the relatively self-actualizing sample, which used to establish construct validity for the instrument (Shostrom, 1974), on 5 of the 12 POI scales at pretesting, and 8 of the scales at posttesting. The finding that students increased in self-actualization is consistent with the research literature. A variety of educational interventions traditionally utilized in graduate counseling programs, including skills-training courses (Ritter, 1984), groups counseling courses using an encounter format (Ritter, 1984; Johnson & Johnson, 1979), and marathon groups (Johnson & Johnson, 1979) have been found to be effective in promoting gains in graduate counseling students.

The most critical concern revealed by the findings is that the counselor education program did not facilitate increased percentage of principled reasoning used in moral judgment. Counselors are frequently confronted with ethical dilemmas that involve balancing such competing interests as the rights of the client versus the rights of the community, promoting the client's welfare versus the client's right to autonomy and the importance of informed consent, etc. Although professional codes of ethics provide general standards, these guidelines are not sufficiently explicit to manage every situation (Corey, Corey,
& Callanan, 1993). Given the ambiguity inherent in ethical dilemmas counselors encounter and the limited ability of ethical codes to offer clear courses of action it would seem that the ability of the counselor to comprehend the ethical principles contained within a dilemma would be essential for ethical practice. Kitchener (1986) argues that counselors must have the thinking tools to critically evaluate and interpret ethical codes, proposing that counselor education program implement an integrated curriculum for the purposes of developing moral judgment.

The results suggest that many of the counselor education students would have difficulty conceptualizing the ethical principles of the dilemmas frequently encountered in counseling practice. Rest and Narvaez (1994) state that a DIT P scores below 0.50 indicates that the person is generally not conceptualizing moral problems by "determining what is morally right from the perspective of a society that balances the interests of its participants, optimizes the stake of each participant in supporting that society, and eliminates arbitrary advantages or influence" (p. 214). At posttesting, nearly half (48.1%) of the counselor education students has P scores below 0.50. According to Rest and Narvaez (1994), such low scoring students lack the cognitive structure to recognize the ethical principles behind such intermediate-level concepts as informed consent and privileged confidentiality. Thus, such students learn principled solutions to ethical problems through rote learning, and they will have difficulty extending the principles to cases other than those specifically taught.

The lack of development in principled reasoning among the students is difficult to explain. The empirical literature indicates that standard academic classes in teacher education (Oja & Sprinthall, 1978; Sprinthall & Bernier, 1979) and graduation from a medical or veterinary studies program (Self &
Baldwin, 1994) are not associated with increased principled reasoning among students. However, most intervention studies which have employed the DPE model and have used the DIT and PCM as measurements have found the intervention to be effective in promoting both the principled reasoning and conceptual level of subjects (Watson, 1995; Reiman & Thies-Sprinthall, 1993; Peace, 1992; Oja & Smulyan, 1989; Sprinthall & Scott, 1989; Reiman, 1988; Thies-Sprinthall, 1984). Other DPE interventions have identified significant gains on the DIT but not for the PCM (Morgan, 1998; Reiman & Parramore, 1993), while none have found the opposite. Peace (1992) found that counselor mentors increased in principled reasoning after one-semester of a DPE intervention whereas significant gains on the PCM were only identified after two-semesters. Pease suggested that because the PCM requires original thinking, as participants respond using their own words, it necessitates greater psychological effort in order to identify measurable gains than the DIT, which only requires the ability to recognize more complex reasons. Thus, the finding that student's conceptual level increased but principled reasoning did not is surprising.

There are at least several possible explanations for the finding that conceptual level increased but principled reasoning did not. One possible explanation is that although the educational programs had many of the DPE elements, they may have lacked an element that was specific to development of moral reasoning. Rest's (1986b) meta-analysis of 55 intervention programs to promote principled reasoning on the DIT found that the "dilemma discussion" method, which provides "concentrated practice in moral problem-solving, stimulated by peer give-and-take" (p. 79), produced slightly larger effect sizes than interventions using the DPE model. Although the DPE model does not
explicitly include value-dilemma discussions, some DPE studies, such as Morgan's (1998), have used value-dilemma discussions.

Another possible explanation as to why conceptual level increased whereas moral reasoning did not is because the conceptual domain may be more closely related to the primary task at hand for graduate students. Lee and Snarey (1988) suggest that Erickson's model of the life cycle provides an integrative perspective for understanding the relationship between domains of cognitive development. According to Erickson's psychosocial theory, development consists of progressive resolution of conflicts. The nature of the conflict changes across the life span, with such conflicts including intimacy vs. isolation, identity vs. role confusion, etc. Successful resolution of the conflict does not completely eliminate the conflict but rather provides the individual with strength to approach the succeeding conflict. The results of Lee and Snarey's (1988) study of 9 previous studies that investigated the relationship between stages of ego and moral development are consistent with Erickson's framework. The findings suggest that neither the domain of ego development or moral development is primary, meaning "that stages of one construct consistently precede parallel stages of the second construct during development" (p.173). For adolescents, the modal youth was likely to score at an ego stage that was higher than her or his moral stage, while in the early adult and middle adulthood years the modal individual was likely to exhibit parallel stages. They concluded that at some periods in the life cycle, moral progression takes precedence, and that for other periods, ego development is preeminent. It may be that other cognitive developmental domains, including conceptual complexity, act in a similar fashion.

Conceptual complexity may take precedence over moral reasoning for
graduate students in education. The student's primary challenges consist of comprehending theories of learning and human development and developing the skills for theory implementation. During the role-taking experience, the primary focus is on the acquisition and demonstration of the basic skills required for the role of serving the needs of students or clients.

Although the domain of conceptual complexity may be more relevant to the role of students learning to be professionals in counseling and education, clearly the moral development domain plays a critical part in the role of these professional groups and requires increased attention. In the educational programs in this study, opportunities for moral problem-solving tend to be of a hypothetical nature, involving in-class discussion of abstract principles and case examples. Incorporation the dilemma discussion format, which Rest's (1986b) meta-analysis revealed had a slight edge over DPE interventions in promoting principled reasoning, may serve to enhance a possibly overlooked domain of graduate student development.

It should be cautioned that educational programs using the dilemma discussion method may risk introducing a possible confound. It is not altogether clear but it seems that a standard part of the dilemma discussion method involves exposure to Kohlberg's theory. Rest (1986b) found evidence that possibly suggests that exposure to Kohlberg's theory, which has also been done in some studies which used the DPE model, may contaminate posttesting, although the relationship is not clear. Thus, although exposing students to Kohlberg's theory may be a powerful educational tool, it may not be recommended for studies that are seeking to assess change in moral development.

A similar but slightly different argument from the assertion that the
conceptual complexity domain has more relevancy to the challenges of graduate school in education than does the domain of moral reasoning, is that conceptual complexity has primacy. The essence of the "primacy" or "decalage" hypothesis made by many cognitive developmental theorists is that the stages of one cognitive developmental domain precede corresponding stages of another domain of cognitive development. This argument is connected to the notion that advances in certain domains of development are "necessary but not sufficient" for advances to occur in other domains of cognitive development. For example, research suggests that attainment of a moral stage first requires attainment of the parallel stage in Piaget's cognitive development domain (Snarey, 1986; Walker, 1980; Kohlberg, 1976). Kohlberg (1976) theorized that cognitive development does not directly lead to advances in moral development because advancement in moral stages also require opportunities for role-taking.

It may be that the domain of conceptual complexity has primacy over moral development. Harvey, Hunt, and Schroder (1961), the founding theorists of Conceptual Systems Theory, conceptualized the conceptual complexity domain as distinct from Piaget's cognitive developmental domain. However, there are such striking similarities between the domains that the PCM and Piagetian measures are considered by some cognitive developmental researchers, such as Sprinthall and Scott (1989), to be measures of intellectual growth. Thus, the finding that Piagetian cognitive development is necessary for moral development may also apply to conceptual complexity. It is possible that the graduate students' increases in conceptual level make possible future gains in moral development, say to the principled stages. This development might occur at a later date when as professionals the subjects more frequently
encounter real-life moral dilemmas. The concern of course would be that the environment would not offer opportunities for reflection for the individual to make sense of the experience. Follow-up testing might have revealed gains in principled reasoning. It should be noted that Lee and Snarey's (1988) results, which suggest that neither ego or moral development is primary but rather that they take precedence at different points in lifespan development, do no support the primacy or decalage hypothesis.

The possible explanations offered as to why conceptual increased but moral development are only possible explanations and must be viewed with caution. The relationship between the graduate students' stage of conceptual level and moral development is difficult to evaluate since the P-Index of the DIT does not assess the subject's stage of moral development. The primacy and preeminence arguments are based on research which compare parallel stages of domains. Additionally, these arguments have been extended to conceptual complexity based on research on other cognitive developmental domains. Conceptual complexity has not received as much attention as have the domains of moral development, ego development, and Piaget's cognitive development.

Limitations of the Study

The preceding section reviewed and discussed the study's findings. The first analyses set found no significant differences for the counselor education students between their entry into the program and a year-and-a-half later. The second analyses set which compared the counselor education students and the comparison group students between the beginning and end of the counselor education students' second year in the program found that both groups increased in conceptual level and self-actualization (6 of the 12 POI
indices). The groups did not increase in percentage of principled reasoning used in moral judgment and there was not a significant interaction for the time by condition variable.

Several limitations in this research design and methodology may have influenced this study and the research findings. These include: (a) research design, (b) nature of the sample, and (c) measurement instruments.

Research Design

The comparison group was sub-optimal in several major respects. For one, the comparison did not constitute a control group since the sample consisted of students in a graduate program in education which may promote cognitive development. However, research suggests that two of the instruments employed in this study, the PCM and the DIT, are not affected over periods of 6 months to 12 months by regular school instruction or situational factors (Sprinthall & Scott, 1989). A historical threat was introduced in that the counselor education students’ scores for their second year in the master’s program were compared to the comparison student’s scores for their first year in their respective master’s programs. The lack of a pretest for the comparison sample prevented determination of preexisting differences between the groups, which probably existed since at the initial testing the mean scores for the counselor education students were higher on each scale than the comparison students’.

Nature of the Sample

Experimental mortality may have posed a threat to validity in that the attrition rate was greater for the counselor education sample. Of the 32 counselor education students who initially accepted admission the program, 5 failed to complete all of the research instruments. In contrast, only one of the 28
comparison group students was not included in the statistical analyses.

There is evidence to suggest that the small sample sizes limited the power to detect possible effects. For the 3 statistical analyses conducted which had less than 30 subjects, which raises the likelihood that the sampling distributions of the mean were not approximately normally distributed (Kiess, 1989), effects were not detected. The statistical power of these 3 statistical analyses was lower, and in some cases much lower, than the only analysis conducted which had more than 30 subjects.

Future research should attempt to assess a larger number of subjects. Also, future studies should employ a comparison group which has more similar semester hour requirements to the targeted population and be assessed at the same point in time. These recommendations would likely minimize the threat of history to internal validity and enhance statistical power.

**Measurement Instruments**

As with any instrument there is the possibility for measurement error. The three measurement instruments employed in this study have empirical support for their use in research investigations, which was reported in Chapter 3.

The PCM was the only semi-projective method used. Rater reliability was not determined. However, the rater received training at the Ontario Institute for Studies in Education, which has been found to consistently yield interrater reliabilities of .86 (Hunt et al., 1977).

In considering the lack of significance found for principled reasoning, it is unknown if this lack of change is due to the inadequacies of the measure selected, the lack of power, or if there really were no changes in percentage of principled reasoning used in moral judgment. The P-index of the DIT represents only the individual's use of principled reasoning which
characterizes the thought of the post-conventional level, the highest level in Kohlberg's theory of moral development. It is conceivable that counselor education students did increase in moral judgment but only to stages below that of the post-conventional level. Future studies employing the DIT should also utilize the N-index which measures the degree to which an individual utilizes principled reasoning and does not use lower stage reasoning.

Suggestions for Further Research

A review of the empirical literature indicated that there is a lack of research examining the effectiveness of counselor preparation process. This study was conducted to contribute to understanding the personal development of students who participate in the counselor education process. The results are mixed but more likely suggest that students in counselor education experience increases in conceptual level and self-actualization but not in percentage of principled reasoning used in moral judgment. The results also suggest that students in graduate programs in education other than counselor education increase in these same domains.

In an era of decreasing educational funding and increasing demands for accountability, the profession of counselor preparation must offer evidence that it is effective in preparing counselors. Further research is necessary to validate the findings that counselor education programs are effective in promoting conceptual level and self-actualization. Replication using cognitive developmental measurements that yield modal stage scores might enhance understanding how the results fit within the cognitive developmental framework. Since research suggests that development in certain domains of cognitive development enable development in other domains (Snarey, 1986; Walker, 1980; Kohlberg, 1976), follow-up testing should be included in studies.
assessing more than one domain of cognitive development. Also, future studies should investigate whether developmental gains are directly related to enhanced counseling performance. Further research is needed to explore whether systematic incorporation of the DPE model into a counselor education program would lead to greater gains in conceptual level and would promote increases in percentage of principled reasoning used in moral judgment. Finally, further research is needed on the DPE model to determine if the dilemma discussion method is an essential element for promoting principled reasoning.

In the past several decades, the topic of adult development has received increasing attention within the field of cognitive development (Mines & Kitchener, 1986). Stage models of adult development have been validated and the present focus has been on the design and implementation of interventions for facilitating growth. Adult development would seem particularly relevant to the counseling profession which has traditionally rejected the medical model's focus on remediation in favor of a humanistic model that emphasizes growth. Counselor education would appear to be the logical site for interventions aimed at both enhancing student's personal development and teaching students how to promote client development.

Conclusion

The previous section has reviewed the study's findings and discussed the implications of the results. Although the results are somewhat mixed, the study makes several contributions to the research literature. This research is apparently the first to study and suggest that counselor education and graduate education, independent from specific developmental interventions, facilitate increases in conceptual level. These findings contradict Hunt et al.'s (1977)
assertion that the PCM would not have the necessary sensitivity to detect change in a longitudinal study of adults. The lack of significant increases in percentage of principled reasoning used in moral judgment contradicts the literature on DPE interventions, which the counselor education and special education and educational leadership programs in this study are similar to many in respects.

The results of this study suggest that the counselor education program fulfills the Council for Accreditation of Counseling and Related Programs’ (CACREP, 1994) mandate that counselor preparation programs encourage students to participate in activities that contribute to their personal development. The apparent challenge to counselor educators is to maintain this developmental focus while integrating strategies that will also enhance moral development. Counselor educators are obligated to accept this challenge in order to provide students with the cognitive and moral maturity required to deal with society’s increasingly complex problems and dilemmas. Roger’s (1957) assertion that it is more what counselors are than what they know that makes the biggest difference sounds on the surface to be simplistic. However, ultimately it seems that it is counselors’ use of self which is their primary tool. This tool, of course, must be developed.
Dear Fellow Graduate Student:

As part of a study focusing on "Whether Graduate Education Programs facilitate personal growth and development in students," your input is vital.

Please help me by agreeing to be one of the subjects for this study. It will require a maximum of an hour and a half of your time at two different points but will be invaluable in generating much needed information about the effectiveness of these programs.

Enclosed you will find three assessment instruments. Replies are anonymous, however, you are requested to code each instrument with the last six digits of your social security number. All results will be held in strict confidence.

In return for you participation in this study, I will be glad to furnish you with your assessment results, interpretive information, and the results of this study.

Thank you very much for agreeing to take part in this investigation. As a fellow graduate student, I know how scarce your free time is, and I appreciate your cooperation.

Sincerely,

Jered Kolbert
GRADUATE EDUCATION AND MORAL DEVELOPMENT,
CONCEPTUAL DEVELOPMENT AND SELF-ACTUALIZATION

CONSENT FORM

I, ______________________________________________ am willing to participate in a study of individuals who are students in a graduate education program. I understand that this study is being conducted by Mr. Jered Kolbert, a doctoral candidate in counseling at the College of William and Mary, to explore the relationship between graduate education and student development in the areas of moral development, conceptual development, and self-actualization. My involvement in this study will be approximately one and a half hours.

As a participant in this study, I am aware that I will be asked to complete demographic/personal information questionnaire, and three research instruments: the Defining Issues Test (DIT), Paragraph Completion Method (PCM), and the Personal Orientation Inventory (POI). I will be asked to complete the three research instruments in the beginning of the Fall 1995 and 1996 semesters, and near the end of the Spring 1997 semester. I will be asked to complete the demographic/personal information questionnaire near the end of the Spring 1997 semester.

As a participant in this study, I am aware that participation is voluntary and that I may choose to withdraw at anytime during the experiment. I may also choose to have debriefing counseling from Mr. Kolbert at the conclusion of the study. I also understand that written summary of my personal test results, interpretive material, and results of the study will be mailed to me upon request, and by doing so, I waive my right of anonymity to Mr. Kolbert.

By participating in this study, I understand that there are no obvious risks to my physical or mental health.

Confidentiality Statement

As a participant in the study, I am aware that all records will be kept confidential. I will be identified only by the last six digits of my social security number.

I fully understand the above statements, and do hereby consent to participate in this study.
Last six digits of your Social Security Number (for instrument matching purposes only) ______ ______ ______ ______ ______ ______

Age (in years): ______

Gender: Male ______
        Female ______

Race:
        _____ African American
        _____ Asian American
        _____ Caucasian/European American
        _____ Latin American/Hispanic
        _____ Native American/Pacific Islander
        _____ Other (please specify): ______________________________________

Marital status (check all that apply):
        _____ never married
        _____ married
        _____ unmarried, living with someone in a committed relationship
        _____ divorced
        _____ separated
        _____ widowed

What do you consider your sexual orientation to be?
        _____ heterosexual       _____ homosexual       _____ bisexual
How many credits will you have completed in your graduate program at William and Mary at the end of the current semester?

______ Number of credits

Setting(s) in which you completed a practicum or internship? (check all that apply):

______ elementary school
______ middle school
______ secondary school
______ hospital
______ community mental health center
______ private counseling practice
______ other public or not-for-profit agency
______ other (please specify):______________________________________________

Educational status for majority of the time as a graduate student:

______ part-time status (one or two classes per semester)
______ full-time status (three or more classes per semester)

How important is religion/spirituality in your life? (Circle on Scale 1-5)

1-Not Important 2 3 4 5-Extremely Important

Were you raised by one or more biological parent?

______ No ________ Yes
During your life, have you experienced (Check all that apply):

_____ Death(s) in your immediate family

Please specify relationship(s)? ________ | ________ | ________

What was your age at the time? ________ | ________ | ________

_____ Suicide(s) in your family

Please specify relationship(s)? ________ | ________ | ________

What was your age at the time? ________ | ________ | ________

_____ Murder in your family

Please specify relationship(s)? ________ | ________ | ________

What was your age at the time? ________ | ________ | ________

_____ Separations in family (Check all that apply):

______ Parents separated or divorced

______ One parent left in the family

_____ Serious illness in family

Please specify relationship(s)? ________ | ________ | ________

What was your age at the time? ________ | ________ | ________

_____ Family member placed in institution (prison, mental institution, etc.)

Please specify relationship(s)? ________ | ________ | ________

What was your age at the time? ________ | ________ | ________

_____ Please note any other life events which you consider significant:

Event(s)/Your age(s): _________________________________

_________________________________________________
How many times did you move before 18 years of age?: ____________

How many of these moves were:

--- within the same school district?_______
--- outside of the school district but within the same state?_______
--- to another state?_______
--- to another country?_______

Below is a list of problems which sometimes occur in a person's life. Please check all that apply to you:

_____ Alcohol/Drug Abuse by father
_____ Alcohol/Drug Abuse by mother
_____ Alcohol/Drug Abuse by brother or sister
_____ Alcohol/Drug Abuse by you

For the following five questions, please circle all types of abuse that are applicable:

_____ Physical/Emotional/Sexual Abuse between parents
_____ Physical/Emotional/Sexual Abuse between parent and sibling
_____ Physical/Emotional/Sexual Abuse between involving you and a spouse/partner
_____ Family of origin struggled for enough money for food, clothing, housing
Have you ever participated as a client in counseling/psychotherapy?

_____ Yes

_____ No

_____ Participated before enrolling in graduate education program

_____ Participated during enrollment in graduate education program

Participated in:

_____ Individual therapy. Approximate number of sessions ______

_____ Group therapy. Approximate number of sessions ______

_____ Marriage/Couples therapy. Approximate number of sessions ______

_____ Family therapy. Approximate number of sessions ______

_____ Other, please specify ____________________________

Approximate number of sessions ______

Presenting issue(s) in counseling/psychotherapy: ______________________

_________________________________________________________________

_________________________________________________________________
REQUEST FOR STUDY RESULTS

Check all that apply:

_______ I would like to receive results of this study when it is completed.

_______ I would like to receive the results of my personal assessments and understand that by requesting this I will not be able to maintain my anonymity. The last six digits of my social security number are:

________ ______ ______ ______ ______ ______

Name____________________________________

Address________________________________

_____________________________________

_____________________________________

_____________________________________

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
This questionnaire is aimed at understanding how people think about social problems. Different people often have different opinions about questions of right and wrong. There are no "right" answers in the way that there are right answers to math problems. You will be asked to give your opinion concerning several problem stories. Here is a story as an example:

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacations trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. Below there is a list of some of these questions.

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

Part A: (sample solution)

Importance:
Great Much Some Little No

--- --- --- --- ---
1. Whether the car dealer was in the same block as where Frank lives?
2. Would a used car be more economical in the long run than a new car?
3. Whether the color was green, Frank's favorite color.
4. Whether the cubic inch displacement was at least 200.
5. Would a large, roomy car be better than a compact car?
6. Whether the front fenders were differential.

Part B: (sample question)

From the list of questions and considerations above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd, and 4th most important choices.

--- --- --- --- ---
Most important
Second most important
Third most important
Fourth most important
Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against the use of the military in international disputes and to speak out against some of the school's rules, like the rule forbidding boys to wear long hair.

When Fred started his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organized protests against the Hair regulation and other school rules. Angry parents objected to Fred's opinions. They phoned the principal telling him that the newspaper was unpatriotic and should not be published. As a result of the rising excitement, the principal ordered Fred to stop publishing. He gave as a reason that Fred's activities were disruptive to the operation of the school.

Should the principal stop the newspaper? (Check One)

_______ Should stop it

_______ Can't decide

_______ Should not stop it
### NEWSPAPER

<table>
<thead>
<tr>
<th>GREAT importance</th>
<th>MUCH importance</th>
<th>SOME importance</th>
<th>LITTLE importance</th>
<th>NO importance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **1.** Is the principal more responsible to students or to parents?
- **2.** Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
- **3.** Would the students start protesting even more if the principal stopped the newspaper?
- **4.** When the welfare of the school is threatened, does the principal have the right to give orders to students?
- **5.** Does the principal have the freedom of speech to say "No" in this case?
- **6.** If the principal stopped the newspaper, would he be preventing full discussion of important problems?
- **7.** Whether the principal's order would make Fred lose faith in the principal.
- **8.** Whether Fred was really loyal to his school and patriotic to his country.
- **9.** What effect would stopping the paper have on the student's education in critical thinking and judgment?
- **10.** Whether Fred was in any way violating the rights of others in publishing his own opinions.
- **11.** Whether the principal should be influenced by some angry parents when it is the principal who knows best what is going on in the school.
- **12.** Whether Fred was using the newspaper to stir up hatred and discontent.

From the list of questions above, select the four most important:

- **Most important**
- **Second most important**
- **Third most important**
- **Fourth most important**
ESCAPED PRISONER

A man had been sentenced to prison for ten years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For eight years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day Mrs. Jones, an old neighbor, recognized him as the man who had escaped from prison eight years before and for whom the police had been looking.

Should Mrs. Jones report Mr. Thompson to the police and have him sent back to prison? (Check one)

______ Should report him

______ Can't decide

______ Should not report him
### ESCAPED PRISONER

On the left-hand side of the page check one of the spaces by each question to indicate its importance.

<table>
<thead>
<tr>
<th>GREAT importance</th>
<th>MUCH importance</th>
<th>SOME importance</th>
<th>LITTLE importance</th>
<th>NO importance</th>
</tr>
</thead>
</table>

1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?

2. Every time someone escapes punishment for a crime, doesn't that just encourage more crime?

3. Wouldn't we be better off without prisons and the oppression of our legal system?

4. Has Mr. Thompson really paid his debt to society?

5. Would society be failing what Mr. Thompson should fairly expect?

6. What benefits would prisons be apart from society, especially for a charitable man?

7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison?

8. Would it be fair to all the prisoners who have to serve out their full sentences if Mr. Thompson was let off?

9. Was Mrs. Jones a good friend of Mr. Thompson?

10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances?

11. How would the will of the people and the public good best be served.

12. Would going to prison do any good for Mr. Thompson or protect anybody?

From the list of questions above, select the four most important:

- **Most important**
- **Second most important**
- **Third most important**
- **Fourth most important**
HEINZ AND THE DRUG

In Europe a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and began to think about breaking into the man's store to steal the drug for his wife.

Should Heinz steal the drug? (Check one)

_____ Should steal it

_____ Can't decide

_____ Should not steal it

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
HEINZ STORY

<table>
<thead>
<tr>
<th>GREAT importance</th>
<th>MUCH importance</th>
<th>SOME importance</th>
<th>LITTLE importance</th>
<th>NO importance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the left-hand side of the page check one of the spaces by each question to indicate its importance

1. Whether a community's laws are going to be upheld.

2. Isn't it only natural for a loving husband to care so much for his wife that he'd steal?

3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?

4. Whether Heinz is a professional wrestler, or has considerable influence with professional wrestlers.

5. Whether Heinz is stealing for himself or doing this solely to help someone else.

6. Whether the druggist's rights to his invention have to be respected.

7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.

8. What values are going to be the basis for governing how people act towards each other.

9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.

10. Whether the law in this case is getting in the way of the most basic claim of any member of society.

11. Whether the druggist deserves to be robbed for being so greedy and cruel.

12. Would stealing in such a case bring about more total good for the whole society or not.

From the list of questions above, select the four most important:

Most important
Second most important
Third most important
Fourth most important
PARAGRAPH COMPLETION METHOD

On the following pages you will be asked to give your ideas about several topics. Try to write at least three sentences on each topic.

There are no wrong or right answers so give your own ideas and opinions about each topic. Indicate the way you really feel about each topic, not the way others feels or the way you think you should feel.

In general, spend about 3 minutes for each stem.
1. What I think about rules . . .
2. When I am criticized...
3. What I think about parents...
4. When someone does not agree with me . . .
5. When I am not sure...
6. When I am told what to do...


students' level of ego development and perceptions of clients. Counselor
Education and Supervision, 36, 36-49.

trainee empathy. Counseling and Values, 32, 144-146.

Bowman, J. T., & Reeves, T. G. (1987). Moral development and empathy
in counseling. Counselor Education and Supervision, 26, 293-298.

Brainerd, C. J. (1978). The stage question in cognitive-developmental
theory. The Behavioral and Brain Sciences, 2, 173-213.


Bryant, P.E. (1972). The understanding of invariance by very young


implications for cross-cultural studies. Human Development, 18, 35-49.


Buss, A. R. (1979). Humanistic psychology as liberal ideology: The socio-
historical roots of Maslow's theory of self-actualization. Journal of Humanistic

Press.


Resources Development Press.


Vita

Jered Benjamin Kolbert

Birthdate: December 10, 1969
Birthplace: Middletown, Connecticut
Education:

1994-1998  The College of William and Mary
           Williamsburg, Virginia
           Education Specialist

1993-1994  Kean College of New Jersey
           Union, New Jersey
           Master of Arts

1988-1992  Rutgers College, Rutgers University
           New Brunswick, New Jersey
           Bachelor of Arts

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.