A study of the effect of field-dependence/independence on student ratings of faculty at the community college level.

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A STUDY OF THE EFFECT OF FIELD-DEPENDENCE/
INDEPENDENCE ON STUDENT RATINGS OF FACULTY AT THE
COMMUNITY COLLEGE LEVEL

A Dissertation Presented
by
MARY ANNE NALLY SELF

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

February 1983

Education
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ABSTRACT

A Study of the Effect of Field-Dependence/Independence on Student Ratings of Faculty at the Community College Level

February 1983

Mary Anne Nally Self, B. S. Boston College, M. Ed., Harvard University, D. Ed., University of Massachusetts

Directed by: Dr. R. Mason Bunker

The purpose of this study was to assess the influence of field-dependence/independence of community college students upon the overall ratings assigned by students to their instructors. In addition, the question of whether students of varying degrees of field-dependence/independence respond significantly differently to specific rating items was addressed. A third research concern was to attempt to determine if the sex of community college students was a significant factor in evaluation of faculty.

The sample consisted of 488 students (157 males, 331 females) and 14 faculty (7 males, 7 females) at a large urban community college. The Group Embedded Figures Test was used to determine degree of field-dependency/independency of the subjects. A faculty evaluation instrument compiled for this study consisted of Section 1: collection of demographic data; Section 2: 4 very general rating items, Section 3: 36 specific rating items; and Section 4: the Massachusetts Community College system's evaluation form.
The data was analyzed using the Johnson-Neyman technique with the Potthoff modification and analysis of variance. Results of the analyses of data from two of the three evaluation sections indicated that strongly FD students with GEFT scores of 0-4 rated FD faculty significantly higher than FI faculty. Analyses of variance were utilized to analyze data from the specific evaluation section. The results were mixed but did show that FD students consistently assign higher ratings than FI students. Results from the application of the Johnson-Neyman technique to the data showed that strongly FD female students (0-8) gave significantly higher ratings to FD faculty than to FI faculty on the Massachusetts Community College evaluation section (p=.05). Male students consistently gave lower ratings to all faculty than did female students. Male and female students did not appear to differ significantly in their ratings of FI faculty.
TABLE OF CONTENTS

ACKNOWLEDGMENT .......................................................... iv

Chapter

I. INTRODUCTION AND STATEMENT OF THE PROBLEM ........ 1

              Purpose of the Study ........................................ 4
              Significance of the Study .................................... 5
              Delimitations of the Study .................................. 7

II. REVIEW OF THE LITERATURE ....................................... 9

                Nature of Cognitive Style ................................. 9
                Development of the Field-Dependent/Independent Concept .. 11
                Field-Dependence/Independence and Interpersonal Behavior ... 17
                Cognitive Style and Evaluation of Faculty at the Post-Secondary Level ... 21

III. RESEARCH METHODS ................................................. 28

              Subjects .................................................... 28
              Instrumentation ............................................. 28
              Data Collection .............................................. 32
              Data Analysis ................................................ 33

IV. RESULTS .................................................................... 37

              Null Hypothesis I ............................................. 38
              Null Hypothesis II ............................................. 45
              Null Hypothesis III .......................................... 46

V. SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS ... 52

              Summary of the Study ......................................... 52
              Discussion ...................................................... 53
              Conclusions ................................................... 62
              Recommendations ............................................. 63
              Suggestions for Further Research ............................ 65

REFERENCES ................................................................. 68

APPENDIX

A. Faculty Evaluation Instrument ................................... 73
B. Consent Form .......................................................... 80
LIST OF TABLES

1. Range of Student Group Embedded Figures Test Scores (GEFT).......................... 37
2. Range of Faculty Group Embedded Figures Test Scores (GEFT).......................... 38
3. Correlations for Student GEFT Scores and z Score Rating for Field-Dependent and Field-Independent Faculty on the Three Sections of the Evaluation Instrument ......................... 44
4. Results of a One-Way Analysis of Variance on the Ratings of Field-Dependent, Mid-Range and Field-Independent Students on Each of the Five Scales of the Specific Evaluation Section .... 47
5. Summary of Correlations (Pearson Product Moment) Between Male and Female GEFT Scores and the z Score Ratings Assigned Field-Dependent and Field-Independent Faculty on the Three Sections of the Evaluation Instrument ......................... 49
LIST OF FIGURES

1. Model of Differentiation (1962) by Witkin et al. ........ 14
2. Modified Model of Differentiation (1979) by Witkin et al. ......................... 15
3. Results of Test of Hypothesis of Common Slope for Field-Dependent and Field-Independent Faculty on the Massachusetts Community College Evaluation Section ......................... 39
4. Results of the Application of the Johnson-Neyman Technique with the Potthoff Modification to the Massachusetts Community College Evaluation Section for Field-Dependent and Field-Independent Faculty (p=.05) ......................... 40
5. Results of the Application of the Johnson-Neyman Technique with the Potthoff Modification to the Massachusetts Community College Section for Field-Dependent and Field-Independent Faculty (p=.10) ......................... 41
6. Results of the Application of the Johnson-Neyman Technique with the Potthoff Modification to the General Evaluation Section for Field-Dependent and Field-Independent Faculty (p=.10) ......................... 43
7. Results of the Application of the Johnson-Neyman Technique with the Potthoff Modification to the Ratings of Male Students and Female Students of Field-Dependent Faculty on the Massachusetts Community College Evaluation Section (p=.05) ......................... 49
FORMAL evaluation of individuals in education, business, industry, government, and the military service is a widespread phenomenon. If the rights of individuals are to be protected, fair and objective instruments of evaluation must be utilized.

Evaluation of teaching effectiveness has been a matter of concern in the field of education for many years as evidenced by the abundant literature available on faculty evaluation (Costin et al., 1971; Centra, J. A., 1973; Erickson, G. R. & Erickson, B. L., 1979; Feldman, K., 1978; Frey, P., 1973; Isaacson et al., 1964; Kulik, J. & McKeachie, W. J., 1975).

The need for objective instruments of evaluation for the 1980's is a pressing concern. Educators, battered by the combined effects of declining school enrollments, diminished public support, and decreasing financial resources are experiencing reductions in force. Theoretically, decisions to retain or dismiss a faculty member are based in part on the evaluation of that faculty member. Thus questions associated with the evaluation of faculty are of considerable significance to faculty, students, and administrators.

In the evaluation of faculty, one source of information which is widely used is student ratings. This is evidenced by the development

Student evaluation of teaching effectiveness is an integral component of faculty evaluation in the Massachusetts Community College system.

The educational literature reflects much concern with the reliability and validity of student ratings (Costin et al., 1971; Aleamoni, L. M. & Spencer, R. E., 1973; Subkoviak & Levin, 1974; Swanson & Sisson, 1971). However, few studies focus on how the cognitive style of the student may possibly influence the way a student rates an instructor. Cognitive style has been defined by Messick (1976) as the way an individual processes information.

The studies that have occurred related to cognitive style and student ratings have been confined to high school and four-year college populations (Aversano, F., 1976; Gaeta, J., 1977; Pettmen, P. J., 1977; Roeser, D., 1978).

There are many dimensions of cognitive style. The dimension which has been studied most extensively is that of field-dependence/independence. Herman A. Witkin and colleagues devoted much of their research efforts to the study of field dependence/independence.

Witkin defines field-independence as a tendency "to perceive items as discrete from background, when the field is organized, and to impose structure on a field and so perceive it as organized when the field has relatively little structure" (Witkin et al., 1977, p. 10). On the other hand, a field-dependent approach is characterized
by dealing "with the overall character of the field as given, and involves less intervention of mediators, such as analysis and structuring" (Witkin et al., 1977, p. 10).

In the literature pertaining to cognitive styles an idea which is often expressed is: Students and teachers with similar cognitive styles (field-dependence/independence) like each other better and find people with styles similar to their own more competent (Cross, K. P., 1976; Witkin et al., 1977; Witkin and Goodenough, 1977). These statements are for the most part based upon two pieces of research by DiStefano (1969) and James (1973) (Witkin et al., 1977).

The work of DiStefano (1969) and James (1973) indicated that students and teachers with similar cognitive styles, that is, matched for field-dependence or field-independence, tended to evaluate each other more positively than those with opposite styles.

However, a third study by Witkin et al. (1977) was conducted which did not show the expected teacher-student cognitive style match/mismatch results. Instead, a teacher-student sex match/mismatch was observed. It was found that teachers and students of the same sex valued each other more highly than teachers and students of the opposite sex. Witkin hypothesized that the sex match/mismatch superceded the cognitive style match/mismatch.

Work by Spindell (1975) and Roeser (1978) involving field-dependence/independence and ratings of instruction had negative results but both studies utilized videotapes and thus did not involve actual teacher-student interaction.
Aversano (1976) indicates that the mode of field approach may play a small role in student ratings of certain characteristics of instructors. Aversano (1976) stresses the need for future research to clarify the role of field-dependence/independence on student ratings of instruction.

To further complicate the issue Pettman (1976) states the results of his work indicate that although similar mode of field approach was not predictive of higher overall effectiveness ratings there may be a more complex relationship between field-dependence and student ratings than he had hypothesized.

Thus, conflicting evidence is reported in the literature as to the question of the influence of field-dependence/independence on student ratings of instructors. Virtually no research on this topic has occurred at the community college level.

**Purpose of the Study**

The purpose of this study is to determine if the mode of field approach (field-dependence or field-independence) of the students at a large, urban community college influences their rating of their instructors.

The research design for this study was developed to address the following hypotheses which are presented in the null form.

**Null Hypothesis 1:** The mode of field approach of community college students is not a significant factor in a student's overall rating of an instructor.
Alternative Hypothesis I: The mode of field approach of community college students is a significant factor in a student's rating of an instructor.

Null Hypothesis II: The mode of field approach of community college students is not a significant factor in the way a student responds to specific rating items on a faculty evaluation instrument.

Alternative Hypothesis II: The mode of field approach of community college students is a significant factor in the way a student responds to specific items on a faculty evaluation instrument.

Null Hypothesis III: The sex of a community college student is not a significant factor in the student's rating of an instructor.

Alternative Hypothesis III: The sex of a community college student is a significant factor in the student's rating of an instructor.

**Significance of the Study**

A number of researchers (Centra, 1975; Tobias & Hanlon, 1975; Synder & Clair, 1976) have indicated the increasing use of student ratings of instructors. As noted previously, student ratings are an integral component of faculty evaluation in the Massachusetts Community College system. This study is an attempt to provide further insights into the factors which influence how faculty are evaluated.
and to focus attention on the need for careful examination of how student ratings are interpreted.

In times of fiscal austerity and intense accountability demands it is essential that equitable evaluation instruments be employed. Hopefully this study will help to resolve the conflict that exists in the literature pertaining to the influence of mode of field approach and sex on the ratings of instructors.

Information gained from this study may enable faculty to begin to understand some of the reasons for the great variance that can exist among student ratings of the same instructor in the same class.

The results of this study may provide the data to support staff development efforts to raise the awareness of faculty to the significance of differing cognitive styles and the possible educational ramifications.

Conflict situations sometimes arise at another level of interaction on the educational scene, that between faculty and administration. Differing cognitive styles may affect the appraisal of each others' effectiveness and methods of operation. Data derived from this study may help to promote better understanding.

Further, application of information about cognitive styles might prove quite fruitful in business and industry. For example, an awareness of differing cognitive styles may play a pertinent role at the negotiating table in a variety of settings.

Virtually no research of the type conducted in this study has occurred at the community college level. In fact, as Martens (1976)
states there are no data available on the field-dependence/independence of community college students. Therefore, this study offers the opportunity to gain new knowledge about the field-dependent/independent dimension of cognitive style of community college students.

**Delimitations**

The investigator notes that this study has been delimited as follows:

1. This study does not address the question of the validity, reliability, or relevance of student ratings of instructors. The fact is that student ratings do occur and are widespread in their usage.

2. This study does not address the effect of other factors on student ratings such as age, size of class, time of day the class is offered, major or non-major, rank of professor, elective or required course, etc.

3. This study involves 488 subjects in a single, large, urban community college and thus it may not be appropriate to generalize the results to other populations.

4. The results of this study may be affected by measurement error of the instruments used. It must be noted that Section IV of the evaluation instrument is the actual form utilized in the Massachusetts Community College System and has not been validated.
5. It is possible that student awareness of participating in a research study will result in greater objectivity and thus possibly mask the influence of cognitive style or sex on ratings of instruction.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The literature of the fields of education and psychology is replete with studies concerned with cognitive style. As noted previously, one particular dimension, field-dependence/independence, has been the focus of numerous research studies.

This investigator has organized the review of the literature relevant to this study in the following way:

1. The development of the field-dependent/independent concept.
2. Field-dependence/independence and interpersonal behavior.
3. Cognitive style and evaluation of faculty at the post-secondary school level.

Nature of Cognitive Style

"Each individual has preferred ways of organizing all that he sees and remembers and thinks about." (Messick, 1976, p. 4)

The definition of cognitive style may vary among researchers but there is general agreement that one's cognitive style reflects individual differences in processing information. Witkin clearly differentiates between the concept of style and ability. He would define style as the manner of reaching a goal as distinguished from ability, the competence in achieving the goal (Witkin and Goodenough, 1977).
Witkin asserts that there are at least four important characteristics of cognitive styles in general. The first of these characteristics is that cognitive styles are process-oriented in that they are concerned with the form rather than the content of cognitive activity.

Secondly, cognitive styles are pervasive in that their influence moves across numerous human activities including social behavior and personality (Witkin et al., 1977). Goodenough defines cognitive styles as "dimensions of individual differences involving the form of cognitive functioning, with expressions in a wide variety of content areas including perceptual, intellectual, social-interpersonal, and personality defensive processes" (Goodenough, 1976, p. 1).

Thirdly, cognitive styles are considered to be relatively consistent over time. By early adolescence the cognitive style of an individual is generally stabilized (Witkin, Goodenough and Karp, 1967). Witkin stresses that this does not mean that cognitive styles are immutable.

Fourthly, cognitive styles tend to be bi-polar with regard to value judgments, unlike the uni-polar nature of abilities. As Witkin states, "to have more of an ability is better than to have less of it. With cognitive styles, on the other hand, each pole has adaptive value under specified circumstances, and so may be judged positively in relation to these circumstances" (Witkin et al., 1977, p. 10).

Having briefly considered the general nature of cognitive styles, specific attention is now concentrated on one dimension, field-dependence/independence.
Development of the Field-Dependent/Independent Concept

A review of the literature on cognitive style indicates that the major portion of research has been associated with one particular dimension, field-dependence/independence (FD/FI). For over twenty years H. A. Witkin and others have pursued this area of study. Their initial observations began with studies on perceptions (Witkin et al., 1954/72). In these studies of perception several different test situations were designed. Basically these tests experimentally separate factors normally used together in the determination of the upright in space. These tests include the Rod and Frame Test (RFT), the Rotating Room Test (RRT), and the Body Adjustment Test (BAT).

Briefly, the Rod and Frame Test (RFT) involves a luminous tilted frame centered within which is a tilted rod. The subject, in a darkened room, is required to bring the tilted rod to the upright within the tilted frame which remains stationary. Some subjects will use the external field (the frame) as the main referent for determining rod position and hence will align the rod with the tilted frame. This tendency to rely on the field as the primary referent is the essence of the field-dependent cognitive style. In contrast, some subjects will adjust the rod to the upright disregarding the stationary tilted frame. These individuals tend to rely on the felt positions of the upright body (and not the field) as a referent in order to bring the rod to the upright. This tendency is characteristic of the field-independent style.
In essence, the Rotating Room Test (RRT) and the Body Adjustment Test (BAT) examine the same phenomenon, the degree of reliance on the external field versus degree of reliance on self referents in perception. An individual's performance on these three tests tend to be consistent. From this early research by Witkin and others, the original working definitions of field-dependence and field-independence evolved. The term "field-dependent" was coined to designate this tendency to rely on external visual cues. Whereas, the term "field-independent" was used to signify the tendency to rely on gravitational cues in determination of the upright.

These definitions were modified as later work showed a relationship between performance on the RFT, RRT, and BAT and other kinds of perceptual tests such as the Embedded Figures Test (EFT). The EFT requires that part of an organized field be separated from the field. For example, in the EFT, the task is to locate a previously seen figure within a complex figure designed to camouflage it. In essence, the task requires an ability to disembed, to overcome an embedding context.

Witkin interpreted the ability to keep a rod separate from the frame surrounding it, or the body separate from the room containing it, as disembedding abilities. Witkin hypothesized that differences in disembedding abilities can account for individual differences in the perception of the upright. Thus, the concept of field-dependence/ independence was modified to describe "a general ability to overcome embedding contexts in perception" (Witkin and Goodenough, 1977, p. 3). Witkin considered the ability to overcome embedding contexts as the
"extent to which a person perceives analytically" (Witkin et al., 1977, p. 7). Witkin suggests that this ability to disembed in perception is related to disembedding ability in problem-solving (Witkin et al., 1977).

Later research cited by Witkin (Moore, Gleser and Warm, 1970; Nebelkoph and Dreyer, 1970; Witkin et al., 1962/74) demonstrated that the ability to disembed an item from an organized field in the perceptive and intellectual fields is related to the ability to impose structure on a field that lacks it. When confronted with unstructured material, the relatively field-independent individual is more likely to impose structure on the material than the relatively field-dependent individual (Witkin et al., 1977). Witkin and Goodenough (1977) states: Considering analysis and structuring as constituting articulated functioning, we now conceived of the greatly expanded individual difference we had been tracing as articulated-vs-global field approach (Witkin and Goodenough, 1977, p. 3).

A field-independent (articulated) approach is characterized by two complimentary processes, analysis and structuring. Witkin et al. (1977) state that:

The person who experiences in an articulated fashion tends to perceive items as discrete from background, when the field is organized, and to impose structure on a field and so perceive it as organized, when the field has relatively little inherent structure (Witkin et al., 1977, p. 10).

Historically, the concept of field-dependence/independence continued to evolve. Since 1962, the concept of the articulated-global field approach has been extensively studied.
The concept of a "differentiation" model was proposed in 1962 by Witken et al. to provide a framework to accommodate the results of the extensive research. Witkin, Goodenough and Oltman (1979) state:

Differentiation is a major formal property of an organismic system. A less differentiated system is in a relatively homogeneous state; a more differentiated system is in a relatively heterogeneous state. A system that is more differentiated shows greater self/nonself segregation, signifying definite boundaries between an inner core of attributes, feelings, and needs, identified as the self, and the outer world, particularly other people. In a less differentiated system, in contrast, there is greater connectedness between self and others. A system that is more differentiated is also characterized by greater segregation of psychological functions; that is, functions are more separate from each other and activities within each are more specialized (Witkin, Goodenough and Oltman, 1979, p. 1).

The 1962 Model of "differentiation" proposed by Witkin et al. was as follows:

Figure 1

![Diagram of Differentiation](from Witkin, Goodenough and Oltman, 1979, p. 1128)
Witkin et al. (1979) state that the assumption was since

...the development of differentiation was an organismic process, the main hypothesis we proposed was that greater or lesser differentiation is likely to be characteristic of an individual's activities in diverse domains (Witkin, Goodenough and Oltman, 1979, p. 1128).

This "differentiation" hypothesis has generated much research in the past twenty years and in light of newer evidence Witkin et al. (1979) have proposed a modified model of differentiation as illustrated in Figure 2.

Figure 2

DIFFERENTIATION

Self-nonself segregation (field independence)

Segregation of psychological functions

Segregation of neurophysiological functions

Restructuring skills

Limited interpersonal competencies

Structured controls

Specialized defenses

Hemispheric lateralization

(from Witkin, Goodenough and Oltman, 1979, p. 1138)

A comparison of the two models shows that differentiation remains at the apex. In the newer model, immediately below the apex are as Witkin et al. (1977) state:
...three major indicators of differentiation, self-nonself segregation, segregation of psychological functions, and segregation of neurophysiological functions. Self-nonself is where we locate the field dependence-independence cognitive style construct, a bi-polar process variable conceived to reflect extent of autonomy of external referents. Limited self-nonself segregation, responsible for less autonomous functioning or a field dependent cognitive style, signifies continued connectedness with others (Witkin, Goodenough and Oltman, 1979, p. 1137).

Witkin et al. hypothesize that such connectedness enhances the development of the interpersonal competencies. Using this rationale in the modified model of differentiation, they would place interpersonal competencies at a level below that of self-nonself segregation. Similarly, they suggest that restructuring skills may be a product of more autonomous functioning. Thus, they position restructuring skills at a level below self-nonself segregation. Further discussion of the segregation of psychological functions and segregation of neurophysiological functions are not pertinent to this study. However, these topics are discussed by Witkin, Goodenough and Oltman (1979).

Witkin et al. are encouraged by the progress that has occurred in expanding and refining the model of "differentiation" and anticipate that further research will prove fruitful (Witkin, Goodenough and Oltman, 1979).

As noted earlier, people tend to be consistent in their cognitive style. It is important to note that given a population of individuals, these individuals will be distributed along a continuum from strongly field-dependent to strongly field-independent. Witkin would
use the term "fixed" to refer to individuals who consistently show the characteristics of field-independence or, on the other hand, to the individuals who consistently display field-independent traits. In contrast, he would apply the term "mobile" to describe individuals who can utilize both modes of field approaches (Witkin, 1977).

There is evidence that women in Western societies tend to be more field-dependent than men. Results from cross-cultural studies by Witkin and Berry (1975) suggest that in mobile, hunting societies less sex differences occur in field-dependence/independence. Whereas in more agriculturally-oriented societies the sex differences in field-dependence/independence are more pronounced. The role of women in these two types of societies is quite different. Witkin suggests that this is evidence of the important role of socialization in the development of sex differences in field-dependence/independence/ However, as Witkin stresses, there is very little difference in mean between the sexes as compared to the range of scores within each sex (Witkin et al., 1977). A possible genetic basis for the noted sex differences has not been ruled out. Many studies are being conducted to determine if genetic factors may offer a possible solution to the observed sex differences in field-dependence/independence (Messick, 1976).

Field-Dependence/Independence and Interpersonal Behavior

An individual's cognitive style pervades not only the areas of perception and intellectual functioning but extends also into interpersonal behavior. Field-dependents and field-independents exhibit many different personal characteristics. The field-dependent, who is
global in approach, and is influenced by external referents, in a social situation will manifest behavior showing a tendency to rely on external cues. This is a reflection of the field-dependent's greater need for external referents in helping to structure a situation that is ambiguous and unstructured. Since field-dependent people tend to seek information from external sources, it is logical to expect that field-dependents will prefer interpersonal situations where there is an opportunity to capitalize on external cues. In contrast, field-independent people, utilizing their restructuring skills, appear relatively autonomous from others.

Mausner and Graham (1970) conducted a study that provides evidence that field-dependent people, under ambiguous conditions, tend to be more reliant on information received from another person perceived as competent than do field-independents. The study was concerned with the confidence that field-dependents and field-independents have in their own judgment as compared to the judgment of others. The design of the study involved pairs of subjects, a field-dependent and a field-independent, who were paired to accomplish a task. On the first trial one subject in each pair was led to believe that his partner's solution was correct and that his was incorrect. In the second trial each subject was given incorrect information about his partner's solution before he made his own choice. Mausner and Graham then examined the influence of the partner's judgment on the choice. Their findings were that field-dependent subjects who had been told in the first trial that their answers were wrong demonstrated larger leanings toward the partner's judgment on the second trial than did the field-independent
Both field-dependents and field-independents who were told that their solutions on the first trial were correct showed less tendency to be influenced by the judgment of their partners in the second trial. The conclusion derived from this study was that field-dependent individuals are more likely than field-independents to rely on the opinions of others when the others may have something to contribute (Mausner and Graham, 1970).

Witkin cites research by Konstadt and Forman (1975); Ruble and Nakamura (1972), which provides evidence that field-dependents spend more time looking at the faces of the people with whom they are interacting than do field-independents. Ruble and Nakamura (1972) found that during problem-solving when a clearly designated external source of information is available field-dependents are more likely than field-independents to look at the person who is its source (Witkin and Goodenough, 1977). In fact, a study by Crutchfield et al. (1958) involving field-dependent and field-independent army officers showed that relatively field-dependent army officers performed significantly better than field-independent officers in identifying pictures of other army officers with whom they had spent several days in training (Witkin et al., 1977).

Witkin notes that several studies by Adcock and Webberly, 1971; Alexander, 1970; Baker, 1967, demonstrate that field-dependents do not perform any better than field-independents in the experimental task, the memorization of faces. Witkin does not consider these results a refutation of Crutchfield's results but suggests that the superior recall ability of the field-dependents in Crutchfield's work was related
to the fact that the subjects had actually had social interaction with the faces they were asked to recall. This was not the case in the other studies (Witkin and Goodenough, 1977).

An interesting work by White and Kernalequen (1971) cited by Gaeta demonstrated that field-dependent women choose to wear clothes that conform to that of their peer group. In contrast, field-independent women appear to not be influenced by their peer group choices of clothing and exhibited very different types of attire (Gaeta, 1977).

Witkin refers to the studies by Eagle, Goldberger, and Breitman (1969) which were conducted to compare the ability of field-dependent and independent subjects to recall verbal messages with a social content. Their results indicated that the field-dependent subjects outperformed the field-independents in ability to remember the verbal message with social connotations (Witkin and Goodenough, 1977).

In general, much of the research by Witkin, Goodenough, and others demonstrated that field-dependents tend to be more socially alert with well-developed interpersonal skills. Witkin describes some of these social characteristics, stating,

The evidence we now examine is clear in demonstrating that field-dependent persons show a strong interest in people, prefer to be physically close to others, are emotionally open, and favor real-life situations that will bring them into contact with people; in contrast, field-independent persons are less interested in people, show both physical and psychological distancing from others, and favor impersonal situations (Witkin and Goodenough, 1977, p. 672).
Field-independent people tend to function not as well as field-dependents in the social arena but function better than field-dependents in situations that involve structuring and analytical skills.

Cognitive Style and Evaluation of Faculty at the Post-Secondary School Level

In the literature pertaining to cognitive styles, there are many references to the idea that students and teachers with similar cognitive styles like each other better and find people with styles similar to their own more competent (Cross, 1976; Witkin et al., 1977; Witkin and Goodenough, 1977). As noted previously, these statements are for the most part based upon the research of DiStefano (1969) and James (1973).

DiStefano's design involved 28 male high school teachers and 110 male high school students, grades 10-12. The mode of field approach was measured by using the long form of the Embedded Figures Test. After the test administration, the actual numbers of subjects involved were 10 teachers and 100 students, 10 students per teacher with 5 designated as field-dependents and 5 identified as field-independents. A description questionnaire was used to collect the interpersonal perceptions of the subjects. The major finding of DiStefano's study was that,

People with similar perceptual styles (as measured by the EFT) tend to describe each other in highly positive terms, while people whose perceptual styles are different have a strong tendency to describe each other in negative terms (DiStefano, 1969, p. 114).
It is important to note that this preference was not confined to personal characteristics alone but also to intellectual characteristics.

A second study of interpersonal perceptions was conducted by James (1973). The research design involved twenty-two black female high school students and four black male high school teachers. The mode of field approach of the four teachers was determined by the Portable Rod and Frame Test. The Group Embedded Figures Test and the Articulation of Body Concept Test were used to identify eleven field-dependent female students and eleven field-independent female students. Four classes were then formed with an equal distribution of field-dependent and field-independent students. Each class was taught by one of the four teachers. The teachers were then asked to rate the personal characteristics of their students and the students were asked to rate the personal characteristics of their teachers. The findings were similar to those of DiStefano (1969) in that teachers and students with similar mode of field approach exhibited a more interpersonal attraction (Gaeta, 1976).

A third study cited by Witkin (1977) involves work by Witkin, Emmerich, Oltman, and McDonald. This study involved twenty-five teachers, twelve males (six F-D and six F-I), and twelve females (six F-D and six F-I). Ninety-six male and female students ages 14-15 were involved. Each of the twenty-four teachers taught a mini-course to four students (two males, one F-D and one F-I; two females, one F-D and one F-I). The results of interpersonal attraction questionnaires administered to both the teachers and the students were surprising. The anticipated results of a teacher-student cognitive style match-mismatch
effect did not occur. In fact, Witkin states that a teacher-student sex match-mismatch was observed. Teachers and adolescent students of the same sex valued each other more highly than teachers and students of the opposite sex. Witkin interpreted the results to mean that a sex match-mismatch took precedence over a cognitive style match-mismatch effect (Witkin et al., 1977).

Spindell (1975) conducted a study to determine if student teachers identified as field-dependent or field-independent would rank students of a similar style higher than students of a dissimilar style. The student teachers observed video-taped lessons of field-dependent and field-independent students being taught by a teacher. The results indicated an absence of any bias in favor of one cognitive style over another. However, it must be noted that no actual interaction occurred between the student teachers and the students being observed. In fact, Spindell suggests that because the video-tapes were viewed in a university classroom with the associated implications of evaluation and testing, that a concern for accuracy in observation may have covered up cognitive preferences.

Aversano (1976) designed a study to measure the influences of student categorical and perceptual variables upon ratings assigned by students to various instructor behaviors. The categorical variables of students studied were sex, major, semesters completed, and course achievement. The perceptual variables included values, locus of control and field-dependence/independence. In reporting his findings, Aversano states that the differences between instructors must be accounted for before trying to measure the influence of student
characteristics. He did not attempt this in his study. His results showed that in courses of high interaction between the teacher and students, the social and authority values of students as measured by the Ames-Lied Values Questionnaire played a small but significant role in rating the instructor. Aversano suggests that the mode of field approach may play a small role in student ratings of certain characteristics of instructors. The results did not show a relationship between ratings of instructors and the number of semesters completed, sex, or major.

Research by Gaeta (1977) was conducted to determine whether the cognitive style of students influenced their perception of teaching behavior. Gaeta was specifically concerned with teachers and students who were matched and mismatched for mode of field approach. Gaeta's study differed from DiStefano's in several ways. DiStefano used the Embedded Figures test to identify the mode of field approach of his subjects. Gaeta used the Group Embedded Figures Test and the Articulation of Body Concept Test. DiStefano focused on personality traits while Gaeta indicates that his use of the Tuckman Teacher Feedback Form allowed him to measure teacher behavior and not personality. Both DiStefano and Gaeta used all male teachers and all male students. Gaeta's findings showed that the perceptions of field-dependent students of Ideal Teaching Behavior did not differ from the perceptions of field-independent students. When Actual Teaching Behavior scores (TTFF) were analyzed, Gaeta found that matched students perceived their teachers as significantly more aware, warmer, more innovative, more responsive than did mismatched students. In addition, when the Ideal and Actual Teaching
behavior scores were examined, the matched students perceived their Actual teacher's behavior closer to Ideal compared with the perceptions of mismatched students of the same teachers.

A study of student evaluation of teacher behavior was conducted by Pettman (1976). He was concerned with the three general areas of: the influence of perceptual variables, such as field-dependence/independence on student evaluations; the similarities between evaluation in the educational and industrial settings; and the relationship between perceived grade equity and student ratings of teachers. Pettman's sample involved 234 male and female college students and 10 college faculty from a private, church-related, four-year school in South Dakota. The high school sample involved 215 male and female students and 10 high school teachers. The Group Embedded Figures Test and a modified Teacher Behavior Description Questionnaire were administered. The Teacher Behavior Description Questionnaire was developed from a modification of the Supervisory Behavior Description Questionnaire. Pettman's findings relevant to field-dependence/independence showed that field-independent high school students discriminated between traits of their instructors to a greater degree than field-dependent high school students. No support was obtained for his hypothesis that similarity in mode of field approach between teachers and students was predictive of higher overall effectiveness ratings. However, Pettman concluded that there may be a more complex relationship between student ratings and field-dependence than had been hypothesized.

Roeser (1978) designed an experimental study involving 120 female students in an undergraduate psychology course. Seventy percent of the
subjects were education majors. His purpose was to determine the effects of field-dependence/independence on college students' ratings of instruction. The Group Embedded Figures Test was administered to measure the degree of field-dependence/independence of the subjects. The students observed video-taped lectures by a professional actor. They were told that a series of instructional tapes was being prepared by another university and that student feedback on the lectures was being sought. Roeser found no significant differences between field-dependents and field-independents ratings of instruction. Again, as in Spindell's study (1975), there was no interaction between the students and the instructor and student concern with objectivity in evaluation of the instruction may have masked cognitive preferences.

The last study of this review was reported by Packer and Bain (1978) and involved the matching and mismatching of 32 teacher-student pairs on two dimensions of cognitive style: serialism-holism and field-dependence/independence. The purpose of the study was to determine if matching-mismatching would have an effect on achievement and subjective ratings of each other. The experimental design required the teachers to structure and teach their student partner a 30-40 minute mathematics lesson. The teacher subjects were final year trainee math teachers and the student subjects were all first year psychology students.

The matching-mismatching in the serialism-holism dimension did not yield significant results. However, matching effects were obtained in objective test performance and in teachers' and students' subjective ratings of each other at the extremes of field-dependence/independence. Field-independent students performed significantly better than
field-dependent students with field-independent teachers. However, under field-dependent teachers, field independent students did not perform significantly better than field-dependent students. In contrast, field-dependent teachers were more successful with field-dependent students than field-independent students.

With respect to the evaluation component of this study, Packer and Bain found no significant effect of teachers' ratings of students but when they analyzed the student ratings of teachers, significant results were evident in conjunction with field-dependence/independence. Their results showed that the students' ratings of teachers were influenced by the teachers' cognitive style; more favorable ratings were given to field-dependent teachers than field-independent teachers. Interestingly, more detailed analysis indicated that the tendency to give the field-dependent teachers higher ratings was attributable almost entirely to field-dependent students.

It is important to recall that this study involved teacher-student pairs and was restricted to teaching one 30-40 minute class. Packer and Bain recommend that future studies involve teacher/class encounters and be of longer duration.

The results of this study should provide information that may aid in resolving the conflict that exists in the literature relating to this area of research.

Additionally, this study should provide data on the mode of field approach of community college students. As noted earlier (Martens, 1976), there is a paucity of information regarding field-dependence/independence in community college students.
CHAPTER III

METHODS

Subjects

Faculty and student subjects were selected from a comprehensive community college serving the urban population in the Metropolitan Boston area. The student population is approximately 2300. Subjects were asked to volunteer to participate in this study. A sample of 488 students, male (n=157), female (n=331) was obtained. The mean age of the student sample was 24.11. The faculty sample of 14 included males (n=7) and females (n=7). The mean age of the faculty sample was 46.57.

Extreme caution was exercised in the selection of the sample to insure that all major program areas were included, Liberal Arts, Business Administration, Office Education, Allied Health and Human Services.

Instrumentation

The instruments utilized in this study were the Group Embedded Figures Test (GEFT) published by the Consulting Psychologists Press and a four-part faculty evaluation instrument compiled for this study.

The Group Embedded Figures Test (GEFT) is an instrument used to identify the degree of field-dependence/independence. The GEFT was developed by Oltman, Raskin, and Witkin as an adaptation of the Embedded Figures Test. The Embedded Figures Test is an individually administered test (Witkin et al., 1971). The GEFT is a speed test in which the subjects are asked to find and trace the hidden embedded figures in the
more complex figures. The GEFT is divided into three sections. The first section is, in essence, a practice section with seven very simple figures and a two minute time limit. The second and third sections each have nine more difficult items with five minutes allowed for each section.

A score of one (1) is given for each of the eighteen (18) hidden figures identified and traced correctly. Thus, scores range from 0-18. The norms available in the GEFT Manual are as follows:

<table>
<thead>
<tr>
<th>Number Correct: GEFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartiles</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
</tr>
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<td>4</td>
</tr>
</tbody>
</table>

Witkin stresses that these norms should serve only as a general guide for populations different from the population upon which the norms were based (students from an eastern liberal arts college, N=397) (Witkin et al., 1971).

Scores in Quartile 1 may be considered indicative of a field-dependent mode of approach; Quartile 2, relatively field-dependent; Quartile 3, relatively field-independent; and Quartile 4, field-independent.

Witkin (1971) reports a reliability estimate of .82 for both males and females which compares favorably with the reliability of the Embedded Figures Test.
The validity of the GEFT has been assessed against the Embedded Figures Test since the GEFT is intended to be a group form of the Embedded Figures Test. Witkin reports that in studies with college undergraduates to correlate that Embedded Figures Test and the GEFT the following results were obtained: males: validity coefficient = -.82 and females: validity coefficient = -.63. The correlation coefficients are negative because the tests are scored in reverse fashion.

The faculty evaluation instrument used in this study is composed of four sections (Appendix A). Section I involves the collection of demographic data about the student. Section II is a four item general evaluation of the instructor and in conjunction with Sections III and IV provided the necessary data to test Null Hypotheses I and III. Section II was excerpted directly from the Instructional Assessment System of the University of Washington. Gillmore (1980) reports that in classes with 15 or more students every item has a reliability of .80 and higher. The rating items are very global in nature and thus, as Gillmore indicates, allow comparison among a variety of classes. As described by Gillmore, the purpose of the items is to gain a very general assessment of students' attitudes toward the course as a whole, the content of the course, the contribution of the instructor to the course, and the effectiveness of the instructor in teaching the subject matter.

Section III of the evaluation instrument was designed to provide more specific evaluation of the instructor by the student. Responses to Section III provided the data necessary to test Null Hypotheses I, II, and III. Section III is composed of scales developed as a result
of a three year study by Hildebrand et al. (1971) to define and describe effective teaching. Hildebrand states:

...many researchers (among them Bendig, 1953; Coffman, 1954; Cosgrove, 1959; Crannel, 1953; Estrin, 1965; French, 1957; Garverick & Carter, 1962; Gibb, 1955; Isaacson et al., 1964; Remmers & Baker, 1952; Solomon, 1966; Solomon et al., 1964; and Wherry, 1950) have identified basic components, dimensions or scales of effective teaching by sorting individual items describing aspects of effective teaching into relative groups (Hildebrand, 1971, p. 16).

In Hildebrand's study (1971) five scales were developed. The scales are described as follows:

Scale 1. Analytic/Synthetic approach, relates to scholarship with emphasis on breadth, analytic ability, and conceptual understanding.

Scale 2. Organization/Clarity, relates to skill at presentation, but is subject-related not student-related, and not concerned merely with rhetorical skill.

Scale 3. Instructor-Group Interaction, relates to rapport with the class as a whole, sensitivity to class response, and skill at securing active class participation.

Scale 4. Instructor-Individual Student Interaction, relates to mutual respect and rapport between the instructor and the individual student.
Scale 5. Dynamism/Enthusiasm, relates to the flair and infectious enthusiasm that comes with confidence, excitement for the subject, and pleasure in teaching.

On the evaluation instrument developed for this study, in Section III, items 1-7 relate to Scale 1, Analytic/Synthetic Approach; items 8-14 relate to Scale 2, Organization/Clarity; items 15-22 relate to Scale 3, Instructor/Group Interaction; items 23-29 relate to Scale 4, Instructor-Individual Student Interaction; and items 30-36 relate to Scale 5, Dynamism/Enthusiasm. Reliabilities from .80 to .89 have been reported by Hildebrand et al. (1971) for the five scales.

Section IV of the evaluation instrument (items 37-50) is the actual Student Evaluation form currently in use in the Massachusetts Community College system. Student responses to this section provided the data to test Null Hypotheses I and III.

**Data Collection**

Permission was received from the administration of the community college to seek faculty and student volunteers to participate in this study. Having identified faculty volunteers across a number of disciplines, several sections of students for each instructor were asked to participate. A brief description of the purpose of the study was given to the students at this time. All students who volunteered to participate were asked to sign an informed consent form (Appendix B).

Faculty and student subjects were assured anonymity. All instruments administered to the subjects were coded for identification
purposes. Students were made aware that their responses to the evaluation instrument would in no way affect their grade and would not be seen by the instructor. Subjects were informed that they could withdraw from the study at any point in time. The results of the GEFT were made available to each student and faculty member that wished the information.

The sample having been established, the investigator met with the student and instructor subjects at a regularly scheduled class session. The GEFT was administered in accordance with the directions in the GEFT Manual (Witkin et al., 1971).

At a later date the GEFT was hand-scored by the investigator according to the directions in the GEFT Manual (Witkin et al., 1971).

At approximately the thirteenth week of the semester, the faculty evaluation instrument was administered to the student subjects by the investigator during a regularly scheduled class session. The instructor involved was not present in the classroom during the administration of the evaluation instrument. The timing of the administration of the evaluation instrument coincides with the time frame used consistently in the Massachusetts Community College system for student evaluation.

Data Analysis

The hypotheses stated previously in Chapter I were tested in the following manner.

The raw scores obtained for Sections II, III, and IV of the evaluation instrument were converted to standardized or z scores. This was
done for comparison purposes since the number of possible responses differed for each section.

The faculty subjects were divided into two groups, field-dependent and field-independent, on the basis of their scores on the GEFT.

To test Null Hypothesis 1, that the mode of field approach of community college students is not a significant factor in a student's overall rating of an instructor, the Johnson-Neyman technique (Johnson & Neyman, 1936) with the Potthoff modification (Potthoff, 1964) was used. The Johnson-Neyman technique is a regression approach. An interaction is demonstrated when two or more regression slopes are non-parallel. Interactions can, and commonly are, demonstrated by analysis of variance. However, as Dowaliby & Berliner (1971) indicate, analysis of variance is not the best method because when only means of each group are utilized some information is lost. Regression analysis approaches solve this problem. Dowaliby & Berliner (1971) further point out that "the Johnson-Neyman technique (1936) is a regression approach which provides more useful information about interactions, particularly disordinal interactions (i.e., where the regression lines cross over within the range of data), than the simple regression approach" (Dowaliby & Berliner, 1971, p. 6).

The Johnson-Neyman technique essentially defines a region of statistical homogeneity about the crossover point of two non-parallel regression slopes (Dowaliby & Schumer, 1973). The Potthoff modification provides for simultaneous regions of significance. Potthoff (1964) describes his modification as a technique for obtaining a region (point set) whose simultaneous confidence coefficient is 95 percent. In other
words, a region such that, with confidence $\geq 95$ percent (for $p=.05$), it can be stated that the two groups are different simultaneously for all points contained in it. Potthoff indicates that,

> When we are dealing with simultaneous confidence bounds, it may be sensible to choose an alpha value somewhat larger than what we would customarily choose for simple confidence bounds. For example, if an investigator is accustomed to using a 95 per cent confidence coefficient ($\alpha=.05$) for simple confidence statements, he might prefer to use a 90 or 80 per cent confidence coefficient ($\alpha=.10$ or .20) for simultaneous confidence statements, rather than 95 per cent (Potthoff, 1964, p. 244).

A computer program entitled ANALATI (Dowaliby & Berliner, 1971) using the Johnson-Neyman technique with the Potthoff modification was redimensioned to accommodate the number of cases in this study.

Null Hypothesis II stated that the mode of field approach of community college students is not a significant factor in the way a student responds to specific rating items on a faculty evaluation instrument. A one-way analysis of variance was performed using the ANOVA program from the Statistical Package for Social Sciences (SPSS) to test Null Hypothesis II. In this analysis, the student subjects were classified as field-dependent (FD), mid-range (MR), or field-independent (FI) on the basis of their scores on the GEFT. An analysis of variance was then done for each of the five scales of the Specific evaluation section described previously under Instrumentation.

Null Hypothesis III stated that the sex of a community college student is not a significant factor in the student's rating of an instructor. To test this, regression analysis procedures using the
Johnson-Neyman technique (1936) with the Potthoff modification (1964), as described earlier in relation to Null Hypothesis I, were performed.
CHAPTER IV
RESULTS

All of the evaluation instruments administered in this study were used in the data analyses. Thus, the student sample provided 488 evaluation instruments. In the various analyses, however, there is some variation in sample sizes because some students failed to respond to some of the items. Missing data were handled by means of listwise deletion, i.e., "cases with missing values are automatically eliminated from all calculations" (Nie et al., 1975, p. 353). Nie et al. (1975) recommend the use of listwise deletion in regression analysis as the safest way to treat missing data.

All student subjects (N=488) and faculty subjects (N=14) completed the GEFT. The mean score of the student subjects on the GEFT was 8.45 (SD 5.24, median 8.05). Table 1 illustrates the range of student GEFT scores.

Table 1
RANGE OF STUDENT GEFT SCORES

<table>
<thead>
<tr>
<th>GEFT Score</th>
<th>N</th>
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<tbody>
<tr>
<td>0</td>
<td>24</td>
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<tr>
<td>1</td>
<td>23</td>
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<tr>
<td>2</td>
<td>30</td>
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<td>6</td>
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<td>7</td>
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<td>8</td>
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<td>9</td>
<td>28</td>
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<table>
<thead>
<tr>
<th>GEFT Score</th>
<th>N</th>
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<td>10</td>
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<tr>
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<td>12</td>
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<td>17</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>20</td>
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</tbody>
</table>
The mean GEFT score of the faculty subjects was 12. Table 2 illustrates the range of faculty GEFT scores.

Table 2
RANGE OF FACULTY GEFT SCORES

<table>
<thead>
<tr>
<th>GEFT Score</th>
<th>N</th>
<th>GEFT Score</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>10</td>
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</tr>
<tr>
<td>8</td>
<td>0</td>
<td>18</td>
<td>3</td>
</tr>
</tbody>
</table>

Faculty scoring 0-5 (N=5) were categorized as field-dependent (FD). Faculty scoring 15-18 (N=9) on the GEFT were categorized as field-independent (FI).

Null Hypothesis I

Null Hypothesis I stated that the mode of field approach of community college students is not a significant factor in a student's overall rating of an instructor. To test this, attention was focused on student ratings of their instructors on each of the three sections of the evaluation instrument.

Massachusetts Community College evaluation section. Using the redimensioned ANALATI program of Dowaliby & Berliner (1971) tests of parallelism of slope were performed regressing the dependent variable (the z
score of the student ratings for the Massachusetts Community College section) on the GEFT scores of the student subjects for Group I (field-dependent faculty) and Group II (field-independent faculty). The results, shown in Figure 3, indicated significantly different slopes (F=8.3105, df=1,481.p <.01).

![Figure 3](image)

**Figure 3.** Results of Test of Hypothesis of Common Slope for field-dependent and field-independent faculty on the Massachusetts Community College Evaluation Section.

Since the regression slopes were significantly non-parallel, the Johnson-Neyman technique with the Potthoff modification was used to further analyze the data. Results of the analysis, illustrated in Figure 4,
revealed a region of non-significance between GEFT scores of 3.94 and 23.18 (p=.05). There were 106 cases (21.7% of the entire student sample) observed below the region of non-significance in the region of significance. No cases were above the region of non-significance since it extended beyond 18, the highest possible score on the GEFT.

Figure 4. Results of the application of the Johnson-Neyman Technique with the Potthoff Modification to the Massachusetts Community College Evaluation Section for field-dependent and field-independent faculty (p=.05).
In view of the previously noted comments of Potthoff (1964) regarding simultaneous confidence bounds and the selection of larger alpha values, the data were also analyzed at alpha=.10. Results of this analysis, illustrated in Table 5, revealed a region of non-significance between 5.06 and 17.78. There were 165 cases (34% of the entire student sample) below the region of non-significance in a region of significance and 20 cases (4.1%) above the region of non-significance.

Figure 5. Results of the application of the Johnson-Neyman Technique with the Potthoff Modification (p=.10) to the Massachusetts Community College Evaluation Section for field-dependent and field-independent faculty.

The results show that field-dependent students with GEFT scores of 0-4 (at p=.05) or 0-5 (at p=.10) rate field-dependent faculty significantly higher than field-independent faculty.
General evaluation section. As in the analysis of data described for the Massachusetts Community College evaluation section, tests of parallelism of slope were performed regressing the z scores of the student ratings for the General evaluation section on the GEFT scores of the student subjects for Group I (field-dependent faculty) and Group II (field-independent faculty). The results indicated significantly different slopes \( (F=4.8796, \text{df}=1,481, p<.05) \).

The application of the Johnson-Neyman technique with the Potthoff modification at \( p=.05 \) did not result in the delineation of a region of significance. However, at the .10 level, an analysis of the data indicated a region of non-significance for GEFT scores above 5.10. The results are illustrated in Figure 6. There were 165 cases (34% of the entire student sample) below the region of non-significance in the region of significance. There were no cases above the region of non-significance.

Again, the results indicate that there are significant differences at the .10 level in the way field-dependent and field-independent faculty are rated by field-dependent students with GEFT scores of 0-5. Field-dependent students appear to rate field-dependent faculty higher than field-independent faculty.

Specific evaluation section. As in the analyses performed in the previous two sections, tests of parallelism of slope were performed. The results indicated that the slopes for field-dependent faculty and field-independent faculty were not significantly different. The Johnson-Neyman
Figure 6. Results of the application of the Johnson-Neyman Technique with the Potthoff Modification \((p=.10)\) to the General evaluation section for field-dependent and field-independent faculty.

technique with the Potthoff modification at .05, .10, and .20 levels indicated no area of significance.

However, although the analysis of data from the Specific evaluation section does not reflect significant differences in the way field-dependent faculty and field-independent faculty are rated, it does illustrate that there is a correlation (significant at \(p=.01\)) between the GEFT score of the student and the rating given. Table 3 summarizes the correlations (Pearson product moment) for each section of the evaluation instrument for field-dependent and field-independent faculty.
Table 3

CORRELATIONS FOR STUDENT GEFT SCORES AND Z SCORE RATING FOR FIELD-DEPENDENT AND FIELD-INDEPENDENT FACULTY ON THE THREE SECTIONS OF THE EVALUATION INSTRUMENT

<table>
<thead>
<tr>
<th>Field-Dependent Faculty</th>
<th>Field-Independent Faculty</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Mass. C. C.</td>
<td>143</td>
</tr>
<tr>
<td>General</td>
<td>143</td>
</tr>
<tr>
<td>Specific</td>
<td>143</td>
</tr>
</tbody>
</table>

*Significance level p < .01

Summary of the results for tests of Null Hypothesis I. Results from the analyses conducted on two of the three sections of the evaluation instrument favored the rejection of Null Hypothesis I and acceptance of Alternative Hypothesis I. In other words, the mode of field approach of community college students is a significant factor in the rating of faculty.

On the Massachusetts Community College evaluation section, the analysis indicated that the field-dependent students with GEFT scores of 0-4 assigned significantly higher ratings to field-dependent faculty than to field-independent faculty (p = .05).

Similarly, on the General evaluation section the results indicated that one could conclude with 90% confidence that field-dependent students with GEFT scores of 0-5 rate field-dependent faculty higher than field-independent faculty.
Null Hypothesis II

Null Hypothesis II stated that the mode of field approach of community college students is not a significant factor in the way a student responds to specific rating items. In other words, do students of varying degrees of field-dependency respond significantly differently to specific rating items.

The students were divided into three groups based on their GEFT scores. The groups were "field-dependent," "mid-range," and "field-independent." Subjects in the "field-dependent" group had GEFT scores from 0-5 (N=165 or 33.8% of the total student sample). The "mid-range" group had GEFT scores of 6-11 (N=164 or 33.6% of the total student sample). The field-independent group consisted of students with GEFT scores from 12-18 (N=159 or 32.6% of the total student sample).

Data obtained from the Specific section of the evaluation instrument were used to test Null Hypothesis II. A one-way analysis of variance was performed using the average score of each student in the field-dependent, mid-range, and field-independent groups for each of the five separate scales composing the Specific evaluation section. The five scales, which were previously discussed in Chapter III in the Instrumentation section, delineate specific characteristics of effective teaching as described by Hildebrand et al. (1971). The scales were 1. Analytic/Synthetic; 2. Organization/Clarity; 3. Instructor-Group Interaction; 4. Instructor-Individual Student Interaction; and 5. Dynamism/Enthusiasm.
The results for each of the scales are illustrated in Table 4. As demonstrated in Table 4, the Analytic/Synthetic scale and the Instructor-Group Interaction scale results from analysis of variance were significant at $p < .05$. Thus, it appears that on two of the five scales the mode of field approach of community college students may influence their responses to specific rating items. An examination of the mean rating given by field-dependent, mid-range, and field-independent students on each of the five scales illustrates that field-dependent students appear to consistently assign higher ratings than their mid-range and field-independent peers.

**Null Hypothesis III**

Null Hypothesis III stated that the sex of a community college student is not a significant factor in the student's rating of an instructor.

To test this, the ratings of male students were compared with the ratings of female students for field-dependent faculty and field-independent faculty separately for each of the three sections of the evaluation instrument.

Massachusetts Community College evaluation section. As in the test of Null Hypothesis I, the redimensioned ANALATI program (Dowaliby & Berliner, 1971) was used to analyze the data. Tests of parallelism of slope between the male students and female students of field-dependent faculty indicated significantly different slopes ($F=7.7725$, $df=1,139$, $p < .01$). Since the regression slopes were significantly non-parallel
Table 4

RESULTS OF A ONE-WAY ANALYSIS OF VARIANCE OF THE RATINGS OF FIELD-DEPENDENT, MID-RANGE, AND FIELD-INDEPENDENT STUDENTS ON EACH OF THE FIVE SCALES OF THE SPECIFIC EVALUATION SECTION

<table>
<thead>
<tr>
<th>Scale #1. Analytic/Synthetic</th>
<th>Student Mode</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FD</td>
<td>MR</td>
<td>FI</td>
</tr>
<tr>
<td>Mean rating:</td>
<td>5.63</td>
<td>5.48</td>
<td>5.33</td>
</tr>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squares</td>
<td>7.468</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean square F Sig. of F</td>
<td>3.734</td>
<td>3.209</td>
<td>.041</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale #2. Organization/Clarity</th>
<th>Student Mode</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FD</td>
<td>MR</td>
<td>FI</td>
</tr>
<tr>
<td>Mean rating:</td>
<td>6.04</td>
<td>5.89</td>
<td>5.88</td>
</tr>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squares</td>
<td>2.579</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean square F Sig. of F</td>
<td>1.289</td>
<td>.891</td>
<td>.411</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale #3. Instructor/Group Interaction</th>
<th>Student Mode</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FD</td>
<td>MR</td>
<td>FI</td>
</tr>
<tr>
<td>Mean rating:</td>
<td>5.59</td>
<td>5.44</td>
<td>5.23</td>
</tr>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squares</td>
<td>10.777</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean square F Sig. of F</td>
<td>5.389</td>
<td>3.461</td>
<td>.032</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale #4. Instructor/Individual Student Interaction</th>
<th>Student Mode</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FD</td>
<td>MR</td>
<td>FI</td>
</tr>
<tr>
<td>Mean rating:</td>
<td>6.02</td>
<td>5.99</td>
<td>5.94</td>
</tr>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squares</td>
<td>.484</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean square F Sig. of F</td>
<td>.242</td>
<td>.201</td>
<td>.818</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale #5. Dynamism/Enthusiasm</th>
<th>Student Mode</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean rating:</td>
<td>6.09</td>
<td>5.94</td>
<td>5.91</td>
</tr>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squares</td>
<td>3.037</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean square F Sig. of F</td>
<td>1.519</td>
<td>1.242</td>
<td>.290</td>
</tr>
</tbody>
</table>
the Johnson-Neyman technique with the Potthoff modification (p=.05) was used to further analyze the data. Results of the analyses, illustrated in Figure 7, revealed a region of non-significance between GEFT scores of 8.02 and 52.09. There were 85 cases (59.4% of the student sample rating field-dependent faculty) observed below the region of non-significance in a region of significance. Examination of Figure 7 shows that field-dependent females (GEFT scores 0-8) rate field-dependent faculty significantly higher than do field-dependent male students with GEFT scores of 0-8.

Figure 7. Results of the application of the Johnson-Neyman Technique with the Potthoff Modification at p=.05 to the ratings of male students and female students of field-dependent faculty on the Massachusetts Community College Evaluation Section.
Table 5 summarizes the correlations between male and female GEFT scores and ratings assigned field-dependent and field-independent faculty on each of the three evaluation sections. As shown in Table 5, the correlation coefficient (Pearson product moment) between the GEFT scores of female students and the z score rating given to field-dependent faculty was -.45 (significant at p=.001). The correlation coefficient between the GEFT scores of male students and the z score rating given to field-dependent faculty was -.03.

Table 5

<table>
<thead>
<tr>
<th>Field-Dependent Faculty</th>
<th>N</th>
<th>r</th>
<th>Field-Independent Faculty</th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass C.C. males</td>
<td>45</td>
<td>-.03</td>
<td>Mass C.C. males</td>
<td>112</td>
<td>-.04</td>
</tr>
<tr>
<td>females</td>
<td>98</td>
<td>-.45*</td>
<td>females</td>
<td>233</td>
<td>-.07</td>
</tr>
<tr>
<td>General males</td>
<td>45</td>
<td>-.13</td>
<td>General males</td>
<td>112</td>
<td>-.001</td>
</tr>
<tr>
<td>females</td>
<td>98</td>
<td>-.31**</td>
<td>females</td>
<td>233</td>
<td>-.02</td>
</tr>
<tr>
<td>Specific males</td>
<td>45</td>
<td>-.03</td>
<td>Specific males</td>
<td>112</td>
<td>-.06</td>
</tr>
<tr>
<td>females</td>
<td>98</td>
<td>-.27**</td>
<td>females</td>
<td>233</td>
<td>-.06</td>
</tr>
</tbody>
</table>

*Significant at p<.001

**Significant at p<.01

Attention was next focused on the z score ratings given by male and female students of field-independent faculty. The slopes for the
two groups (male students and female students) were not significantly non-parallel \( (F=.0736, \, df=1,238, \, p>.05) \). Application of the Johnson Neyman technique with the Potthoff modification indicated no region of significance. In other words, male students and female students do not appear to rate field-independent faculty significantly differently. As shown in Table 5, the correlation coefficient between the GEFT score of females and z score rating given to field-independent faculty was -.07. The correlation coefficient between the GEFT score of male students and field-independent faculty was -.04.

**General evaluation section.** As in the previous analyses, the z score rating of male and female students on the General evaluation section for field-dependent and field-independent faculty was analyzed separately using the redimensioned ANALATI program (Dowaliby & Berliner, 1971). The results indicated no region of significance. Male and female students did not differ significantly in rating field-dependent or field-independent faculty on the General evaluation section. However, as summarized in Table 5, the correlation coefficient between the GEFT scores of female students and the ratings assigned field-dependent faculty was -.31 (significant at \( p=.01 \)). With respect to male students' GEFT scores and field-dependent faculty, the correlation was -.13. Practically no correlation (-.001) appeared to exist between the GEFT scores of male students and the ratings assigned field-independent faculty. While a correlation coefficient of -.02 existed between the GEFT scores of females and ratings assigned field-independent faculty.
Specific evaluation section. Using the same procedures as in the analyses of the Massachusetts Community College section and the General evaluation section, the results did not yield significant differences in the way male and female students rated field-dependent and field-independent faculty. The correlation coefficient between the GEFT scores of male students and the rating given to field-dependent faculty was -.03. However, the correlation coefficient between the GEFT scores of female students and the rating of field-dependent faculty was -.27 (significant at p .01). For the field-independent faculty, the correlation coefficient for male GEFT scores and rating given was -.06. Similarly, the correlation coefficient for female GEFT scores and ratings assigned field-independent faculty was -.06.

Summary of the results for tests of Null Hypothesis III. The analysis conducted on the Massachusetts Community College evaluation section produced results which favored the rejection of the Null Hypothesis. The sex of the community college student appears to be a significant factor in ratings assigned field-dependent faculty on the Massachusetts Community College evaluation section. Although the results of the analyses of data provided by the General and Specific evaluation sections did not meet the confidence levels set by the investigator, it should be noted that the significant correlations between GEFT scores and z score ratings of females and the lack of such a relationship for males are the results one could expect if the Null Hypothesis was not true. Thus, although not significant of and by themselves, the results appear to support the positive findings on the Massachusetts Community College evaluation section.
CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The purpose of the present study was to assess the influence of the mode of field approach (field-dependence/independence) of community college students upon the overall ratings assigned by students to their instructors. In addition, the question of whether community college students of varying degrees of field-dependency/independency respond significantly differently to specific rating items was addressed. A third research concern was to attempt to determine if the sex of community college students was a factor in the evaluation of faculty by students.

The subjects participating in this study were 488 students in an urban community college. The student subjects were enrolled in Liberal Arts, Business Administration, Allied Health and Nursing, Office Education, and Human Services.

There were fourteen faculty subjects, seven males and seven females.

The Group Embedded Figures Test (GEFT) developed by Witkin et al. (1971) was utilized to determine the degree of field-dependence/independence of both student and faculty subjects.

A faculty evaluation instrument was developed which consisted of three sections designed to obtain student ratings on general rating
items, specific rating items, and the actual Massachusetts Community College evaluation form.

Data obtained from the evaluation instrument were analyzed using the Johnson-Neyman technique (1936) with the Potthoff modification (1964). This technique was used in testing Null Hypotheses I and III. Analysis of variance was used to test Null Hypothesis II. In the regression approach of the Johnson-Neyman technique a region of non-significance is identified about the cross-over point of two non-parallel regression slopes. With the Potthoff modification to the Johnson-Neyman technique simultaneous regions of significance are provided.

Discussion

Null Hypothesis I. Analysis of the data obtained from the Massachusetts Community College section and the General evaluation section support the rejection of the Null Hypothesis. Alternative Hypothesis I states that the mode of field approach of community college students is a significant factor in the rating of faculty.

The application of the Johnson-Neyman technique with the Potthoff modification at p=.05 indicates that strongly field-dependent students (GEFT scores of 0-4) rate field-dependent faculty significantly higher than field-independent faculty. Similarly, on the General evaluation section at p=10 strongly field-dependent students (GEFT score of 0-5) assign higher ratings to field-dependent faculty than to field-independent faculty. In other words, there appears to be a significant
difference in the way faculty of differing cognitive styles are rated at the community college level.

These results, at the community college level, support the idea which has been repeatedly expressed in the literature pertaining to cognitive styles (Cross, K.P., 1976; Witkin et al., 1977; Witkin & Goodenough, 1977) that people with similar cognitive styles like each other better and find each other more competent. From this study it appears that the affinity for similar cognitive styles is significant at the strongly field-dependent end of the continuum. These results are consistent with the studies of DiStefano (1969), James (1973), and Packer & Bain (1978) in that field-dependent students evaluate field-dependent faculty higher than field-independent faculty. However, the results of this study do not indicate that field-independent students rate field-independent faculty significantly higher than field-dependent faculty. Pettman (1976) concluded that there may be a more complex relationship between student ratings and field-dependence than had been hypothesized.

Although the Specific evaluation section did not reflect significant differences in the way field-dependent and field-independent faculty are rated by community college students, the correlation coefficient of -.21 (significant at p < .01) must be noted. Correlations exist between the degree of field-dependency as indicated by the GEFT score of community college students and the ratings assigned faculty. In fact, on all three of the evaluation sections the correlation coefficients are negative and significant at p < .01 (Massachusetts Community College = -.33; General = -.27; Specific = -.21). These results seem
to indicate that the higher the GEFT score of the student, the lower the rating assigned faculty. These results were in the direction anticipated since studies (DiStefano, 1969; Klau, 1973) have shown that field-dependent people tend to evaluate others more positively than do field-independent people.

Gruenfeld (1970) postulates that field-dependent people are more considerate and more likely to exhibit a "halo" effect in rating the abilities of others. By "halo" effect Gruenfeld (1970) means a tendency not to differentiate among traits across others.

The results of this study raise questions with respect to the use of student evaluations of faculty. Witkin et al. (1977) report numerous studies that have shown that relatively field-dependent people favor educational and vocational areas that emphasize social content and involve interpersonal relations. Field-dependents are characterized as "people" oriented. Whereas, field-independent people favor educational and vocational domains which emphasize analytical skills and where interpersonal relations are not particularly involved. Witkin et al. (1977) indicate that in the academic setting, relatively field-dependent students are likely to choose as an area of specialization sociology, humanities, languages, social work, business, elementary school teaching, clinical psychology, writing, and nursing. Field-independent students tend to specialize in the sciences, mathematics, art, experimental psychology, engineering, and architecture. In view of the research results cited by Witkin et al. (1977) and the results of this study, it would appear that student ratings of faculty must be carefully interpreted. Faculty who teach in disciplines considered to
be a favored domain of field-independent students, and are most likely field-independent themselves, may indeed receive lower ratings than faculty teaching courses in the educational areas favored by field-independent students.

Null Hypothesis II. Null Hypothesis II stated that the mode of field approach of community college students is not a significant factor in the way a student responds to specific rating items. The purpose was to determine if the responses of students of differing degrees of field-dependence/independence to the five scales of the Specific evaluation section were significantly different.

On all scales, a comparison of the mean ratings of field-dependent, mid-range, and field-independent students show that the field-dependent students consistently assign higher ratings than mid-range and field-independent students. This may be another expression of the "halo" effect described by Gruenfeld (1970) previously. These results also appear to be further evidence to support the contention of Witkin et al. (1977) that greater consideration of the feelings of others is among the personal attributes of field-dependent people.

Scale #1 involved the rating by students of the analytical and conceptual abilities of their instructors. The results of the analysis of variance indicated that there were significant differences \( p < .05 \) in the mean ratings of field-dependent, mid-range, and field-independent students. Observations of the mean ratings show that field-dependent students rate instructors higher in Analytic/Synthetic abilities than do the field-independent students. Field-independent students, who tend
to be analytical themselves, may be more able to evaluate objectively
the conceptual and analytical abilities of their instructors.

The results of the analysis of variance performed for Scale #2, Organization/Clarity, showed that field-dependent, mid-range, andfield-independent students did not differ significantly in their re-
sponses to these items. These results were anticipated as all faculty
involved in this study present detailed syllabi and behaviorally speci-
fied learning objectives to all their students. Indeed, Cross (1976)
states that although the teaching approach of community college faculty
is more personally oriented than that of university faculty the approach
of community college faculty provides greater structure and control.

Scale #3 and Scale #4 were composed of items designed to rate
Instructor/Group Interaction and Instructor/Individual Student Inter-
action. It was anticipated that the field-dependent students would
assign significantly higher ratings than the mid-range and field-inde-
pendent students for these two scales. It was thought that the specif-
ic items in these scales addressed characteristics that were socially
oriented, more valued, and possibly detected more readily by field-
dependent students. However, the expected results only occurred for
the Instructor/Group Interaction scale. Field-dependent, mid-range,
and field-independent mean ratings on this scale differed significantly
(p < .05). Again, the field-dependent students rated faculty higher on
these items than did the mid-range and field-independent students.
This scale involved rating the effectiveness of an instructor in en-
couraging class discussion, detecting when the class was bored, and,
in general, establishing rapport with the class. Indeed these items
refer to qualities which field-dependent students are probably highly
attuned to as "people" oriented people and probably highly value when
detected in others. As Witkin and Goodenough (1977) indicate, field-
dependent people tend to be particularly attentive to the social sur-
roundings. Martens (1976) points out that field-dependent students
preferred small group work and discussion classes. Field-independent
students, being more autonomous, may not be as perceptive as field-
dependent students in detecting in an instructor the kinds of group
dynamic skills being assessed in these items and therefore assign lower
ratings to the instructor.

Results of the analysis of data from the Instructor/Individual
Student Interaction scale were unexpected. Field-dependent, mid-range,
and field-independent students did not differ significantly in their
responses. In fact, observations of the mean ratings for all five
scales show that the highest mean rating assigned by field-independent
students (5.94) was on this particular scale. This may relate to the
observations cited earlier by Cross (1976) that community college fac-
ulty emphasize individual attention and have a more informal personally
oriented approach than university faculty. Field-independent students
who may not need or favor group interaction activities such as class
discussion may have been the recipients of individual attention from an
instructor and may objectively accord the instructor a high rating on
this scale.

Results of the analysis of data obtained from Scale #5, Dynamism/
Enthusiasm, indicated no significant differences in the responses of
field-dependent, mid-range, and field-independent students.
It must be noted that the five scales composing the Specific evaluation section had alpha reliabilities, showing internal consistency, from .80 to .89 (Hildebrand et al., 1971).

Null Hypothesis III. Null Hypothesis III stated that the sex of community college students was not a significant factor in students' rating of an instructor. The results of analyses to test this were mixed. Specifically, the analysis of data obtained from the Massachusetts Community College evaluation section favor the rejection of the Null Hypothesis. Strongly field-dependent female students (GEFT score 0-8) rate field-dependent faculty significantly higher than do strongly field-dependent male students (GEFT scores 0-8).

An examination of the correlation coefficients between female GEFT scores and the ratings assigned field-dependent faculty showed a correlation of -.45, significant at $p < .001$. The correlation coefficients for the male students' GEFT scores and ratings given field-dependent faculty was -.03. Similarly, on the General and Specific evaluation sections the correlation coefficients between female GEFT scores and ratings given to field-dependent faculty were significant ($p < .01$) and negative. The more field-independent the female student was the lower the rating assigned the field-dependent faculty. Conversely, the more field-dependent the female student was, the higher the rating given to field-dependent faculty. This relationship does not appear to exist for male students of field-dependent faculty. Thus, although the analyses of data from the Specific and General evaluation sections did not show that male and female students differ significantly in the way they
evaluate field-dependent faculty, the negative correlations (significant at p < .01) between female GEFT scores and ratings of field-dependent faculty are in a direction that lends support to the findings from the Massachusetts Community College section.

One must now reconsider the results from tests of Null Hypothesis I in light of these findings. The results that led to the rejection of Null Hypothesis I indicated that strongly field-dependent students (GEFT scores 0-4) evaluated field-dependent faculty significantly higher than field-independent faculty. However, the results from tests of Null Hypothesis III seem to indicate that it is the extremely field-dependent females who are responsible for the higher ratings accorded field-dependent faculty. One might conclude that the variance in student ratings is in part due to strongly field-dependent female students. However, this does not appear to be the case because when the ratings of male and female students of field-independent faculty were analyzed it does not appear that females rate field-independent faculty significantly differently than do males.

A possible interpretation is that the field-dependency of the faculty member is a potent factor. Field-dependent faculty appear to elicit highly positive ratings from strongly field-dependent female students. It may be that the positive interpersonal perceptions of field-dependent faculty by female field-dependent students are related to what Witkin (1973) suggests are similar modes of communication, foci of interest and personality traits. It is logical to assume that a match between a field-dependent instructor and a field-dependent student, both of whom possess the social orientation characteristic of
field-dependence, will be conducive to a more positive type of interaction and hence a higher rating. Of course, it may be that the more positive interaction between instructor and student could result in a more positive learning outcome and, in fact, the higher ratings are well deserved.

These observations apparently cannot be applied to male field-dependent students. The correlation coefficients for the GEFT scores of males with ratings assigned field-dependent and field-independent faculty are without exception insignificant. It appears that in male students field-dependency either does not influence ratings or the effect is modified in some way.

A number of studies exist in which sex of student has been considered as a variable in student ratings (Bendig, 1952; Lovell & Haner, 1955; Remmers, 1959; Hildebrand, 1971; Aversano, 1976). The results of these studies basically show that sex of student was not a factor in student rating of faculty. However, Feldman (1978) raises the question of proportion of women in a class. Feldman (1978) states that an analysis of courses which show somewhat higher teacher ratings tend to be the same ones in which, proportionately, women are overrepresented. Feldman (1978) also indicates that there is some evidence that proportion of women in a class may have a small positive relationship with the ratings of teachers. In light of the results of this study, one might hypothesize that in the courses with a higher proportion of women and higher ratings, that field-dependency might be exerting an influence.
As noted previously, caution must be exercised in the interpretation of student ratings of faculty. Female field-dependent students may tend to cluster in certain courses and areas of study.

Conclusions

Based on the analyses of data, several conclusions were drawn. The conclusions, as presented, are limited to the population studied.

Generally speaking, the mode of field approach (FD/Fl) and sex of community college students are significant factors in the student rating of faculty. More specifically, strongly field-dependent female students (GEFT score 0-4) assign significantly higher overall ratings to field-dependent faculty than to field-independent faculty.

Field-dependent students, in general, give higher ratings than field-independent students. The lower the GEFT score of the community college student, the higher the rating given by that student. Conversely, the higher the GEFT score of the community college student, the lower the rating given by that student.

Male field-dependent students are less influenced by their field-dependent cognitive style than are female field-dependent students.

Lastly, positive interactions among field-dependent people are more complex than simply the result of cognitive style matches.

In conclusion, it is necessary to reiterate some of the factors that may have delimited this study. The results of the study may have been affected by measurement error of the instruments used. As Pettman (1976) points out, the GEFT may not be as sensitive in measuring field-dependence/independence as the original Rod and Frame test. Similarly,
as noted earlier, the Massachusetts Community College evaluation section was not a validated instrument. It is, however, the instrument currently in use in the Massachusetts Community College system and thus for all practical purposes was appropriate to use in this study.

Lastly, the field-independent faculty subjects were not examined to determine if they could be further identified as "soft, tender-minded," or "hard, tough minded" differentiators. Gruenfeld (1969) discussed the idea that one group of field-independents appeared to be "soft" and "tender-minded" in their perceptions of others and thus may perform more like field-dependents. This may be what Witkin and Goodenough (1977) describe as "mobile." A "mobile" is an individual who has access to characteristics associated with both field-dependents and field-independents (Witkin & Goodenough, 1977). If indeed some of the field-independent faculty in this study were "mobiles" it may be that they received higher ratings than they would have had they been "hard" field-independents. This would have raised the ratings of the field-independent faculty group as a whole and could have accounted for the fact that field-dependent and field-independent faculty were not rated significantly differently on the Specific evaluation section.

**Recommendations**

The following recommendations are made in view of the results of this study:
1. Interpretations of student ratings of faculty must consider the possibility that field-dependent students will cluster in certain courses as opposed to others and that this will result in higher ratings for the faculty involved in courses favored by field-dependent students. Attention to the proportion of female students in any class must be considered. This is necessary to insure the equitable treatment of all faculty.

2. Staff development efforts for faculty should examine the implications of cognitive styles to the educational scene and should be research based. Information that is available on foci of interest, modes of communication, and personality characteristics of field-independent and field-dependent people will permit faculty to accommodate more readily to the variety of cognitive styles in the classroom.

3. Efforts must be made to raise the awareness of educational administrators to the influence of cognitive styles on their interactions with their colleagues and the possible influence on their evaluations of their subordinates.

4. Efforts must be made to educate students on the pervasive role of their cognitive style in their life and its influence on their perceptions of other people.
Students could be helped to develop skills or strategies for functioning effectively with faculty of differing cognitive styles.

**Suggestions for Further Research**

It is hoped that the results of this study will stimulate further research on the influence of various dimensions of cognitive style on interpersonal perceptions of faculty and students and the ramifications for education.

This study has suggested a need to design a study to gain insights into the positive nature of the relationship that appears to exist between field-dependent faculty and field-dependent female students. Such a study should attempt to determine if the positive relationship with field-dependent female students exists for both male and female field-dependent faculty.

There is a need to analyze the characteristics and teaching behaviors of field-dependent faculty at the community college level. Such knowledge might be helpful in identifying teaching strategies that provide what is perceived as a helping environment by field-dependent students.

Similarly, more information is needed on the characteristics and teaching behavior of field-independent faculty at the community college level. Any further study involving field-independent subjects should attempt to distinguish between "soft" and "hard" differentiators or "mobile" and "fixed" field-independents.
The academic achievement of field-dependent students at the community college level might be studied to determine if the positive interpersonal perceptions between field-dependent faculty and field-dependent students significantly enhances the learning process. This is important since the results of this study indicated that 67% of the student sample was field-dependent. These results support the work of Martens (1976), inspired by Cross (1976), that field-dependents were overrepresented in community colleges.

If in fact community colleges have proportionately greater numbers of field-dependent students than field-independent students, what factors attract field-dependents to community colleges.

A study could be designed to determine the proportion of field-dependent and field-independent faculty at the two-year, four-year, and university levels. This might be related to what Cross (1976) describes as the more "evocative" approach of community college faculty as compared to the more "didactic" approach of university faculty.

The attention of many concerned educators is focused on the problems of retention. Can attrition be reduced by identifying extremely field-dependent students entering community colleges and matching them initially with field-dependent faculty or mentors?

There is a definite need to know more about field-independent students. A study could be designed to focus on specific traits of field-independents to determine what traits or combination of traits contribute to the tendency of field-independents to consistently give lower student ratings to faculty at the community college level.
An interesting study could be designed to determine how quickly the positive perceptions between field-dependent faculty and field-dependent students occur. Are first impressions lasting? If the results of such a study support the old adage then the implications for the first session of any class are important.

In conclusion, it must be emphasized that field-dependence/independence is but one dimension of cognitive style. Other components of cognitive style must be analyzed in order that in the future there can be a fuller understanding of the factors that influence how human beings interact with each other.
REFERENCES


APPENDIX A
COMMUNITY COLLEGE FIELD RESEARCH PROJECT

SECTION I

1. Student code # _____       Faculty code # _____
2. Name of course: ___________  3. Required or elective
4. Age: ______                  5. Male or female
6. Grade I expect to receive: A B C D N
7. Do you like the instructor more than the course material? Yes No
8. Do you like the course material more than the instructor? Yes No

SECTION II

TO PROVIDE A GENERAL EVALUATION

E=excellent       F=fair
VG=very good      P=poor
G=good            VP=very poor

1. The course as a whole was:
   E VG G F P VP
2. The course content was:
   E VG G F P VP
3. The instructor's contribution to the course was:
   E VG G F P VP
4. The instructor's effectiveness in teaching the subject matter was:
   E VG G F P VP

SECTION III

TO PROVIDE MORE SPECIFIC EVALUATION

Rate the following items on a scale of 1 to 7 where 1 = not at all descriptive of my instructor through #7 = very descriptive of my instructor.
1. Discusses points of view other than his/her own. CIRCLE:
   1 2 3 4 5 6 7

2. Contrasts implications of various theories
   1 2 3 4 5 6 7

3. Discusses recent developments in the field
   1 2 3 4 5 6 7

4. Presents origins of ideas and concepts
   1 2 3 4 5 6 7

5. Gives references for more interesting and involved points
   1 2 3 4 5 6 7

6. Presents facts and concepts from related fields
   1 2 3 4 5 6 7

7. Emphasizes conceptual understanding
   1 2 3 4 5 6 7

8. Explains clearly
   1 2 3 4 5 6 7

9. Is well prepared
   1 2 3 4 5 6 7

10. Gives lectures that are easily outlined
    1 2 3 4 5 6 7

11. Is careful and precise in answering questions
    1 2 3 4 5 6 7

12. Summarizes major points
    1 2 3 4 5 6 7

13. States objectives for each class session
    1 2 3 4 5 6 7

14. Identifies what he/she considers important
    1 2 3 4 5 6 7
15. Encourages class discussion
   1 2 3 4 5 6 7

16. Invites students to share their knowledge and experiences
   1 2 3 4 5 6 7

17. Clarifies thinking by identifying reasons for questions
   1 2 3 4 5 6 7

18. Invites criticism of his own ideas
   1 2 3 4 5 6 7

19. Knows if the class is understanding him/her or not
   1 2 3 4 5 6 7

20. Knows when students are bored or confused
   1 2 3 4 5 6 7

21. Has interest and concern in the quality of his/her teaching
   1 2 3 4 5 6 7

22. Has students apply concepts to demonstrate understanding
   1 2 3 4 5 6 7

23. Has a genuine interest in students
   1 2 3 4 5 6 7

24. Is friendly toward students
   1 2 3 4 5 6 7

25. Relates to students as individuals
   1 2 3 4 5 6 7

26. Recognizes and greets students outside of class
   1 2 3 4 5 6 7

27. Is accessible to students outside of class
   1 2 3 4 5 6 7

28. Is valued for advice not directly related to the course
   1 2 3 4 5 6 7
29. Respects students as persons
   1 2 3 4 5 6 7
30. Is a dynamic and energetic person
   1 2 3 4 5 6 7
31. Has an interesting style of presentation
   1 2 3 4 5 6 7
32. Seems to enjoy teaching
   1 2 3 4 5 6 7
33. Is enthusiastic about his/her subject
   1 2 3 4 5 6 7
34. Seems to have self-confidence
   1 2 3 4 5 6 7
35. Varies the speed and tone of his/her voice
   1 2 3 4 5 6 7
36. Has a sense of humor
   1 2 3 4 5 6 7

SELF-RATING: I work harder on this course than on most courses I have taken:

1. definitely false  2. more false than true  3. in between  
4. more true than false  5. definitely true

SECTION IV

TO PROVIDE A SECOND GENERAL EVALUATION

E=excellent    P=poor 
VG=very good   US=unsatisfactory
G=good

37. How well did the course meet the published course description?
   E  VG  G  P  US
38. How well were the instructional objectives of the course explained?
   E  VG  G  P  US

39. To what extent were the instructional objectives accomplished?
   E  VG  G  P  US

40. How well was the course organized?
   E  VG  G  P  US

41. How well prepared was the instructor?
   E  VG  G  P  US

42. How effective was the instructor's presentation?
   E  VG  G  P  US

43. How well do you think the instructor had a grasp of his/her subject matter?
   E  VG  G  P  US

44. To what degree do you think the method of instruction was appropriate to the course objectives?
   E  VG  G  P  US

45. How well did the instructor respond to the student questions?
   E  VG  G  P  US

46. To what degree were the students encouraged and given the opportunity to participate in class?
   E  VG  G  P  US

47. How fair was the instructor's method of evaluation of student performance?
   E  VG  G  P  US

48. Did the instructor meet with and help you when requested? Answer if applicable.
   E  VG  G  P  US

49. How effective overall was the assigned text as a learning aid? Answer if applicable.
   E  VG  G  P  US
50. How effective overall was the supplementary course material as a learning aid? Answer if applicable.

E VG G P US

Thank you very much for your cooperation.
CONSENT FORM

In order to fulfill the requirements for the Doctor of Education Degree at the University of Massachusetts/Amherst, I am conducting research on the effect of cognitive style on the evaluation of faculty by students.

Permission has been received from the Administration to conduct this study.

A number of faculty and students are being asked to participate. The information collected will be handled statistically and confidentially. Hopefully, the results will help to improve the teaching-learning process.

As part of this study, you will be asked to complete the following:

1. The Group Embedded Figures Test
2. A faculty evaluation instrument

At any point in this study you may withdraw from participating. The results of the Group Embedded Figures Test will be made available to any student wishing them.

Thank you very much for your cooperation.

Mary Anne Self

I have read the statements above and consent to participate.

Signature: ___________________________ Date: ____________